Université du Maine **Mai 2009**

Bibliographie post-carbone

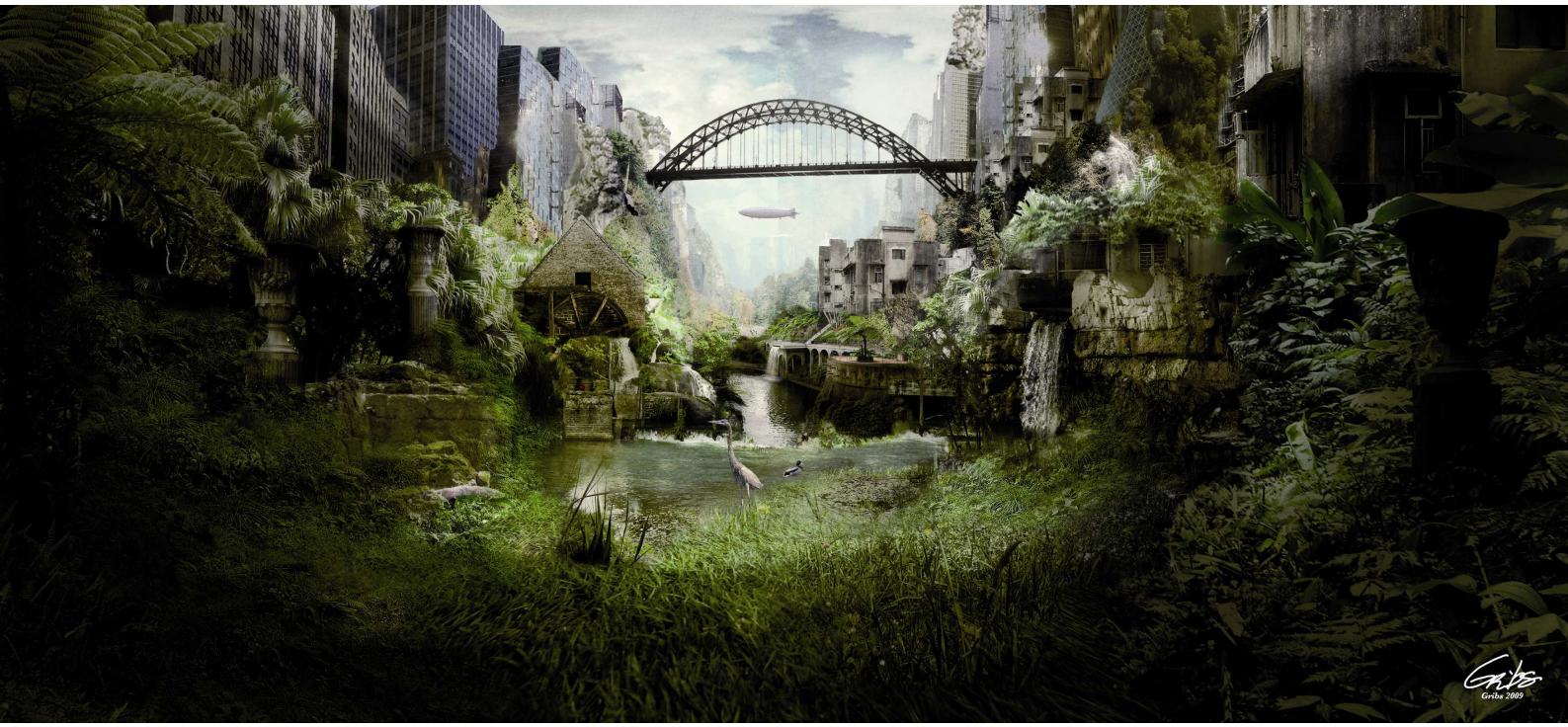

Illustration : gribs - jb@wemotion.net

Programme de recherche
“Repenser les villes dans une société post-carbone ?”

Sous la direction de la Mission Prospective du MEEDDAT
Rédigée par Elsa MOR
Année 2009

Sommaire

N.B : Cette bibliographie s'est principalement attachée aux références disponibles sur Internet.

OUVRAGES

I. Ville post-carbone

-Barnes D.F., Krutilla K., Hyde W.F., 2005. ***The Urban Household Energy Transition: Social And Environmental Impacts In The Developing World,*** Resources for the Future, 144 pages
ISBN-10: 1933115076
ISBN-13: 978-1933115078

As cities in developing countries grow and become more prosperous, energy use shifts from fuelwood to fuels like charcoal, kerosene and coal, and, ultimately, to fuels such as liquid petroleum gas, and electricity. Energy use is not usually considered a socio-economic issue. Yet, as this book demonstrates, the movement away from traditional fuels has a strong social class dimension, as poor people are the last to attain the benefits of using modern energy. The result is that health risks from the continued use of wood fuel fall most heavily on the poor, and indoor pollution from wood stoves has its greatest effect on women and children who cook and spend much more of their time indoors.
Barnes, Krutilla, and Hyde provide the first worldwide assessment of the energy transition as it occurs in urban households, drawing upon data collected by the World Bank Energy Sector Management Assistance Programme (ESMAP). From 1984-2000, the program conducted over 25,000 household surveys in 45 cities spanning 12 countries and 3 continents. Additionally, GIS mapping software was used to compile a biomass database of vegetation patterns surrounding 34 cities. Using this rich set of data, the authors describe problems and policy options associated with each stage in the energy transition. The authors show how the poorest are most vulnerable to changes in energy markets and demonstrate how the collection of biomass fuel contributes to deforestation. Their book serves as an important contribution to development studies, and as a guide for policymakers hoping to encourage sustainable energy markets and an improved quality of life for growing urban populations.

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-Bernard P., Mettelet C., Bernard D.C., 1983. ***L'Énergie et la ville : Pour un pouvoir énergétique local,*** C.F.P.C., 256 pages
ISBN-10: 2903791023

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-Bulkeley H., Betsill M., 2005. ***Cities and Climate Change: Urban Sustainability and Global Environmental Governance*****,** Routledge new edition**,** 237 pages
ISBN-10: 0415359163
ISBN-13: 978-0415359160

This book provides a critical analysis of the role of cities in addressing climate change and the prospects for urban sustainability. It suggests that the formation and implementation of local climate change policy is far from straightforward.

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-Burchell R.W., Downs A., Mukherji S., 2004. ***Sprawl Costs: Economic Impacts Of Unchecked Development,*** Island Press***,*** 224 pages
ISBN-10: 1559635703
ISBN-13: 978-1559635707

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-Darley J., Room D., Rich C., 2006. ***Relocalize Now !: Getting Ready for Climate Change And the End of Cheap Oil,*** New Society Publishers***,*** 256 pages
ISBN-10: 0865715459
ISBN-13: 978-0865715455

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-Droege P., 2006. ***The Renewable City: A Comprehensive Guide to an Urban Revolution,*** John Wiley & Sons Ltd***,*** 322 pages
ISBN-10: 0470019263
ISBN-13: 978-0470019269

Frequently the site of crisis or turmoil, individual cities can be fragile environments. For the first time in history, however, the future of the entire urban system is being thrown into doubt. Catastrophic climate changes threaten the life support of hundreds of millions, perhaps billions, of urban dwellers around the world. Supplies of fossil fuels, especially oil and natural gas, are declining worldwide. Modern cities not only depend on petroleum products for their power, but also for their goods and services _ including the making and packaging of virtually all food. How might this precarious global condition be turned around? How can the energy infrastructure of cities, towns and rural settlements be restructured, to confront the environmental challenges of our time? Could a new, positive global vision emerge out of the impending, massive shift from unsustainable fuels to a renewable energy base?
Opening with a definition of renewable power, the book concisely sets out the fundamental logic and philosophical framework of the urban energy revolution. It then progresses to look at how cities best attempt adaptation to accelerating, anthropogenic climate change: by mitigating it and fighting its root causes. Two central chapters map the spatial implications of the urban renewable energy transformation and the new technologies that might be involved in successfully creating the renewable city. The guide not only compares different approaches to creating renewable cities, but also examines various sustainable building assessment and design tools. The volume concludes with an easy to use best-practice template for local governments and planners, applying lessons from advanced cities around the world

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-Girardet H., 2008. ***Cities People Planet: Urban Development and Climate Change***, John Wiley & Sons Ltd**,** 328 pages
ISBN-10: 0470772700
ISBN-13: 978-0470772706

Urban growth is changing the condition of humanity and the face of the earth. Half the world's people now live in cities, with most of the other half depending on them for their economic survival.
Mega-cities of ten million or more people are the largest, most complex structures ever made. They are the central hubs of modern economies and their transport systems. The resource use and waste discharge of contemporary cities dominate the human presence on earth. Fossil fuel technology powers modern urbanisation, but in the coming decades many cities will become vulnerable to the rising tides of climate change. Across the world, we need a revolution in `future-proofing' our cities, dramatically increasing their energy efficiency, switching to renewable energy technology and mimicking natural zero-waste ecosystems.
Since its publication in 2004, Cities People Planet has established itself as the classic book on urbanisation. With this new edition, the fast-moving text and ninety case studies of leading-edge city initiatives the world over, have been supplemented by a new chapter that looks at how cities are constructively tackling climate change as the changes to both the biosphere and the atmosphere have become undisputed and as the depletion of natural resources are becoming a major constraint.
Girardet discusses the work that has been done in established cities such as Heidelberg in Germany, Adelaide in Australia and Woking in the UK, as well as the pioneering efforts that are being undertaken in eco-cities such as Dongtan, near Shanghai, where an entire metropolis is being built from scratch for half a million inhabitants.

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-Glicksman L., Lin J., 2006. ***Sustainable Urban Housing in China: Principles and Case Studies for Low-energy Design,*** Kluwer Academic Publishers**,** 270 pages
ISBN-10: 1402054122
ISBN-13: 978-1402054129

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-Hopkins R., 2008. ***The Transition Handbook. From oil dependency to local resilience.*** Green Books, 240 pages
ISBN: 9781900322188

We live in an oil-dependent world, arriving at this level of dependency in a very short space of time by treating petroleum as if it were in infinite supply. Most of us avoid thinking about what happens when oil runs out (or becomes prohibitively expensive), but *The Transition Handbook* shows how the inevitable and profound changes ahead can have a positive outcome. These changes can lead to the rebirth of local communities that will grow more of their own food, generate their own power, and build their own houses using local materials. They can also encourage the development of local currencies to keep money in the local area.
There are now over 30 “transition towns” in the UK, Australia and New Zealand with more joining as the idea takes off. They provide valuable experience and lessons-learned for those of us on this side of the Atlantic. With little proactive thinking at the governmental level, communities are taking matters into their own hands

and acting locally. If your town is not a transition town, this upbeat guide offers you the tools for starting the process.

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-Klein S. L., 2008. ***Power to Change the World: Alternative Energy and the Rise of the Solar City***, Booksurge Llc**,** 372 pages
ISBN-10: 1419679872
ISBN-13: 978-1419679872

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-Lerch D., 2008. ***Post Carbon Cities: Planning for Energy and Climate Uncertainty***, Post Carbon Institute, 112 pages
ISBN-10: 0976751054
ISBN-13: 978-0976751052

Post Carbon Cities: Planning for Energy and Climate Uncertainty is a guidebook on peak oil and global warming for people who work with and for local governments in the United States and Canada. It provides a sober look at how these two phenomena are quickly creating new uncertainties and vulnerabilities for cities of all sizes, and explains what local decision-makers can do to address these challenges. Post Carbon Cities fills an important gap in the resources currently available to local government decision-makers on planning for the changing global energy and climate context of the 21st century.
Version abrégée : http://www.lyttelton.net.nz/documents/PostCarbonCitiesGuidebook.pdf

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-Linstroth T., Bell R., 2007. ***Local Action: The New Paradigm in Climate Change Policy****,* University Press of New England*,* 208 pages
ISBN-10: 1584656727
ISBN-13: 978-1584656722

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-Lundqvist L. J., Biel A., 2007. ***From Kyoto to the Town Hall: Making International and National Climate Policy Work at the Local Level*****,** Earthscan Publications, 184 pages
ISBN-10: 1844074234
ISBN-13: 978-1844074235

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-Mega V., 2005**. *Sustainable Development, Energy, and the City. A Civilisation of Visions and Actions,*** Springer, 280 pages
ISBN 0387243542, 9780387243542

Advancing towards sustainable development will be impossible without the active participation of informed and aware citizens and decision-makers. This publication will provide the unspecialised decision-makers, citizens, students and policy-makers of the future, with significant information about a dynamic sector-energy- and a space-city- that are critical for sustainability. Cities and the energy field are now on the verge of dramatic changes. Urban energy systems are capital intensive and have long lives. Immediate change is difficult and innovation is crucial for inefficient patterns to be transformed into more intelligent systems. Strongly entrenched ideas start to vacillate and new investments challenge the inertia of old infrastructures. New concepts, values and technological breakthroughs emerge, linked to policy and market initiatives, public expectations and scientific developments.

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-Morris D, 1982. *Self-reliant Cities. Energy and the Transformation of urban America**.*** Sierra Club Books, San Francisco.

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-Newman P., Beatley T., Boyer H., 2009. ***Resilient Cities: Responding to Peak Oil and Climate Change****,* Island Press*,* 166 pages
ISBN-10: 1597264989
ISBN-13: 978-1597264983

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-Nijkamp P., Capello R., Pepping G., 1999. ***Sustainable Cities and Energy Policies*****,** Springer-Verlag Berlin and Heidelberg GmbH & Co. K, 282 pages
ISBN-10: 3540648054
ISBN-13: 978-3540648055

The aim of this book is to highlight the great potential of decentralized (i.e. local or urban) energy policies in achieving environmentally-benign developments for modern cities. Urban sustainability is placed in the context of the debate on global sustainable development. A wide array of policy initiatives is discussed and evaluated, ranging from market-based energy policies to technological innovation policies for the energy sector. A theoretical framework for technology adoption processes is developed and empirically tested. The main question addressed is: which are the critical success factors for successful urban energy policies? This question is also dealt with in a meta-analytic context by assessing and comparing the performance of energy policies in various European cities, with a particular view to renewable energy.

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-Roaf S., Crichton D., Nicol F., 2004. ***Adapting Buildings And Cities For Climate Change: A 21st Century Survival Guide,*** Architectural Press***,*** 384 pages
ISBN-10: 0750659114
ISBN-13: 978-0750659116

From the author of the bestseller 'Ecohouse' this challenging and exciting text gives you an insight into the real changes that are necessary to give our modern day built environment both 'sustainability' and 'survivability'.
Throughout the book, traditional and modern building types are used to explain the history and impacts of climates past, present and future on buildings; set the scene in terms of the history of building development of where we are now and where we are going in terms of sustainability and survivability of buildings**; develop two main scenarios of future building development with the 'business as usual' model and the 'survival plan' model**, and to make a list of recommendations based on the two scenarios of what actions should be taken by architects, planners and engineers as well as local and national governments, businesses and ordinary people in ensuring the true sustainable nature of the built environment.

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-Zhongguo Gong Chen Yuan, 2005. ***Urbanization, Energy, And Air Pollution In China : The Challenges Ahead***, National Academy Press***,*** 308 pages
ISBN-10: 0309093236
ISBN-13: 978-0309093231

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II. Société post-carbone

-Goodall C., 2007. ***How to Live a Low-carbon Life: The Individual's Guide to Stopping Climate Change,*** Earthscan Ltd***,*** 326 pages
ISBN-10: 1844074269
ISBN-13: 978-1844074266

Individual action is now recognized as one of the keys to tackling climate change - the greatest challenge facing humanity
* Shows how consumers can conduct a personal and household `carbon audit,' take decisive action for lowering their carbon footprint and save money
* User-friendly and comprehensive: includes tables for calculating carbon emissions and monetary costs and savings and methods for making choices for maximum carbon and cost reduction
* Companion website with easy-to-use spreadsheets and up to the minute figures and product information
How to Live a Low Carbon Life provides a comprehensive, one-stop reference guide to calculating individual carbon emissions and it lays out clear plans for how individuals can reduce their emissions. Covering all aspects of modern life from transport to home heating to where our food comes from to the vexing issue of holiday travel, the book provides easy-to-use tables for conducting a personal lifestyle `carbon audit'.
This thorough and wide-ranging handbook provides all the information needed for people and families to understand their impacts on the world's climate. It gives them the information to enable them to adjust lifestyles and live a responsible life. Written in an optimistic tone, it shows how easy it is to take responsibility and reduce our personal carbon emissions.

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-Heinberg R., 2007. ***Peak Everything: Waking Up to the Century of Decline in Earth's Resources****,* Clairview Books*,* 224 pages
ISBN-10: 1905570139
ISBN-13: 978-1905570133

The 20th century saw unprecedented growth in population, food production and energy consumption. As the population shifted from rural areas to urban cities, the human impact on the environment increased dramatically. The 21st century has ushered in an era of decline in a number of crucial areas: global oil, natural gas and coal extraction; minerals and ores, such as copper and platinum; economic growth; yearly grain harvests; fresh water; climate stability; and, population. To adapt to this profoundly different world, we must now begin to make radical changes to our attitudes, behaviours and expectations."Peak Everything" addresses many of the cultural, psychological and practical changes we will need to make as nature rapidly dictates our new limits. This latest book from Richard Heinberg, author of three acclaimed books on Peak Oil, touches on the most important aspects affecting humanity at this momentous time. A combination of wry commentary and sober forecasting on subjects as diverse as farming and industrial design, "Peak Everything" indicates how we might make the transition from the Age of Excess to the Era of Modesty with grace and satisfaction, while preserving the best of our collective achievements. A must-read for individuals, business leaders and policy makers who are serious about effecting real change.

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-Heinberg, R., 2005. ***The Party's Over: Oil, War and the Fate of Industrial Societies***, New Society Publishers, 288 pages
ISBN-10: 0865715297
ISBN-13: 978-0865715295

The world is about to run out of cheap oil and change dramatically. Within the next few years, global production will peak. Thereafter, even if industrial societies begin to switch to alternative energy sources, they will have less net energy each year to do all the work essential to the survival of complex societies. We are entering a new era, as different from the industrial era as the latter was from medieval times.
In *The Party's Over*, Richard Heinberg places this momentous transition in historical context, showing how industrialism arose from the harnessing of fossil fuels, how competition to control access to oil shaped the geopolitics of the twentieth century and how contention for dwindling energy resources in the twenty-first century will lead to resource wars in the Middle East, Central Asia and South America. He describes the likely impacts of oil depletion and all of the energy alternatives. Predicting chaos unless the United States-the world's foremost oil consumer-is willing to join with other countries to implement a global program of resource conservation and sharing, he also recommends a "managed collapse" that might make way for a slower-paced, low-energy, sustainable society in the future.
More readable than other accounts of this issue, with fuller discussion of the context, social implications and

recommendations for personal, community, national and global action, Heinberg's updated book is a riveting wake-up call for human-kind as the oil era winds down, and a critical tool for understanding and influencing current US foreign policy.

-Heinberg R., 2004. ***Powerdown: Options and Actions for a Post-Carbon World,*** New Society, 288 pages
ISBN-10: 0865715106
ISBN-13: 978-0865715103

If the US continues with its current policies, the next decades will be marked by war, economic collapse, and environmental catastrophe. Resource depletion and population pressures are about to catch up with us, and no one is prepared. The political elites, especially in the US, are incapable of dealing with the situation and have in mind a punishing game of "Last One Standing."
The alternative is "Powerdown," a strategy that will require tremendous effort and economic sacrifice in order to reduce per-capita resource usage in wealthy countries, develop alternative energy sources, distribute resources more equitably, and reduce the human population humanely but systematically over time. While civil society organizations push for a mild version of this, the vast majority of the world's people are in the dark, not understanding the challenges ahead, nor the options realistically available.
Powerdown speaks frankly to these dilemmas. Avoiding cynicism and despair, it begins with an overview of the likely impacts of oil and natural gas depletion and then outlines four options for industrial societies during the next decades: -Last One Standing: the path of competition for remaining resources; -Powerdown: the path of cooperation, conservation and sharing; -Waiting for a Magic Elixir: wishful thinking, false hopes, and denial; -Building Lifeboats: the path of community solidarity and preservation.
Finally, the book explores how three important groups within global society-the power elites, the opposition to the elites (the antiwar and antiglobalization movements, et al: the "Other Superpower"), and ordinary people-are likely to respond to these four options. Timely, accessible and eloquent, *Powerdown* is crucial reading for our times.

-de Jager D., Faaij A., Kok M., Vermeulen W., 2002. ***Global Warming and Social Innovation: The Challenge of a Climate-Neutral Society,*** Earthscan, 300 pages
ISBN 9781853839450

Western societies may need to reduce emissions of greenhouse gases by 80 per cent in order to counter the risks of climate change. This book envisions a climate-neutral society - one where the output of greenhouse gases is minimized by social innovations set up in households, by local authorities, through developments in information and communications technologies and dematerialization, and through the shift towards product service systems and emissions trading. The book discusses the possibilities for steering and orchestrating this long term transition towards a climate-friendly society, mapping paths through current dilemmas in climate policy and exploring issues of making this transition.

-McKillop A., 2005. ***The Final Energy Crisis,*** Pluto Press**,** 336 pages
ISBN-10: 0745320929
ISBN-13: 978-0745320922

This book explores the crisis in fossil fuels. Oil, gas and coal are precious resources that define modern life. Without them, mass-produced food and clothing, and international travel and cars, become rare or impossible. Yet our reliance on fossil fuels is responsible for massive environmental damage, and increasing economic and political instability.
Control over oil resources has been a major factor in several wars. The price of oil is also key to world economic stability. Yet our supply of oil is limited. As with other fossil fuels, the more we burn, the more damage we do – the number one cause behind global warming is the increase in carbon dioxide from burning fossil fuels.
The international range of contributors to this book provide a truly global perspective on the dangers inherent in our over-consumption of oil, gas and coal. They explore detailed evidence of the imminent acceleration of fossil fuel depletion and the limits of ‘sustainability’. They outline the political background to the situation, not just among the world’s largest consumers of fossil fuel, the US and China, but also in Europe and the developing world. Considering our future economic survival, they include a detailed examination of France and Australia. Finally, they explore the extreme costs of alternatives such as nuclear power, and outline other possible lifestyles and methods.

-Mobbs P., 2007**.** ***Energy Beyond Oil: Could You Cut Your Energy Use by Sixty Per Cent ?*****,** Matador, 204 pages
ISBN-10: 1905237006
ISBN-13: 978-1905237005

There are three reasons for reading this book. First, it is very easy to read. Mobbs has a way of explaining technically complicated topics clearly without glossing over the essentials. Second, he casts a cold and impartial eye both on the claims and counterclaims about how much fossil fuel resource the world has left, and on the hopes and probable disappointments that lie ahead for the alternative fuels. Third, he brings us relentlessly to face the prospect of fundamental change in the way we live, which cannot continue to depend on ever-growing consumption of energy.

-Mulder H. A. J., Biesiot W., 1998. ***Transition to a Sustainable Society: A Backcasting Approach to Modelling Energy and Ecology,*** Edward Elgar Pub, 320 pages
ISBN-10: 1858987318
ISBN-13: 978-1858987316

The quantity of fossil fuels left on the planet is limited, and their use is subject to further restrictions due to constraints on CO2 emissions. This crisis has brought to the forefront of the political agenda the need for a conversion to a sustainable society. In this compelling book, a backcasting approach based on energy flows is used to evaluate the physical constraints on sustainable development. The starting point for the backcasting approach is the definition of a desired situation at a determined point in the future. This leads to the development of scenarios that connect our present status with the desired future point. This detailed, quantitative approach gives insights into the challenges that lie ahead in order to realise our goal. The book clearly displays large sets of expectations concerning the development of future population size and wealth, technological improvements and resource quantities. These are used to discuss the overall possibility for a transition to a sustainable society and highlight the dilemma between equity and environmental quality. A selection of other energy-scenario studies using different approaches are also discussed and contrasted with the backcasting model. The book concludes with some reflections on the institutional and socio-psychological aspects of a transition to sustainability and recommends a goal-oriented policy to implement this change. Transition to a Sustainable Society will prove essential reading for those with an interest in ecological economics, energy and environmental policy makers, and research planners

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-Murphy P., 2008. ***Plan C: Community Survival Strategies for Peak Oil and Climate Change****,* New Society Publishers, 304 pages
ISBN-10: 0865716072
ISBN-13: 978-0865716070

Concerns over climate change and energy depletion are increasing exponentially. Mainstream solutions still assume a panacea that will cure our climate ills without requiring any serious modification to our way of life. "Plan C" explores the risks inherent in trying to continue our energy-intensive lifestyle. Using dirtier fossil fuels ("Plan A") or switching to renewable energy sources (Plan B) allows people to remain complacent in the face of potential global catastrophe. Dramatic lifestyle change is the only way to begin to create a sustainable, equitable world. The converging crises of Peak Oil, Climate Change and increasing inequity are presented in a clear, concise manner, as are the twin solutions of community (where co-operation replaces competition) and curtailment (deliberately reducing consumption of consumer goods).This book shows how each person's individual choices can dramatically reduce CO2 emissions. It offers specific strategies in the areas of food, transportation and housing. One chapter analyses the decimation of the Cuban economy when the USSR stopped oil exports in 1990, and provides an inspiring vision for a low energy way of living. "Plan C" is an indispensable resource for anyone interested in living a lower-energy, saner, more sustainable lifestyle.

-Praetorius B., Bauknecht D., Cames M., 2008. ***Innovation for Sustainable Electricity Systems: Exploring the Dynamics of Energy Transitions,*** Physica-Verlag Heidelberg***,*** 246 pages
ISBN-10: 379082075X
ISBN-13: 978-3790820751

-Redgwell C., Zillman D., Omorogbe Y., 2008. ***Beyond the Carbon Economy: Energy Law in Transition,*** Oxford University Press, USA**,** 510 pages
ISBN-10: 0199532699
ISBN-13: 978-0199532698

-Smil V., 2005. ***Energy at the Crossroads***. ***Global Perspectives and Uncertainties***, MIT Press, 443 pages
ISBN-10: 0-262-69324-0
ISBN-13: 978-0-262-69324-0

In *Energy at the Crossroads*, Vaclav Smil considers the twenty-first century's crucial question: how to reconcile the modern world's unceasing demand for energy with the absolute necessity to preserve the integrity of the biosphere. With this book, he offers a comprehensive, accessible guide to today's complex energy issues—how to think clearly and logically about what is possible and what is desirable in our energy future.
After a century of unprecedented production growth, technical innovation, and expanded consumption, the world faces a number of critical energy challenges arising from unequal resource distribution, changing demand patterns, and environmental limitations. The fundamental message of *Energy at the Crossroads* is that our dependence on fossil fuels must be reduced not because of any imminent resource shortages but because the widespread burning of oil, coal, and natural gas damages the biosphere and presents increasing economic and security problems as the world relies on more expensive supplies and Middle Eastern crude oil.
Smil begins with an overview of the twentieth century's long-term trends and achievements in energy production. He then discusses energy prices, the real cost of energy, and "energy linkages"—the effect energy issues have on the economy, on quality of life, on the environment, and in wartime. He discusses the pitfalls of forecasting, giving many examples of failed predictions and showing that unexpected events can disprove complex models. And he examines the pros and cons not only of fossil fuels but also of alternative fuels such as hydroenergy, biomass energy, wind power, and solar power. Finally, he considers the future, focusing on what really matters, what works, what is realistic, and which outcomes are most desirable.

-**Smil V.,** 2008. ***Global Catastrophes and Trends. The Next Fifty Years***, MIT Press, 320 pages
ISBN-10: 0-262-19586-0
ISBN-13: 978-0-262-19586-7

Fundamental change occurs most often in one of two ways: as a "fatal discontinuity," a sudden catastrophic event that is potentially world changing, or as a persistent, gradual trend. Global catastrophes include volcanic eruptions, viral pandemics, wars, and large-scale terrorist attacks; trends are demographic, environmental, economic, and political shifts that unfold over time. In this provocative book, scientist Vaclav Smil takes a wide-ranging, interdisciplinary look at the catastrophes and trends the next fifty years may bring. This is not a book of forecasts or scenarios but one that reminds us to pay attention to, and plan for, the consequences of apparently unpredictable events and the ultimate direction of long-term trends.
Smil first looks at rare but cataclysmic events, both natural and human-produced, then at trends of global importance: the transition from fossil fuels to other energy sources; demographic and political shifts in Europe, Japan, Russia, China, the United States, and Islamic nations; the battle for global primacy; and growing economic and social inequality. He also considers environmental change—in some ways an amalgam of sudden discontinuities and gradual change—and assesses the often misunderstood complexities of global warming.
Global Catastrophes and Trends does not come down on the side of either doom-and-gloom scenarios or techno-euphoria. Instead, relying on long-term historical perspectives and a distaste for the rigid compartmentalization of knowledge, Smil argues that understanding change will help us reverse negative trends and minimize the risk of catastrophe.

-Scheer H., 2007. *L'autonomie énergétique. Une nouvelle politique pour les énergies renouvelables*, Arles, Actes Sud.

-Strachan N., Foxon T., Fujino J., 2008. ***Modeling Long-Term Scenarios for Low Carbon Societies,*** Earthscan Publications, 176 pages
ISBN-10: 184407594X
ISBN-13: 978-1844075942

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-Wittmann T., 2008. ***Agent-Based Models Of Energy Investment Decisions,*** Physica-Verlag Heidelberg**,** 113 pages
ISBN-10: 3790820032
ISBN-13: 978-3790820034

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-World Bank, 2007. ***International Trade and Climate Change: Economic, Legal, and Institutional Perspectives,*** World Bank Publications**,** 170 pages
ISBN-10: 0821372254
ISBN-13: 978-0821372258

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Articles, Dossiers, Rapports

ENERGIE

-AIE, *World Energy Outlook 2009 (disponible en novembre 2009)*

What will the credit crunch and economic recession mean for energy markets? Will investment cutbacks lead us towards a supply crunch a few years down the line? How could the transition to a clean global energy system be financed?

These are just three of the questions that *World Energy Outlook 2009* addresses. Incorporating recent developments in energy and environmental policy, this year's *Outlook* draws on the latest data reflecting the impact of the global financial and economic crisis and takes into account ongoing gyrations in energy prices. The resulting analysis presents a full update of energy projections through to 2030, fuel by fuel, and with more country-level detail than ever before.

WEO-2009 puts the spotlight on three special topics:

-Financing energy investment under a post-2012 climate framework: What policy action is needed to increase deployment of new energy technologies? Where are the most cost-effective opportunities for carbon mitigation? This ground-breaking analysis, which zooms in on the crucial period through to 2020, provides a robust quantitative basis for United Nations Framework Convention on Climate Change negotiations in the lead-up to the crucial climate meeting in Copenhagen in December 2009.

-Prospects for global natural gas markets: How hard will the credit crisis and economic recession hit gas demand and investment in gas supply? How will geology and geopolitics affect future gas supplies? Through field-by-field analysis of production trends of the world's key gas fields and a bottom-up analysis of upstream costs and investment, *WEO-2009* takes a hard look at future global gas supply.

-Energy trends in Southeast Asia: In recognition of the growing influence Southeast Asia is having on global energy markets, *WEO-2009* includes an in-depth analysis of this fast-growing region.

-AIE, *Oil Market Report*, 13 mars 2009, 57 pages

Highlights
• Crude oil prices posted steady gains in early March on mounting evidence of increased OPEC compliance with targeted output cuts. Benchmark crudes scaled to two month highs, trading in a $41-45/bbl range, with WTI back above Brent for the first time since late 2008.
• Global oil supply in February is estimated at 83.9 mb/d, down 1.0 mb/d month on month and 3.4 mb/d year on year. OPEC crude supply, at 28.0 mb/d, was down 1.1 mb/d from January. Full compliance with agreed cuts – above the current 80% – would take OPEC output 1.6 mb/d below the 2009 'call', implying a potential draw in OECD stocks.
• Non OPEC supply growth for 2009 is revised down by 380 kb/d to zero, following a reappraisal of ongoing problems at Azerbaijan's ACG fields. Non OPEC supply for 2008 is kept steady at 50.6 mb/d, as fourth quarter upward revisions to UK North Sea production were offset by weaker non OECD output. OPEC NGLs, however, should add 0.3 mb/d in 2009.
• Forecast global oil demand for 2009 is revised down slightly to 84.4 mb/d, 1.5% or 1.2 mb/d year on year, on a reassessment of demand prospects in the FSU, Asia and OECD North America. The oil demand estimate for 2008 remains unchanged at 85.7 mb/d (0.4% or 0.4 mb/d versus 2007).
• OECD industry stocks rose by 9.0 mb in January to 2,712 mb, with European and Pacific product draws partially offsetting North American crude builds. An upward revision to December inventories plus increasing January stocks pushed end January forward demand cover to 58.7 days, 4.6 days higher than a year ago.
• Global crude runs are expected to remain weak through 1Q09, but completion of maintenance at refineries in the Atlantic Basin and start up of new Asian capacity offer the prospect of higher runs during 2009. OECD through put in January collapsed by 2.1 mb/d on a yearly basis, with capacity utilisation at its lowest since 1995.

Source : http://omrpublic.iea.org/omrarchive/13mar09full.pdf

-AIE, 2005. ***Mobilising energy technology***, IEA working parties and expert groups, 88 pages.

No single line of action can promise adequate, secure supplies of affordable energy to fuel future economic growth in a sustainable way. A mix of approaches will be needed. Among them, development and deployment of advanced, cleaner and more efficient energy technologies are fast emerging as important components. They will play a strong role alongside well functioning markets and supply- and demand-side energy policies. International collaborative R&D is a key factor for progress.

The IEA's collaborative structure has some thirty years of experience in bringing countries together to work on a vast range of energy technologies and to help advance the most promising options. Central to its work is a network of IEA Working Parties and Expert or Ad Hoc Groups. They provide the interface for channelling information between some 40 specialised IEA "Implementing Agreement" R&D programmes and government policy makers. They provide platforms for analysis of current energy technology and policy issues. They publish findings and disseminate the latest expertise within each family of technologies. They build links with industry and foster outreach to developing countries.

Source : http://www.iea.org/Textbase/nppdf/free/2005/MobilsingEnergyTech_WEB.pdf

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-AIE, 2005. ***Resources to Reserves. Oil & Gas Technologies for the Energy Markets of the Future,*** 130 pages.

Le monde dispose d'au moins 20 milliards de bep (barils équivalent pétrole) de pétrole et de gaz, dont cinq à dix milliards sont techniquement récupérables aujourd'hui. Si les politiques énergétiques demeurent inchangées, le pétrole et le gaz vont continuer à représenter l'essentiel de l'offre mondiale d'énergie au moins jusqu'à 2030, déclare l'AIE, qui prévoit que la demande mondiale de pétrole augmentera de plus de 50 % entre 2002 et 2030 et que celle de gaz doublera presque sur la même période. Mais d'où viendront ce pétrole et ce gaz ? N'y aura-t-il pas un pic de production ?
Selon l'AIE, en principe, les sols contiennent encore assez d'hydrocarbures, mais les extraire demandera des progrès technologiques majeurs ainsi que des investissements importants, estimés à cinq milliards de dollars US pour les trois prochaines décennies. Même si les pays du Moyen-Orient peuvent répondre à cette demande supplémentaire, il faudra mobiliser les technologies les plus avancées pour améliorer les rendements des gisements déjà connus (une amélioration de 5 % apporterait plus de pétrole que toutes les réserves d'Arabie Saoudite), ouvrir de nouvelles plates-formes *offshore* ou dans les régions les plus reculées (là où plus de la moitié des ressources non connues sont censées se trouver), et exploiter les pétroles non conventionnels (comme les sables bitumineux du Canada, qui contiennent plus de pétrole que les réserves actuelles mondiales).
Ce rapport identifie les défis futurs et fait un tour d'horizon des technologies en gestation dans les domaines de l'exploration, de la production et du transport de l'énergie. Il propose également une estimation des prix du pétrole auxquels les différents types de ressources commencent à devenir rentables économiquement.

Source : http://www.iea.org/textbase/nppdf/free/2005/oil_gas.pdf

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-AIE, 2004. ***The Prospects for CO2 Capture and Storage*****,** Paris, 252 pages.

Dans le scénario de référence de l'AIE basé sur la prolongation des tendances actuelles, les émissions de CO2 seraient, en 2030, supérieures de 63 % par rapport à leur niveau d'aujourd'hui. Même dans le scénario « alternatif », qui analyse l'impact de politiques ciblées pour réduire les émissions, l'augmentation serait encore de 40 %. (Voir BP n°22, décembre 2004).
Par conséquent, pour éviter de telles concentrations dans l'atmosphère, toutes les politiques et toutes les technologies doivent être mobilisées. Parmi celles-ci, la capture et le stockage du CO2 (CSC) sont prometteurs. La capture du CO2 est particulièrement adaptée à la production d'électricité, mais peut aussi intervenir au niveau de la production d'acier, de ciment, de produits chimiques ou du raffinage pétrolier. Le stockage peut se faire dans les aquifères salins de pleine mer, dont la capacité est largement suffisante pour des centaines d'années selon l'AIE, ou encore dans les gisements de pétrole et de gaz épuisés. Mais il reste encore des difficultés à résoudre : le fait que la plupart des lieux de stockage sont loin des lieux d'émissions, le problème de l'étanchéité des lieux de stockage et du risque de fuites de CO2, notamment.
Après un panorama des projets de capture et le stockage du CO2 dans le monde, le livre propose des estimations des réductions de CO2 rendues possibles par les techniques de CSC, dans une série de scénarios technologiques et économiques. Dans un scénario en particulier, le volume d'émissions est stabilisé en 2050 à son niveau de 2000, et cette réduction est pour moitié due au CSC. D'ici 2025, les CSC

seraient généralisés dans les pays industrialisés et d'ici 2050, aux pays en développement (principalement la Chine et l'Inde), grâce à des transferts de technologie.
À l'heure actuelle, le coût total de la capture et du stockage par tonne de CO2 va de 50 à 100 dollars US. Ce coût pourrait, d'après l'AIE, descendre à 25-50 dollars US par tonne. En conclusion, l'étude montre que la mise au point de cette technique permettant une application à grande échelle nécessitera encore une dizaine d'années et que, sans investissements importants en recherche-développement, elle ne jouera probablement pas un rôle majeur avant 2030.

Source : http://www.iea.org/textbase/nppdf/free/2004/prospects.pdf

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-BP, 2008. ***Statistical Review of World Energy* 2008,** 48 pages.

For 57 years, the BP Statistical Review of World Energy has provided high-quality, objective and globally consistent data on world energymarkets. The Review is one of the most widely respected andauthoritative publications in the field of energy economics, used forreference by the media, academia, world governments and energycompanies. A new edition is published every June.

2007 in review
Global energy consumption growth remained robust in 2007, driven by above-average economic growth and despite continued high prices. OECD countries are showing the most significant reaction to continued high energy prices. Divergent price movements, between fuels and regions, affected energy market developments in 2007. Crude oil prices rose for a sixth consecutive year – the longest unbroken period ofgrowth in our data set. Natural gas prices increased modestly except in Europe, where spot prices fell substantially. For a second consecutive year, steam coal prices fell in North America but increased elsewhere.

Energy Developments
World primary energy consumption increased by 2.4% in 2007 – down from 2.7% in 2006, but still the fifth consecutive year of above-average growth. The Asia-Pacific region accounted for two-thirds of global energy consumption growth, rising by an above-average 5% even though consumption inJapan declined by 0.9%. North American consumption rebounded after a weak year in 2006, rising by 1.6% – double the 10-year average. Chinese growth of 7.7% was the weakest since 2002, although still above the10-year average (as was China's economicgrowth). China again accounted for half of global energy consumption growth. Indian consumption grew by 6.8%, the third-largest volumetric increment after China and the US. EU energy consumption declined by 2.2%, with Germany registering the world's largest decline in energy consumption.

Source: :
http://www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/reports_and_publications/statistical_energy_review_2008/STAGING/local_assets/downloads/pdf/statistical_review_of_world_energy_full_review_2008.pdf

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-BP, 2007. ***Statistical Review of World Energy 2007,*** 48 pages.

2006 in review
Growth in global energy consumption slowed in 2006, despite stronger economic growth. Energy prices remained high by historical standards, although price movements in 2006 varied by fuel type and region. Crude oil prices continued to rise. Natural gas and coal prices fell in North America but increased elsewhere.

Energy developments
World primary energy consumption increased by 2.4% in 2006, down from 3.2% in 2005 and just above the 10-year average. Growth slowed for every fuel except nuclear power. The Asia Pacific region once again recorded the most rapid growth, rising by 4.9%, while consumption in North America fell by 0.5%. Chinese energy consumption rose by 8.4% and China continued to account for the majority of global energy consumption growth. The impact of continued high energy prices was seen in slowingconsumption among energy importers and continued strong consumption growth among energy exporters.

Source :
http://www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/reports_and_publications/statistical_energy_review_2007/STAGING/local_assets/downloads/pdf/statistical_review_of_world_energy_full_report_2007.pdf

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-BP, 2006. ***Statistical Review of World Energy 2006,*** 48 pages.

2005 in review
Crude oil, natural gas and coal prices all hit record (nominal) levels in 2005. Combined with a modest reduction in global economic growth, this resulted in a slow down inenergy consumption growth.

Energy developments
World primary energy consumption increased by 2.7% in 2005, below the previous year's strong growth of 4.4% but still above the 10-year average. Growth slowed from 2004 in every region and for every fuel. The strongest increase was again in the Asia Pacific region, which rose by 5.8%, while North America once more recorded the weakest growth, at 0.3%. US consumption fell slightly, while China accounted for more than half of global energy consumption growth.

Source :
http://www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/reports_and_publications/statistical_energy_review_2006/STAGING/local_assets/downloads/pdf/statistical_review_of_world_energy_full_report_2006.pdf

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-Energy Watch Group, 2007, ***Coal: Ressources and Future Production,*** Final-Version 28032007, 47 pages.

When discussing the future availability of fossil energy resources, the conventional wisdom has it that globally there is an abundance of coal which allows for an increasing coal consumption far into the future. This is either regarded as being a good thing enabling the eventual substitution of declining crude oil and natural gas supplies. Or it is seen as a horror scenario leading to catastrophic consequences for the world's climate. But the discussion rarely focuses on the premise: how much coal is there really?
This paper attempts to give a comprehensive view of global coal resources and past and current coal production based on a critical analysis of available statistics. This analysis is then used to provide an outlook on the possible coal production in the coming decades. The result of the analysis is that there is probably much less coal left to be burnt than most people think.

Conclusion and recommendation
Global coal reserve data are of poor quality, but seem to be biased towards the high side. Production profile projections suggest the global peak of coal production to occur around 2025 at 30 percent above current production in the best case. There should be a wide discussion on this subject leading to better data in order to provide a reliable and transparent basis for long term decisions regarding the future structure of our energy system. Also the repercussions for the climate models on global warming are an important issue.

Source : http://www.energywatchgroup.org/fileadmin/global/pdf/EWG_Report_Coal_10-07-2007ms.pdf

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-World Watch Institute, 2001. ***Hydrogen Futures : Toward a Sustainable Energy System,*** World Watch Report n°157, 46 pages

Fueled by concerns about urban air pollution, energy security, and climate change, the notion of a "hydrogen economy" is moving beyond the realm of scientists and engineers and into the lexicon of political and business leaders. Interest in hydrogen, the simplest and most abundant element in the universe, is also rising due to technical advances in fuel cells – the potential successors to batteries in portable electronics, power plants, and the internal combustion engine.

Source : http://www.worldwatch.org/system/files/EWP157.pdf

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-Zhiyan L., Feng S., Xiaobai L., 2008. ***Chinese Perspectives on Energy and Climate Security,*** Chinese Academy of Social Sciences, Urban Development and Environment Research Centre, Interdependencies on Energy and Climate Security project, Chatham House, Londres, 27 pages.

Understanding and implementing energy security policies and strategies in China
Energy security refers to a nation or region enjoying an adequate supply of energy in order to ensure sustainable economic and social development. China is currently undergoing a rapid process of

industrialization and urbanization, with an associated rapid growth in energy demand. There is a widening gap between supply and demand and a large increase in reliance on oil imports. Energy security is now a significant component of China's national security concerns and strategy.

Source : http://www.eu-china-energy-climate.net/documents/Chinese%20Perspectives.pdf

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-Les Cahiers de Global Chance, ***Petit mémento énergétique***, HS n°1, janvier 2003, 52 pages

Les chiffres de l'énergie (cinq fiches) de ce chapitre montrent la très grande complexité d'un sujet sur lequel courent des informations souvent tronquées ou inexactes. Il faut tout d'abord prendre conscience de l'importance des conventions de mesure et d'équivalence énergétiques adoptées qui pèsent très lourd dans l'allure des bilans énergétiques français. C'est ainsi que l'adoption récente par l'Observatoire de l'énergie des conventions internationales d'équivalence entre les différents produits énergétiques a bouleversé la façon d'apprécier les bilans énergétiques nationaux.

La prospective
-Les trois fiches qui ouvrent ce chapitre concernent les projections énergétiques mondiales et nationales à 30 ou 50 ans. Elles mettent en évidence un très fort contraste entre les images du possible et illustrent l'importance majeure des marges de manœuvre que peut engendrer la maîtrise des consommations d'énergie. L'analyse des scénarios, qu'ils soient mondiaux ou nationaux, montre les conséquences positives irremplaçables des politiques d'efficacité énergétique, à la fois sur la raréfaction des ressources et sur l'environnement global (émissions de gaz à effet de serre et déchets nucléaires).
-Deux fiches sont consacrées à de nouvelles technologies, l'hydrogène et les piles à combustible, qui font l'objet depuis quelques mois d'un engouement exagéré, au point d'en paraître parfois suspect. L'analyse présentée tente de remettre à leur juste place ces technologies et leur potentiel dans la panoplie des solutions technologiques émergentes en réponse aux différents problèmes cités plus haut.

La maîtrise de l'énergie et les énergies renouvelables
Conséquence logique des constats précédents, nous avons consacré trois fiches à la maîtrise des consommations d'énergie qui devrait faire l'objet de politiques concrètes et volontaristes alors qu'elle continue à ne faire pratiquement que l'objet de discours convenus. Trois secteurs sont abordés : le résidentiel tertiaire, le secteur des transports, la maîtrise de la consommation de l'électricité. Deux fiches sur les énergies renouvelables (thermique et électricité) complètent ce chapitre.

La production d'électricité nucléaire
Trois fiches sont consacrées à la filière nucléaire.

L'effet de serre
Quatre fiches sont consacrées à cette question.
-La première apporte des éléments de réponse aux arguments avancés par les Etats-Unis et souvent repris pour mettre en cause l'accord de Kyoto.
-La seconde tente d'éclairer le débat souvent manichéen qui s'est engagé sur le thème « l'électricité nucléaire et (plus marginalement) l'électricité renouvelable, une réponse majeure à la lutte contre le réchauffement climatique ». Elle montre en particulier que les apports du nucléaire et de l'hydraulique aux économies d'émissions de CO2 mondiales, bien que non négligeables (respectivement 240 et 270 Mtonnes de carbone) restent marginales (3,8 et 4,3%) et sont donc loin de constituer « la » réponse, comme l'affirment certains, aux problèmes climatiques.
-La fiche combustibles et effet de serre montre la grande diversité des contributions aux émissions de CO2 des différentes filières d'utilisation des combustibles fossiles (en particulier pour les filières de production d'électricité) et met en relief les marges de manoeuvre importantes, en terme d'émissions de CO2, qui peuvent résulter de substitutions judicieuses d'énergies fossiles.
-La dernière fiche analyse plus précisément les émissions de CO2 du système énergétique français et dresse le bilan des évolutions constatées, des scénarios, des politiques proposés et de l'état de leur mise en oeuvre.

Source : http://www.global-chance.org/IMG/pdf/GCnHS1.pdf

-IFP, 2008. ***L'industrie parapétrolière mondiale,*** Etude Annuelle, 85 pages.

L'IFP y analyse l'évolution des investissements dans le secteur de l'exploration-production et du raffinage, plus particulièrement dans les domaines de la géophysique, du forage et de la construction offshore, et livre les premières perspectives pour l'année 2009.
Ce document dresse un panorama du contexte pétrolier international en trois parties distinctes, pour l'année 2007, les trois premiers semestres de 2008 et fournit des éléments de tendance pour l'année 2009.

-Description rapide du contexte pétrolier et de l'environnement économique dans lequel il se développe.

-Evolution des investissements mondiaux dans les activités d'exploration-production (E&P)

-Investissements dans le secteur du raffinage en mettant l'accent sur l'évolution des fondamentaux notamment sur l'équilibre entre capacités de raffinage et demande pétrolière à moyen terme. Cette dernière analyse concerne aussi bien les compagnies pétrolières que parapétrolières.

Source : L'industrie pétrolière et parapétrolière - Contexte international - 2008 (PDF - 790 Ko)

-Mocilnikar A.-T. (ss la dir. de), 2006. ***Charbon propre : mythes ou réalités ?*****,** Paris, Ministère de l'écologie et du développement durable, 117 pages.

Le rapport « *Charbon propre : mythes ou réalités ?* » est le fruit du travail du groupe sur le charbon que le Délégué interministériel au développement durable a mis en place en 2005. Il a regroupé des entreprises françaises, des consultants, des administrations, des organismes de recherche et avec des entités et des ONG internationales.
Ce rapport rappelle l'importance totalement méconnue et sous-estimée en France du charbon, qui est l'énergie qui croît le plus dans le monde actuellement. Cette filière énergétique connaît, en effet, à la fois des hausses de prix plus modérées que ceux du pétrole et du gaz et est basée sur les réserves d'énergie fossile les plus vastes. Mais le charbon est aussi le plus fort émetteur de CO2 à quantité d'énergie donnée. Peut-on résoudre la quadrature du cercle énergie / climat / charbon ?
Le rapport propose quelques simulations simples de l'impact du charbon. Sa principale conclusion est que le recours au charbon ne sera compatible avec la maîtrise de l'effet de serre qu'avec des systèmes de captage et de stockage du CO2, c'est-à-dire des « centrales à charbon vraiment propres ». L'Europe doit en conséquence, en parallèle aux États-Unis, à la Chine, au Canada et à l'Australie, faire l'effort nécessaire de développement technologique. D'après les auteurs du rapport, on sait capturer le CO2, certains pilotes industriels tournent déjà. ıMais il faudrait un cadre réglementaire mondial pour l'imposer aux opérateurs, compte tenu des surcoûts induits.
Des équipes françaises travaillent sur le captage et le stockage du gaz carbonique depuis plus de 10 ans. Elles regroupent des acteurs publics comme l'IFP (Institut français du pétrole), l'ADEME (Agence de l'environnement et de la maîtrise de l'énergie), le BRGM (Bureau de recherches géologiques et minières), Gaz de France, EDF (Electricité de France) et des acteurs privés comme Alstom, Total, Air liquide, Suez, Schlumberger ou les ingénieries. La nouvelle Agence Nationale de la Recherche a déjà lancé deux appels à projets sur ce sujet. Ce rapport fait le point sur les actions entreprises.

Source : http://www.ecologie.gouv.fr/IMG/pdf/Charbonpropre22082006.pdf

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Pics énergétiques

AIE, 2008. ***Response system for oil supply emergencies*****,** Paris, 20 pages.

Emergency response to oil supply disruptions has remained a core mission of the International Energy Agency since its founding in 1974. This information pamphlet explains the decisionmaking process leading to an IEA collective action, the measures available – focusing on stockdraw – and finally, the historical background of major oil supply disruptions and the IEA response to them. It also demonstrates the continuing need for emergency preparedness, including the growing importance of engaging key transition and emerging economies in dialogue about energy security.
The IEA emergency response mechanisms were set up under the 1974 Agreement on an International Energy Program (I.E.P. Agreement). The I.E.P. Agreement requires IEA member countries to hold oil stocks equivalent to at least 90 days of net oil imports and – in the event of a major oil supply disruption – to release stocks, restrain demand, switch to other fuels, increase domestic production or share available oil, if necessary. To supplement the mechanisms defined in the I.E.P. Agreement, the IEA has elaborated flexible arrangements for co-ordinated use of stockdraw, demand restraint and other measures which could be implemented in response to a disruption in oil supplies.
IEA collective response actions are designed to mitigate the negative impacts of sudden oil supply shortages by making additional oil available to the global market through a combination of emergency response measures, which include both increasing supply and reducing demand. Although supply shortages may bring about rising prices, prices are not a trigger for a collective response action, as these can be caused by other factors and the goal of the response action is to offset an actual physical shortage, not react to price movements. Close dialogue and co-operation are maintained with consuming countries that are not member countries of the IEA and collective actions are taken in co-ordination with major producing countries.

Source : http://www.iea.org/textbase/nppdf/free/2008/fs_response_system.pdf

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-Alecklett K., 2007. ***Reserve driven forecasts for oil, gas and coal and limits in carbon dioxide emissions,*** OECD International Transport Forum, 20 pages.

The increase of carbon dioxide (CO2) in the atmosphere is coursed by an increasing use of fossil fuels; natural gas, oil and coal. This have so far resulted in an increase of the global surface temperature in the order of one degree.

In the year 2000 IPCC, Intergovernmental Panel on Climate Change, released 40 emission scenarios that can be seen as images of the future, or alternative futures. They are neither prediction, nor forecasts and actual reserves have not been a limited factor, just the fossil energy resource base.

This paper is based on realistic reserve assessments, and CO2 emissions from resources that cannot be transformed into reserves are not allowed. First we can conclude that CO2 emissions from burning oil and gas are lower what all the IPCC scenarios predict, and emissions from coal is much lower than the majority of the scenarios.

IPCC emission scenarios for the time period of 2020 to 2100 should in the future not be used for climate change predictions. It is time to use realistic scenarios.

Source: OECD International Transport Forum

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-Berge K., 2008. ***An Oil Crisis is Probably Imminent***, 42 pages

Several studies and much data available on the internet indicate that there is a strong likelihood that the world is about to enter an era when oil becomes scarce and oil prices increase significantly. Well over half of all oil produced in the world is used as transportation fuel. Oil is the primary source of transportation fuel for almost all forms of transportation – cars, trucks, trains, ships and aircraft. It is also essential for a wide range of petrochemical products that we use every day. An oil crisis will have a profound effect on the developed and developing world economies. Not only will transportation fuel costs increase dramatically, but the cost of all goods and services dependent on transportation will rise dramatically. This problem is further complicated in that development and exploitation of potential alternative fuels should not exacerbate pollution and the

global warming problem.

This report identifies and summarizes several previous studies and government reports. It also presents and discusses available data and the results of the author's additional analysis of the available data. Based on this data and analysis the author believes that this problem is real and that the era of very expensive oil may have already started.

This report also identifies and discusses potential alternative transportation fuel sources. The U.S. Government and private industry apparently recognized, starting in the Reagan administration, that an oil crisis will occur in the foreseeable future and have provided research funding for many alternative fuels. While some of the research is proving fruitful, it appears that there are no near-term alternatives to oil-based fuels that can immediately step in and alleviate the problem. Neither the Government nor the press has publicized this as a major issue.

The objective of this report is to alert people to the probability of an imminent oil crisis. This will allow them to make their own decisions regarding the likelihood of such a crisis and to plan for how best to cope with the issue.

Source: An Oil Crisis is Probably Imminent.pdf

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Campbell C. J., 2002. ***Peak Oil: an Outlook on Crude Oil Depletion***, Page internet.

In summary, these are the main points that have to be grasped:
•Conventional oil - and that will be defined - provides most of the oil produced today, and is responsible for about 95% all oil that has been produced so far.
•It will continue to dominate supply for a long time to come. It is what matters most.
•Its discovery peaked in the 1960s. We now find one barrel for every four we consume.
•Middle East share of production is set to rise. The rest of the world peaked in 1997, and is therefore in terminal decline.
•Non-conventional oil delays peak only a few years, but will ameliorate the subsequent decline.
•Gas, which is less depleted than oil, will likely peak around 2020.
•Capacity limits were breached late in 2000, causing prices to soar leading to world recession.
•The recession may be permanent because any recovery would lead to new oil demand until the limits were again breached which would lead to new price shocks re-imposing recession in a vicious circle.
•World peak may prove to have been passed in 2000, if demand is curtailed by recession.
•Prices may remain weak in such circumstances but since demand is not infinitely elastic they must again rise from supply constraints when essential needs are affected.

Source : http://greatchange.org/ov-campbell,outlook.html

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-Hallock J. L.Jr.,Tharakan P. J., Hall C. A. S, Jefferson M., Wua W., 2004. ***Forecasting the limits to the availability and diversity of global conventional oil supply***, Elsevier, 24 pages.

Due to the critical importance of oil to modern economic activity, and oil's non-renewable nature, it is extremely important to try to estimate possible trajectories of future oil production while accounting for uncertainties in resource estimates and demand growth, and other factors that might limit production. In this study, we develop several alternate future scenarios for conventional oil supply, given the current range of the estimates of resource availability and of future demand, and assuming that production will continue to increase unconstrained by political or economic factors such as deliberate withholdings or prolonged global recession.
Our results predict that global production of conventional oil will almost certainly begin an irreversible decline somewhere between 2004 and 2037, at 22 to 42 billion barrels per year, depending upon how much oil is available from the earth's crust and the growth rate in its use. In addition, we found that the increasing domestic use of conventional oil in oil-producing countries is very likely to eliminate over time the ability of these countries to export oil to net-consumer countries, so that the number of net-exporting countries will be reduced from 35 today to between 12 and 28 by 2030, and fewer subsequently. The geopolitical and economic implications of these trends are likely to be pronounced if reliance on cheap oil is not reduced prior to the peak.

Source : http://www.odac-info.org/sites/odac.postcarbon.org/files/pdf/ForecastingTheLimits.pdf

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-Hirsch R. L., 2007. ***Peaking of World Oil Production: Recent Forecasts***, National Energy Technology Laboratory, 21 pages.

The purpose of this report is to summarize forecasts for the peaking of world oil production with emphasis on those forecasts that have been publicly noted since early 2005, when our report on peak oil mitigation was released. 3 In addition, we revisit and update the forecasts in our earlier report. Our focus has been on people and organizations that have special oil industry expertise and/or significant influence, recognizing that we may have overlooked some that are worthy of mention.
The organization of this report is as follows: Section II provides a brief description of peak oil, including factors that make it's forecasting so difficult. Section III provides a list of notable recent statements relating to the end of the era of easy and/or cheap oil. Section IV provides tables of important recent peak oil forecasts. Section V revisits the peak oil forecasts noted in our 2005 study on peak oil mitigation 4 and provides some updates. Section VI describes recent IEA views on world oil production investment, and Section VII provides some general commentary and concluding remarks.

Source:
http://www.odac-info.org/sites/odac.postcarbon.org/files/pdf/Hirsch-Recent%20Forecasts.pdf

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-Hirsch R. L., 2007**. *Peaking of World Oil Production: Recent Forecasts*,** US Department Of Energy, 21 pages.

Because oil is a depleting, finite natural resource, world conventional oil production will reach a maximum, called "the peak," after which production will decline. Using differing methodologies and information of widely varying quality, experts and organizations have attempted to forecast the likely year of conventional oil production peaking. Their range of estimates extends from late last year to an apparent denial that it will ever happen. Almost all forecasts are based on differing, often dramatically differing geological assumptions. Explicit account of investment rates in new and expanded production has been relatively rare.

Because of the large uncertainties, it is difficult to define an overriding geological basis for accepting or rejecting any of the forecasts. However, the IEA recently warned that worldwide investment in expanded oil production has been considerably less than needed to continue world oil production that is adequate to meet expected world demand. Thus, geological limits may be yielding to investment limitations.

As noted in previous literature, peak oil presents the world with a risk management problem of tremendous complexity and enormity. Prudent risk minimization requires the implementation of mitigation measures roughly 20 years before peaking to avoid a very damaging world liquid fuels shortfall. Since it is uncertain when peaking will occur or whether it will be due to geological or investment limitations, the challenge is indeed vexing.

Source: Global Oilwatch

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-Hirsch R. L., Bezdek R., Wendling R., 2005. ***Peaking of Worl Oil Production : Impacts, Mitigation and Risk Managment,*** 91 pages.

The purpose of this analysis was to identify the critical issues surrounding the occurrence and mitigation of world oil production peaking. We simplified many of the complexities in an effort to provide a transparent analysis. Nevertheless, our study is neither simple nor brief. We recognize that when oil prices escalate dramatically, there will be demand and economic impacts that will alter our simplified assumptions. Consideration of those feedbacks will be a daunting task but one that should be undertaken.
Our study required that we make a number of assumptions and estimates. We well recognize that in-depth analyses may yield different numbers. Nevertheless, this analysis clearly demonstrates that the key to mitigation of world oil production peaking will be the construction a large number of substitute fuel production facilities, coupled to significant increases in transportation fuel efficiency. The time required to mitigate world oil production peaking is measured on a decade time-scale. Related production facility size is large and capital intensive. How and when governments decide to address these challenges is yet to be determined.
Our focus on existing commercial and near-commercial mitigation technologies illustrates that a number of technologies are currently ready for immediate and extensive implementation. Our analysis was not meant to be limiting. We believe that future research will provide additional mitigation options, some possibly superior to those we considered. Indeed, it would be appropriate to greatly accelerate public and private oil peaking

mitigation research. However, the reader must recognize that doing the research required to bring new technologies to commercial readiness takes time under the best of circumstances. Thereafter, more than a decade of intense implementation will be required for world scale impact, because of the inherently large scale of world oil consumption.
In summary, the problem of the peaking of world conventional oil production is unlike any yet faced by modern industrial society. The challenges and uncertainties need to be much better understood. Technologies exist to mitigate the problem. Timely, aggressive risk management will be essential.

Source : http://www.netl.doe.gov/publications/others/pdf/Oil_Peaking_NETL.pdf

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-Illum K., 2004. ***Oil-based Technology and Economy - Prospects for the Future*****,** The Danish Board of Technology, 112 pages.

A short introduction to basic issues and a review of oil depletion projections derived from dif ferent theories and methods. The evidence presented in this review shows that forecasts made by governmental and international institutions differ markedly from the results of analyses made by individual, independent researchers and some analysts representing the oil industry. The oil industry's analysts point to ever greater costs of matching growing demand with supply from an aging resource base.
Depending mainly on developments in the Middle East and the development of the world economy in the coming years, production may peak within one or two decades. It is a question of geology, technology, economy, and the policies conducted by various nations. The trouble is that no realistic technological, economic and political strategies for the warding off of the impacts of a decline in conventional oil supply are in sight.

Source : http://www.tekno.dk/pdf/projekter/p04_Oil-based_Technology_and_Economy.pdf

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-Koppelaar R. H. E. M., 2005. ***World Oil Production and Peaking Outlook*****,** Peak Oil Netherlands Foudation, 77 pages.

Source : http://www.odac-info.org/sites/odac.postcarbon.org/files/pdf/ponlreport.pdf

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-McKillop A., 2008. ***Global Energy Transition Plan,*** Paper presented at the ASPO 7 Conference, 12 pages.

Despite there being no 'supply side solutions' able to replace or substitute current rates of world oil and gas demand, and cover coming physical supply shortages, near-term for oil and probable by 2010-11 for Eurasian pipeline gas, this fact is apparently contradicted by oil market operators. A myriad of players in the paper oil market, from the now mostly bankrupt or part nationalized big private banks eg. Lehman Bros, Goldman Sachs, Merrill Lynch, to the smaller players notably including the hedge funds, can each day 'talk down' and 'talk up' oil prices. Apart from providing large trading profits on unstable, volatile prices, and the values of related and derived assets, such as CDOs (commodity linked debt instruments) this market-based control of about 51 mln barrels/day (Mbd) of world traded oil supply is perceived as reassuring by the media and public opinion. The key slogan is: « if its traded it has to exist ». Anchoring this childish belief in the minds of consumers is very important to those who have no plan, model, programme or solution for the coming global reduction in oil and natural gas supplies, after their respective peak supply levels are attained...The presentation is the powerpoint presentation that were displayed during the conference.

Source : Global Energy Transition Plan.pdf
Global Energy Transition Presentation.pdf.pdf

-Robelius F., 2007. ***Giant Oil Fields - The Highway to Oil: Giant Oil Fields and their Importance for Future Oil Production***, Doctoral thesis from Uppsala University, 168 pages.

Since the 1950s, oil has been the dominant source of energy in the world. The cheap supply of oil has been the engine for economic growth in the western world. Since future oil demand is expected to increase, the question to what extent future production will be available is important.

The belief in a soon peak production of oil is fueled by increasing oil prices. However, the reliability of the oil price as a single parameter can be questioned, as earlier times of high prices have occurred without having anything to do with a lack of oil. Instead, giant oil fields, the largest oil fields in the world, can be used as a parameter.

A giant oil field contains at least 500 million barrels of recoverable oil. Only 507, or 1 % of the total number of fields, are giants. Their contribution is striking: over 60 % of the 2005 production and about 65 % of the global ultimate recoverable reserve (URR).

However, giant fields are something of the past since a majority of the largest giant fields are over 50 years old and the discovery trend of less giant fields with smaller volumes is clear. A large number of the largest giant fields are found in the countries surrounding the Persian Gulf.

The domination of giant fields in global oil production confirms a concept where they govern future production. A model, based on past annual production and URR, has been developed to forecast future production from giant fields. The results, in combination with forecasts on new field developments, heavy oil and oil sand, are used to predict future oil production.

In all scenarios, peak oil occurs at about the same time as the giant field peak. The worst-case scenario sees a peak in 2008 and the best-case scenario, following a 1.4 % demand growth, peaks in 2018.

Source: Uppsala University

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-Sivertsson A., 2004. ***Study of World Oil Resources with a Comparison to IPCC Emissions Scenarios,*** Undergraduate thesis, Uppsala University, 85 pages.

Our society today is very dependent on oil and gas, almost 65% of the total primary energy consumption in the world is produced from oil and gas. Due to the vast amounts of oil consumed every year, discussions occur regarding whether we will, or will not, run out of oil in the future. Another topic of discussion is the amounts of CO2 emissions from the burning of fossil fuels. The purpose of this M.Sc. thesis work was, firstly, to upgrade a substantial database on world oil and gas resources, including annual discovery and production. An estimate is also made about how much more oil and gas that will be discovered and produced. Secondly, the oil and gas production is compared to the production predicted in IPCC's 40 emissions scenarios. The result from the updated database shows that the ultimate amount of crude oil to be discovered in the world is 1900 Gigabarrels (Gb). Including the year 2002, 1713 Gb is already discovered, which leaves 187 Gb to be discovered in the future. Furthermore, 891 Gb of crude oil had already been produced at the end of 2002, which leaves 822 Gb to be produced in the future.
The result from the comparison between the updated database and IPCC's oil production numbers in their 40 emissions scenarios shows big anomalies. The whole range of IPCC's 40 scenarios on primary energy production from oil and gas between 1990 and 2100 is higher than what the updated database shows as possible. In most of IPCC's 40 scenarios the oil and gas consumption between 1990 and 2100 is more than twice as large as what the updated database shows possible.
Note that the purpose of this M.Sc. project work is to quantify the resource base used in the IPCC emissions scenarios, it does not evaluate whether climate change is, or will be, a problem.

Source: Uppsala University

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-Tekin J., Hagman J., 2008***. Oil Dependencies and Peak Oil's - Effects on Oil Consumption - A case study of six countries,*** Undergraduate thesis C-level 10 p. (IHH, Economics), Jönköping University, Jönköping International Business School***,*** 41 pages

During the year of 2007, the world has experienced historically high oil prices both in nominal and in real terms, which has reopened discussions about energy sustainability. We therefore found it interesting to research oil dependencies and elasticities for Brazil, China, Norway, South Korea, Sweden and USA; and their possible oil consumption response to a Peak Oil phenomenon. Peak Oil in this thesis, implies that oil production will reach its climax and decline thereafter. To help draw conclusions, appropriate statistical analysis on macroeconomic variables was used as well as the modified Nerlove's partial adjustment equation to calculate price and income elasticities both in the short and long-run. Regression results have shown that short-run price elasticities were low in all countries; in addition income elasticities were also inelastic but more elastic in relation to oil price elasticities. This indicates that oil consumption is more sensitive to changes in income than to changes in oil price. It was concluded that oil dependencies among nations differ and the trend is that developing countries are increasing their oil dependency while developed

countries tend to decrease their oil dependency over time. Peak Oil will lead to higher oil prices, which in the short-run will change developing countries oil consumption to a greater extent than developed countries, but in the long-run their response are more similar. It was also noticed, that when GDP decreases in net-oil-importing countries, oil consumption will decrease even further. The opposite could be true for net-oil-exporting countries like Norway and Brazil.

Source : http://www.publ.hj.se/diva/abstract.xsql?dbid=1057

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-UK Industry Taskforce on Peak Oil and Energy Security, 2008. ***The Oil Crunch***, 44 pages.

The main conclusions of the Taskforce are:
1. The effects of peak oil will be felt in the next five years - during the next term of government
• High oil prices combined with the credit crunch had a profound effect on the UK economy this year. The UK needs to plan for the impact of this scenario in the longer term.
• In the absence of strong proactive action the Taskforce anticipate oil prices much higher than the existing record of $147 by 2013.
2. The risks to UK society from peak oil are far greater than those that tend to occupy the Government's risk-thinking, including terrorism
• As easily and cheaply available oil supplies fall off, high oil prices will become a long-term trend having profound direct and indirect economic impacts:
• Increased oil-based input costs for manufacturing and agriculture
• Increased transport costs throughout the supply chain
• Wider macro-economic shocks via higher inflation, balance of payments deficit and reduction of consumer demand.
3. The UK Government needs to re-prioritise peak oil - as the impacts are more likely to arrive first – before climate change
• Currently the Government places climate change as the first priority for policymaking, followed by energy security, with peak oil in last place.
• In contrast, the Taskforce analysis is that peak oil is more of an immediate threat to the economy and people's lives than climate change, grave as that threat is too. A rapidly falling supply of oil is likely to hit us before the worst impacts of the greenhouse effect. The Government needs urgently to reflect this threat in their analysis and planning.

At this critical turning point the Taskforce now urgently calls on the Government to:
1. Prioritise the peak oil threat and develop a strategy to address it
• Ed Miliband's new department needs to develop a national energy plan that acknowledges the imminent threat of peak oil and addresses the entire energy sector.
2. Dramatically and rapidly increase investment in clean energy and renewables
• Policies in the UK Renewable Energy Strategy must go well beyond the EU targets for renewable energy (currently 20% of the energy mix by 2020).
3. Develop and implement a long term sustainable transport policy, with renewable energy sources at its heart
• Increase transport fuelled by sustainable bio-liquids and electricity and escalate measures to reduce the amount of fossil-fuel-based road transport.

Source: Peak Oil Task Force

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-United States Government Accountability Office, 2007. ***Crude Oil - Uncertainty about Future Oil Supply Makes It Important to Develop a Strategy for Addressing a Peak and Decline in Oil Production,*** 82 pages

Source : http://www.gao.gov/new.items/d07283.pdf

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-Zittel W., Schindler J., 2008. ***Crude Oil – The supply Outlook,*** Ludwig-Bölkow-Systemtechnik GmbH, Energy Watch Group, 102 pages.

The main purpose of this paper is to project the future availability of crude oil up to 2030. Since crude oil is the most important energy carrier at a global scale and since all kinds of transport rely heavily on oil, the future availability of crude oil is of paramount interest. At present, widely diverging projections exist in parallel which would require completely different actions by politics, business and individuals.

The scope of these projections is similar to that of the World Energy Outlook by the International Energy Agency (IEA). However, no assumptions or projections regarding the oil price are made. In this paper a scenario for the possible global oil supply is derived by aggregating projections for ten world regions. In order to facilitate a comparison, the definition of the world regions follow the definition used by the International Energy Agency (IEA).
However, the scenario results presented in this paper are very different to the scenarios presented by the IEA in their periodic editions of the World Energy Outlook (WEO) where continuing growth of oil supply and as a consequence a continuation of business as usual for decades to come is deemed possible.

Source :
http://www.energywatchgroup.org/fileadmin/global/pdf/2008-02_EWG_Oil_Report_updated.pdf

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-Zittel W., Schindler J., 2007. ***Coal: Resources and Future Production*****,** 47 pages.

When discussing the future availability of fossil energy resources, the conventional wisdom has it that globally there is an abundance of coal which allows for an increasing coal consumption far into the future. This is either regarded as being a good thing enabling the eventual substitution of declining crude oil and natural gas supplies. Or it is seen as a horror scenario leading to catastrophic consequences for the world's climate. But the discussion rarely focuses on the premise: how much coal is there really?
This paper attempts to give a comprehensive view of global coal resources and past and current coal production based on a critical analysis of available statistics. This analysis is then used to provide an outlook on the possible coal production in the coming decades. The result of the analysis is that there is probably much less coal left to be burnt than most people think.

Source: EWG-Coalreport_10_07_2007.pdf

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-Ganser D., Reinhardt E., 2008. ***Pénurie de pétrole et mobilité en Suisse,*** SATW : Académie Suisse des Sciences Techniques, 24 pages.

La production mondiale de pétrole dépassera bientôt son maximum et diminuera ensuite irrévocablement. La majorité des pays produisant du pétrole en quantités considérables enregistre déjà aujourd'hui un recul de la production. Peu de pays sont encore en mesure de satisfaire une demande croissante. La Suisse dépend énormément du pétrole. C'est pourquoi elle devrait se préparer sans plus attendre à de possibles ruptures d'approvisionnement. Le secteur des carburants est particulièrement concerné. L'essence et le diesel resteront ces prochaines années les principaux carburants. Il convient donc de prévoir une flotte de véhicules peu gourmands en énergie. En outre, des changements structurels de la consommation actuelle destinée à la mobilité engendreraient des économies considérables. La diminution de la dépendance au pétrole se fera au prix de prescriptions plus strictes et d'instruments d'économie de marché.

Source : http://www.satw.ch/publikationen/schriften/Peakoil_FR.pdf

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Articles sur les pics énergétiques

-Campbell C., Laherrère J., 1998-03-01, ***The End of Cheap Oil***, Scientific American, 6 pages.

Global production of conventional oil will begin to decline sooner than most people think, probably within 10 years.

Source: http://dieoff.com/page140.pdf

-Energy Committee at the Royal Swedish Academy of Sciences, 2005. ***Statements on Oil***, 4 pages

Source: http://www.kva.se/KVA_Root/publications/committees/energy_statements1.pdf

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-Laherrere J., Wingert J.-L., 2008. ***Forecast of liquids production assuming strong economic constraints*****,** ASPO France, 21 pages.

Source : http://www.aspo-spain.org/aspo7/presentations/Laherrere_Wingert-Liquids-ASPO7.pdf

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-Laherrere J., 2003. ***Hydrocarbons Resources, Forecast of oil and gas supply to 2050,*** Petrotech 2003 New Delhi, 11 pages.

Source : http://www.hubbertpeak.com/LaHerrere/Petrotech090103.pdf

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Laherrere J., 2000. ***Oceanic Hydrates: more questions than answers*****,** for Energy Exploration and Exploitation date May 3, 2000.

From an oil industry standpoint, methane hydrate is known as a major problem because it plugs casing and pipelines. From a media standpoint, hydrates provide an almost inexhaustible supply of articles concerning greenhouse effects, landslides, global warming and mysterious events such as the loss of aircraft in the "Bermuda Triangle". From a scientific standpoint, they provide much scope for academic research projects.
Oceanic hydrates have been recovered in some of the thousands of ODP/Joides boreholes, from which a total of over 250 km of core have been taken. Unfortunately, hydrates dissociate when brought on deck, and few samples were preserved for further analysis. Most of the oceanic hydrates are reported to be of biogenic origin, except where they overlie petroleum reservoirs, as in the Caspian Sea and Gulf of Mexico. The hydrates in the cores are found mostly as dispersed grains or thin laminae. Massive pieces of hydrate, greater than 10cm thick, have been found only at three sites. Downhole logs are unreliable indicators of hydrates due to cave-ins, and in many instances the inferred presence of hydrates depends on indirect evidence, such as seismic reflectors (BSR) or chlorinity changes in pore waters.
Prior to 1998, the resources of hydrates were often declared to be much greater than all known fossil fuels (coal, oil and natural gas). Ginsburg (1998) disputed such claims on the grounds that the hydrates are not continuously distributed vertically or horizontally. More recently, the USGS (Course 14, AAPG 2000) has drastically reduced its past estimates to a level where it is now claimed that hydrate accumulations may only rival the known reserves of conventional gas. These dispersed hydrate deposits may be better compared with dispersed oil and gas in petroleum systems, which are very much larger than the amounts contained in commercial reservoirs.
Methane hydrates are less dense than water when on the seafloor down to a certain depth, which is still unknown (2650 m for CO_2 hydrate). So, extrusions of hydrate tend to float upwards, disappearing into the seawater. Log measurements in sediments report hydrates being denser than water, but direct measurements are lacking, and it would seem that such sediments are also subject to buoyancy pressure. Surficial pockmarks and mud volcanoes arise from gas expelled from overpressured, underconsolidated sediments — with or without hydrates being present.
Progress in understanding oceanic hydrates has not advanced much over the last twenty years because of the poor quality of measurements in soft sediments (cores, samples and logs), and because of the lack of calibration of seismic against a known oceanic hydrate system.
The chance of a viable production method being developed is slim because the oceanic hydrates are dispersed and occur in erratic patches. Only national oil companies in Japan and India are actively exploring for them.
Future progress may come from the deepwater exploration being undertaken by the oil industry using better

tools, but oceanic hydrates seem to be similar in some respects to metallic nodules or gold in seawater–too dispersed to ever prove economic in most places. It is well said that they are a fuel for the future and likely to remain so.

Source : http://dieoff.org/page225.htm

-The Economist, 2008-08-10. ***The only way is down.***

The high priest of “peak oil” thinks world oil output can now only decline. For a man who believes that the world as we know it is coming to an end, as least as far as energy is concerned, Matthew Simmons is remarkably cheerful. He magnanimously excuses The Economist’s poor record of predicting the price of oil: our suggestion in 1999 that oil would remain dirt cheap was conventional wisdom at the time, he says soothingly. He also shrugs off our more recent scepticism about his belief that the world’s production of oil has peaked: he, too, hopes that “peak oil” proves to be a myth, he says. But over a 40-year career in investment banking, Mr Simmons adds, he has learnt never to rely on wishful thinking. Most of the world’s oil analysts, he believes, are far too optimistic about how long existing fields will last, the prospects for new discoveries, technology’s ability to unlock new sources and to extend the life of existing ones, and so on. He prefers to rely on data rather than daydreams. And according to the American government’s own numbers, the world’s oil output has been more-or-less flat since 2005.

Source: The Economist online

Energies Renouvelables

-Bringezu S., Ramesohl S., Arnold K., Fischedck M., Geibler v. J., Liedtke C., Schütz H., 2007. ***Towards a sustainable biomass strategy.*** Discussion Paper of the Wuppertal Institute, 50 pages.

The paper reviews the current knowledge on the use of biomass for non-food purposes, critically discusses its environmental sustainability implications, and describes the needs for further research, thus enabling a more balanced policy approach. The lifecycle wide impacts of the use of biomass for energy and material purposes derived from either direct crop harvest or residuals indicate that biomass based substitutes have a different, not always superior environmental performance than comparable fossil based products. Cascading use, i. e. when biomass is used for material products first and the energy content is recovered from the end-of-life products, tends to provide a higher environmental benefit than primary use as fuel. Due to limited global land resources, non-food biomass may only susbstitute for a certain share of non-renewables. If the demand for non-food biomass, especially fuel crops and its derivates, continues to grow this will inevitably lead to an expansion of global arable land at the expense of natural ecosystems such as savannas and tropical rain forests. Whereas the current aspirations and incentives to increase the use of non-food biomass are intended to counteract climate change and environmental degradation, they are thus bound to a high risk of problem shifting and may even lead to a global deterioration of the environment. Although the “balaced approach” of the European Union’s biomass strategy may be deemed a good principle, the concrete targets and implementation measures in the Union and countries like Germany should be revisited. Likewise, countries like Brazil and Indonesia may revisit their strategies to use their natural resources for export or domestic purposes. Further research is needed to optimize the use of biomass within and between regions.

Source : http://www.wupperinst.org/en/publications/entwd/uploads/tx_wibeitrag/WP163.pdf

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-DTI, DfT, DEFRA, 2007. ***UK Biomass Strategy,*** DEFRA, 49 pages.

The Government’s strategy for biomass is intended to:
• realise a major expansion in the supply and use of biomass in the UK
• facilitate the development of a competitive and sustainable market and supply chain
• promote innovation and low-carbon technology development so biomass can deliver relatively higher energy yields
• contribute to overall environmental benefits and the health of ecosystems through the achievement of multiple benefits from land use
• facilitate a shift towards a bio-economy through sustainable growth and development of biomass use for fuels and renewable materials
• maximise the potential of biomass to contribute to the delivery of our climate change and energy policy goals: to reduce CO2 emissions, and achieve a secure, competitive and affordable supply of fuel.

Source :
http://www.defra.gov.uk/Environment/climatechange/uk/energy/renewablefuel/pdf/ukbiomassstrategy-0507.pdf

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-European Renewable Energy Council, 2008. ***Feuille de route des énergies renouvelables 20% pour 2020,*** 24 pages.

Cette publication donne un aperçu des contributions possibles des différents secteurs des énergies renouvelables en vue de l’atteinte de l'objectif de 20 %. Elle présente également la situation des secteurs industriels respectifs ainsi que les feuilles de route technologiques correspondantes jusqu'en 2020.

Source :
http://www.erec.org/fileadmin/erec_docs/Documents/Publications/Feuille_de_route_des_energies_renouvelables_.pdf

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-European Renewable Energy Council, *Renewable energy scenario to 2040, Half of the global energy supply from renewables in 2040,* 16 pages.

Source : http://www.erec.org/fileadmin/erec_docs/Documents/Publications/EREC_Scenario_2040.pdf

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-FOEI (Friends of the Earth International), 2008. ***Fuelling Destruction in Latin America: The Real Price of the Drive for Agrofuels*****,** Bruxelles, 2008, 48 pages.

L'objectif affiché de ce rapport est de présenter les impacts négatifs du développement des biocarburants en Amérique latine. Il s'intéresse notamment à leurs conséquences environnementales, sociales et politiques, du point de vue de l'organisation Friends of the Earth. Le rapport étant ouvertement militant, très engagé contre la mondialisation libérale, il est nécessaire de lire entre les lignes et de nuancer la plupart des informations proposées. Cependant, cette analyse propose aussi des constats intéressants pour mieux comprendre les enjeux sociaux, économiques et politiques de l'industrie des biocarburants en Amérique latine.
Le rapport propose une étude des conséquences environnementales de la production de biocarburants. L'exode des paysans (expulsés ou ayant vendu leurs terres) a pour conséquence l'extension des exploitations agricoles au détriment de terres jusqu'alors réservées à d'autres usages — les paysans tentant de reprendre leur activité ailleurs —, ce qui se traduit par une déforestation illégale et une perte de biodiversité. Autrement dit, l'expansion de la monoculture (canne à sucre, palme africaine, soja, selon les pays), encouragée par les incitations gouvernementales, peut contribuer, en l'absence de régulations fortes, à l'extension sauvage des zones agricoles et à une perte de biodiversité, dans la mesure où les paysans ayant laissé leurs terres aux grands propriétaires partent en coloniser de nouvelles.
Le rapport dénonce une pollution des sols et des eaux due à l'utilisation abusive de pesticides, ainsi que les dangers potentiels de la modification génétique systématique qui est appliquée à ces cultures pour en améliorer la productivité. Enfin, le problème de la hausse mondiale des prix des céréales, qui affecte surtout les populations les plus pauvres, est présenté comme une conséquence des politiques visant le développement des biocarburants.

Source : www.foeeurope.org/agrofuels/fuellingdestruction.html

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-Peter S., Lehmann H., 2008. ***Renewable Energy Outlook 2030, Global Renewable Energy Scenarios****,* Ludwig-Boelkow-Foundation, Energy Watch Group, 155 pages.

The objective of this study is to present an alternative and - from our point of view – more realistic view of the chances of the future uses of renewable energies in the global energy supply. The scenarios in this study are based on the analysis of the development and market penetration of renewable energy technologies in different regions in the last few decades. The scenarios address the question of how fast renewable technologies might be implemented on a worldwide scale and project the costs this would incur. Many factors, such as technology costs and costreduction ratios, investments and varying economic conditions in the world's regions, available potentials, and characteristics of growth have been incorporated in order to fulfil this task.

The scenarios describe only two possible developments among a range of prospects, but they represent realistic possibilities that give reason for optimism. The results of both scenarios show that – until 2030 – renewable capacities can be extended by a far greater amount and that it is actually much cheaper than most scientist and laypeople think. The scenarios do explicitly not describe a maximum possible development from the technological perspective but show that much can be achieved with even moderate investments. The scenarios do not pay attention to the further development of Hydropower, except for incorporating the extensions that are planned actually, due to the fact that reliable data about sustainable Hydropower potentials were not available.

Although the scenarios demonstrate how renewable shares in energy supply can be increased significantly, they should also turn our attention to energy demand and its future development. In this study, we have referred strictly to the energy demand figures given in the IEA's World Energy Outlook 2006 "Alternative Policy Scenario". As a result, even in the "High Variant Scenario", the contribution of non-renewable sources to final energy supply in 2030 is almost as high as the total final energy demand was in 2005. This demonstrates impressively that we will also have to tackle energy consumption with the same level of effort we spend on the supply side. It might be questioned whether the IEA's demand projections are encouraging enough to deliver a perspective for solving the energy problems with which we will be confronted in the future. It is quite clear that there are huge potentials for energy savings, especially in the field of heat consumption, and that we will have to tap these potentials. This, however, is an issue to be addressed in future work.

Source :
http://www.energywatchgroup.org/fileadmin/global/pdf/2008-11-07_EWG_REO_2030_E.pdf

Source résumé 12 pages : http://www.energywatchgroup.org/fileadmin/global/pdf/2008-11-07_EWG_REO_2030_Summary_E.pdf

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-Rechsteiner R., 2008. ***Wind Power in Context – A clean Revolution in the Energy Sector*****,** 195 pages

This study is about growth, past forecasts and the future prospects of wind energy. Wind power net capacity additions over the last ten years (1998-2007) have showed a mean growth rate of 30.4 percent per year, corresponding to a doubling of net additions every 2½ years.
This study takes a different view from the IEA, developing four global scenarios for the future of wind power, after scrutinizing some of the most established forecasts for the wind sector. It assumes a continuous growth of global wind power additions over the next decades. The driving force for this growth is not ecological or moral motivations but the demonstrable economic advantages of wind power, including the abundant and cost free primary energy source (wind) which never runs out, easy technology access, short time to market, stable life-cycle-costs and continuous cost reductions due to progress on the learning curve.
The study concludes that roadblocks against wind power growth, such as fluctuations of wind, lack of grid connections and lack of reserve capacities, will be overcome through: planning, growing price incentives derived from the observed increase of oil prices and the restructuring of electricity markets (unbundling). Technical improvements will further propel the wind industry to deliver ever more affordable, secure and clean electricity at a very high speed that will be unattainable by more traditional technologies such as nuclear, natural gas or coal. Wind and solar, accompanied by hydro power, biomass and geothermal energy will pave the way to a 100 percent renewable power generation, very probably within the first half of this century.

Source : http://www.energywatchgroup.org/fileadmin/global/pdf/2009-01_Wind_Power_Report.pdf

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-Sustainable Development Commission, 2005. ***Wind Power in the UK - A guide to the key issues surrounding onshore wind power development in the UK***, 174 pages.

Wind power development arouses strong opinions. For the general public, a high level of support nationally for wind power can be contrasted with opposition at the local level. This situation presents local planners, councillors, and communities with a difficult task – to assess the needs of the wider environment against local concerns. Information about the complexities of wind power generation – its costs, intermittency issues, effects on the electricity network, noise, ecological and landscape impacts among others – is therefore essential for considered decisions to be made.
The aim of this report is to outline the main issues relating to onshore wind power and comment on their validity from a sustainable development perspective, in line with the principles outlined in the UK's new Framework for Sustainable Development.

Source : http://www.sd-commission.org.uk/publications/downloads/Wind_Energy-NovRev2005.pdf

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-Sustainable Development Commission, 2007. *Turning the Tide Tidal Power in the UK,* 158 pages.

The UK has the potential to generate large amounts of clean and secure electricity from the tides. Using both types of tidal resource – tidal stream and tidal range – we could supply at least 10% of the UK's electricity if fully exploited, around 5% from each resource. Such a substantial prize deserves very close attention as part of much wider action aimed at tackling the twin challenges of climate change and energy security. This report discusses both tidal stream and tidal range technologies, and considers a wide range of research, including the results of a public and stakeholder engagement programme. It presents the Sustainable Development Commission's position and recommendations on proposals for a
Severn barrage which, if built, would utilise a very large proportion of the UK's tidal range resource, and could generate large quantities of low carbon electricity for over 120 years. There is minimal conflict between the exploitation of tidal stream and tidal range resources, or between the technologies that might be deployed. The best tidal stream sites are in the north of Scotland, with significant potential also around north Wales, Northern Ireland, and the Channel Islands. The tidal range resource is concentrated in the estuaries off the west coast of Britain, including the Severn, the Mersey and the Humber.
Exploiting our tidal energy resources will require concerted action on a number of fronts. The tidal power technologies that could be deployed are very different in both design and level of development.
Tidal stream devices are currently at the demonstration stage, and will require many years of targeted support to reach commercial maturity. Tidal barrages, on the other hand, are a proven, but highly capital-

intensive option that would require a strong lead by Government to be built. With tidal lagoons, a lack of evidence means that the priority should be filling information gaps through practical, on-the-ground experience so that long-term viability can be better assessed. However, all tidal technologies have a number of environmental, social and economic impacts that need to be considered. In particular, the impact of a Severn barrage on internationally protected habitats and species, is of great concern.
In this report, the Sustainable Development Commission (SDC) lays out a series of recommendations for Government on how to develop the UK's tidal power resources. On the issue of a Severn barrage, we consider the conditions under which such a scheme would be consistent with the principles of sustainable development, and issue clear advice to Government on how this should be taken forward.

Source : http://www.sd-commission.org.uk/publications/downloads/Tidal_Power_in_the_UK_Oct07.pdf

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-The European Wind Energy Technology Platform (TPWind), 2008. ***Strategic Research Agenda - Market Deployment Strategy from 2008 to 2030*****,** 52 pages.

The European Wind Energy Technology Platform (TPWind) has a vision in which wind energy covers 12-14% of the EU's electricity consumption by 2020, with a total installed capacity of 180 GW. By 2030, it sees this increasing to cover 25% of electricity consumption, with 300 GW of installed capacity. Fulfilling this vision will be a major industrial and technological challenge. To begin the process, the members of TPWind have drawn up a common roadmap of the sector's research priorities: the Strategic Research Agenda.

Source :
http://www.ewea.org/fileadmin/ewea_documents/documents/publications/reports/SRA_Final_Version_July_2008.pdf

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-Woodman B., 2008. ***Connecting the future: the UK's renewable energy strategy,*** University of Exeter, commissioned by Greenpeace, 78 pages.

Source: http://www.odac-info.org/sites/odac.postcarbon.org/files/connectingthefuture.pdf

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-World Watch Institute, 2006. ***Biofuels for Transportation: Global Potential and Implications for Sustainable Agriculture and Energy in the 21st Century,*** Washington, Worldwatch Institute, 38 pages.

Les biocarburants comme l'éthanol et le biodiesel peuvent réduire significativement notre dépendance au pétrole, selon ce rapport du Worldwatch Institute pour le ministère allemand de l'Agriculture, de l'Alimentation et de la Protection du consommateur. En 2005, la production de biocarburants a dépassé 670 000 barils par jour, l'équivalent de 1 % du marché total des carburants de transport. Bien que le pétrole représente encore 96 % du carburant de transport, la production de biocarburants a doublé depuis 2001 et pourrait connaître une croissance encore plus forte à mesure que les politiques de soutien se développent.
Un bilan des risques et opportunités associés au développement à l'échelle mondiale des biocarburants est présenté. Il comprend des études ciblées sur le Brésil, la Chine, l'Allemagne, l'Inde et la Tanzanie.
Le Brésil est le *leader* en la matière, avec la moitié de sa production de canne à sucre fournissant plus de 40 % du carburant consommé par les transports (hors diesel). Aux États- Unis, où 15 % de la production de maïs fournit environ 2 % du carburant, la production d'éthanol croît encore plus rapidement, ce qui pourrait placer prochainement le pays en première position devant le Brésil en tant que *leader* mondial des biocarburants. On estime que ces deux pays produisent désormais de l'éthanol à un coût inférieur au coût actuel de l'essence.
Selon les auteurs du rapport, d'ici 2030, les biocarburants pourraient fournir 37 % du carburant américain et de 20 % à 30 % de celui de l'Union européenne. Le rapport fait aussi un bilan économique et social de l'impact des biocarburants, et met en garde contre les risques écologiques et de concurrence entre l'alimentation et l'énergie. Cependant, il met en avant le fait que les biocarburants peuvent augmenter la sécurité énergétique, créer des opportunités économiques pour les zones rurales, réduire la pollution locale et les émissions de gaz à effet de serre.
Les potentiels à long terme des biocarburants sont à rechercher dans l'utilisation non de grains mais de déchets (issus de l'agriculture, de l'exploitation forestière ou même de déchets municipaux) ainsi qu'à partir de matières ligno-cellulosiques (pailleS et tiges). Le rapport formule des recommandations pour accélérer le développement des biocarburants tout en minimisant les risques.

Source : www.worldwatch.org/node/4079

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-Zervos A., Kjaer C., 2008. ***Pure Power: Wind Energy Scenarios up to 2030***, 60 pages

Pure Power presents EWEA's three new wind energy development scenarios for 2010, 2020 and 2030. It looks in detail at the probable effects of the scenarios on electricity, greenhouse gas emissions and the EU economy.

Source : http://www.ewea.org/fileadmin/ewea_documents/documents/00_POLICY_document/PP.pdf

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-Chopplet M., Thomas D., 2004. ***Vers des alternatives végétales. L'émergence d'une nouvelle bioéconomie,*** Futuribles n°295, 03/2004, pp. 5-18.

Peut-être sommes-nous à l'aube d'une nouvelle ère agricole ou, mieux encore, d'une nouvelle « bioéconomie » mue à la fois par les préoccupations environnementales (en particulier, le changement climatique) et par le fantastique développement des biotechnologies permettant une exploitation plus systématique de « l'usine cellulaire végétale ».
Marc Chopplet et Daniel Thomas montrent ici que, au-delà de la valorisation non alimentaire des productions agricoles, se développent actuellement de véritables « alternatives végétales » et se profile une nouvelle alliance entre recherche, industrie, agriculture et environnement.
Bien entendu, l'on pense d'abord à la contribution de la biomasse à la production d'énergie et aux efforts considérables engagés à cette fin, aussi bien par les pays européens que par les États-Unis, qui affichent désormais des objectifs très ambitieux. Mais, au-delà de la production d'énergie, nous pourrions assister, affirment les auteurs, au « développement de technologies propres et au développement de produits nouveaux, alternatifs, préfiguration d'une nouvelle bioéconomie » qui tirerait profit en tous domaines des extraordinaires propriétés des plantes.
Marc Chopplet et Daniel Thomas nous exposent ces nouvelles perspectives, les facteurs qui peuvent jouer un rôle moteur ou frein dans cette révolution dont ils dessinent les contours, du point de vue tant technologique que politique, économique et social.

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-Lacroix D., Paillard M., 2008. ***L'avenir des énergies renouvelables marines. Synthèse de l'étude prospective Ifremer sur les énergies renouvelables marines à l'horizon 2030***, Futuribles N°345, 10/2008, pp. 43-60

Les questions énergétiques font de plus en plus souvent la une de l'actualité, tant le défi est grand face au changement climatique et à la raréfaction annoncée des énergies fossiles. Dans ce contexte, la promotion des énergies renouvelables va croissant, comme en témoigne l'objectif affiché par la France et l'Union européenne de produire 20 % de l'énergie consommée à partir de sources renouvelables d'ici 2020.
Parmi les différentes énergies renouvelables, l'océan constitue un immense réservoir (énergie des courants, des marées, des vagues, éolien, biomasse marine, etc.) et un véritable atout pour les pays qui, telle la France, ont la chance de disposer de nombreuses façades maritimes (en métropole et outre-mer). Afin de mesurer le potentiel des énergies renouvelables marines (EnRM), le président de l'Ifremer a lancé en mars 2007 un vaste exercice de prospective sur les EnRM à l'horizon 2030, en partenariat avec les principaux acteurs du monde maritime et avec l'appui méthodologique de Futuribles.
Denis Lacroix et Michel Paillard, qui faisaient partie du comité de pilotage de cet exercice, présentent ici les grandes lignes de cette réflexion prospective et les perspectives possibles des EnRM. Après un rappel des différentes énergies marines, ils exposent la méthode suivie et l'éventail des scénarios possibles retenus, ainsi que le potentiel des différentes technologies associées aux EnRM. Ils montrent ensuite dans quelle mesure les EnRM pourraient contribuer à l'offre énergétique française à l'horizon 2030, avant de développer un scénario « normatif » susceptible de servir d'axe stratégique à la politique énergétique française en matière d'EnRM (sur base d'une contribution d'environ 3 % au bouquet énergétique français en 2020).

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-Les Cahiers de Global Chance, ***Petit mémento des énergies renouvelables*** - HS n°3, septembre 2007, 84 pages

Éléments pour un débat sur les énergies renouvelables en France. Il a donc paru important à notre association de permettre aux citoyens de se faire une idée argumentée et objective du rôle que pourraient jouer les énergies renouvelables dans le paysage énergétique futur de la France, de l'Europe et du monde,

en les resituant dans l'ensemble des questions qui concernent les systèmes énergétiques, le développement et l'environnement.

Source : http://www.global-chance.org/IMG/pdf/GCnHS3.pdf

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-Rainelli P., 2007. ***L'avenir des biocarburants et incidences sur l'équilibre des marchés agricoles***Paris, Notre Europe, 59 pages.

Les biocarburants, ces énergies renouvelables découvertes avec le moteur à explosion et mises au ban de l'industrie automobile au milieu du XIXe siècle, sont rappelés sur le devant de la scène énergétique européenne et mondiale depuis le début des années 2000. Longtemps boudés par des économies abreuvées d'un pétrole ultracompétitif, les carburants issus de matières premières végétales voient leur pertinence ressuscitée, à l'heure de la lutte en faveur de la réduction des gaz à effet de serre, de la pression accrue sur les prix du pétrole et des risques croissants engendrés par la dépendance énergétique de l'Union européenne. Les mesures communautaires proposées à des fins climatiques et énergétiques pourraient à moyen terme bouleverser les perspectives des agriculteurs européens, en quête de nouveaux débouchés et soucieux de redorer une image quelque peu ternie par les problèmes de pollution engendrés par leur activité.
La Commission européenne présentait le 10 janvier 2007 son « Plan d'action énergétique ». Ce plan propose d'inclure 20 % d'énergies renouvelables dans le bouquet énergétique de l'UE et d'obliger les États membres à incorporer 10 % de biocarburants dans celui des transports d'ici à 2020. Parvenir à de tels seuils exigera des Européens qu'ils parviennent à mobiliser à la fois une partie de leurs ressources publiques pour assurer le développement de ces nouvelles énergies et une partie des terres arables afin de les consacrer aux cultures à vocation énergétique. Par ailleurs l'ouverture de « l'examen de santé » de la politique agricole commune et des débats sur les nouvelles orientations de l'agriculture européenne en 2008- 2009 rapproche l'échéance des choix stratégiques pour l'agriculture européenne de demain, et invite à étudier sérieusement les perspectives offertes aux agriculteurs par les biocarburants.
Dans la présente étude, Pierre Rainelli analyse les conditions économiques de leur développement, étroitement lié aux prix du pétrole. Il présente ensuite les incidences que pourrait avoir la généralisation des cultures à vocation énergétique sur l'équilibre des marchés agricoles, selon différentes hypothèses techniques et fiscales.

Source : www.notre-europe.eu/uploads/tx_publication/Policypaper25-Biocarburants.pdf

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-Roy C., 2007. ***Retour vers le biofutur ? Raréfaction des énergies fossiles et effet de serre : quel avenir pour neuf milliards d'habitants ?,*** Futuribles N°327, 02/2007, pp. 29-38.

Pendant des millions d'années, le « mesnage des champs » cher à Olivier de Serres fut la règle d'or d'une gestion prudente, précautionneuse, du capital « terre » : un tiers de l'espace pour nourrir les hommes, un tiers pour nourrir la terre, un dernier tiers pour assurer les autres productions « non alimentaires ». Puis, souligne Claude Roy, voici deux siècles, on apprit à exploiter les énergies d'origine fossile qui dormaient sagement depuis 300 millions d'années et tout s'est accéléré (la croissance démographique, la consommation à outrance de ressources rares…) au point aujourd'hui de mettre en péril l'écosystème. Il est donc urgent de nous ressaisir pour relever trois défis majeurs : réinventer vite une société sobre en énergie et en matières premières, développer vite des sources alternatives, renouvelables ou d'origine fissile, agir vite pour résorber les gaz à effet de serre.
Le « menu » est incontournable mais relever ces défis reste possible. Comment faire pour nourrir bientôt neuf milliards d'hommes sans continuer à menacer l'écosystème ? Claude Roy dessine ici une stratégie pour un modèle de développement alternatif sans nostalgie mais en misant sur une valorisation raisonnée de la biomasse, sur l'essor d'une bio-économie dont il montre ici et le potentiel et les limites.

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-UN (United Nations)-ENERGY, 2007. ***Sustainable Energy: A Framework for Decision Makers*** New York, UN-Energy, 64 pages.

Ce rapport étudie les opportunités mais aussi les risques relatifs à la bioénergie. Les auteurs reconnaissent les nombreux avantages que peut receler la bioénergie, notamment lorsqu'il s'agit d'atteindre des objectifs tels que l'accès à l'énergie et au développement rural. Ils soulignent ainsi l'importance pour les pays les plus pauvres et ne possédant pas de pétrole de produire eux-mêmes leur bioénergie grâce aux ressources locales. Selon le rapport, les bioénergies pourraient permettre à 1,6 milliard de personnes d'accéder à l'électricité et à 2,4 milliards de personnes de couvrir leurs besoins en énergie.

Mais de nombreuses barrières existent toujours, notamment le manque d'informations et de maîtrise concernant ces technologies, et la difficulté de financer des projets à de petites échelles. Les auteurs soulignent le rôle que peuvent jouer les organismes de microcrédit dans ce domaine. Le rapport avance cependant plusieurs hypothèses plus pessimistes concernant l'industrie de la bioénergie et recommande d'évaluer le mieux possible ses impacts économiques, environnementaux et sociaux.
D'un point de vue écologique, l'augmentation de la demande de biocarburants entraînera parallèlement une hausse de la demande en terres cultivables, alors même que la production de produits agricoles et forestiers est elle aussi en plein essor.
En effet, l'augmentation simultanée de la demande de bioénergie et de nourriture dans le monde se heurtera à la superficie limitée des terres cultivables (même si de nouvelles terres seront progressivement exploitées), entraînant une hausse des prix agricoles. Ce phénomène est d'ailleurs observable depuis 2006 sur le marché du sucre et sur celui du maïs. Par ailleurs, le développement massif des cultures destinées à la production de bioénergie pourrait entraîner dans certains pays l'essor de quelques grands producteurs, limitant ainsi les bénéfices espérés pour les petits exploitants. Néanmoins, les auteurs du rapport considèrent que l'industrie de la bioénergie sera aussi constituée de petites entreprises produisant et commercialisant localement.
Le rapport souligne enfin l'importance des responsables politiques, qui doivent promouvoir l'utilisation des biocarburants, par exemple en appliquant des taxes dont le niveau dépendra de l'impact environnemental de chaque type de carburant, afin de diminuer progressivement l'utilisation des plus polluants d'entre eux. La communauté internationale devrait également mettre en place un système de contrôle de la production des biocarburants selon certains critères environnementaux.

Source : http://esa.un.org/un-energy/pdf/susdev.Biofuels.FAO.pdf

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Prospective Energie/Climat

-AEE (Agence européenne pour l'environnement), 2005. ***Climate Change and a European Low-Carbon Energy System*****,** Copenhague, 2005, 76 pages.

L'Agence européenne pour l'environnement présente, dans ce rapport, différents scénarios d'évolution de la consommation énergétique européenne, dont un scénario de base et un scénario d'«action en faveur du climat » (accompagné de plusieurs variantes), ce dernier permettant d'abaisser les émissions de gaz à effet de serre dans l'UE jusqu'à 40 % de leur niveau de 1990 d'ici 2030.
Le scénario de base suppose la continuation des politiques environnementales actuelles au niveau européen, sans mise en oeuvre des mesures liées à Kyoto. Les émissions globales de gaz à effet de serre sont, en 2030, supérieures de 14 % à leur niveau de 1990.
Dans le scénario d'« action en faveur du climat », l'objectif de limiter les émissions de gaz à effet de serre à 550 ppm (particules par millier) entraîne des changements substantiels dans le système énergétique européen. La consommation de charbon baisse de 70 % à l'horizon 2050 (par rapport au scénario de base), celles de pétrole et de gaz naturel de 50 %. L'essentiel de ces réductions serait obtenu par une amélioration de l'efficacité énergétique, tandis que le reste pourrait être obtenu au moyen d'échanges de droits d'émission avec d'autres régions du monde, dans le cadre d'un marché international efficace d'échange de ces droits. Une variante se base sur une part plus importante des énergies renouvelables, qui représenteraient près de 40 % de la production d'électricité en 2030 (les émissions en 2030 sont alors inférieures de 21 % à leur niveau de 1990). Une autre suppose une augmentation de la part de l'énergie nucléaire (les émissions baissent de 14 %) et la dernière, au contraire, une sortie du nucléaire (- 8,4 %).
L'AEE examine enfin les coûts impliqués par la conversion de l'Europe à un système énergétique sobre en carbone.

Source : http://www.eea.europa.eu/publications/eea_report_2005_1

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-AIE, 2008. ***World Energy Outlook 2008,*** Paris, 569 pages.

La publication du rapport annuel de l'AIE, le *World Energy Outlook* (*WEO*), est intervenue à la fin d'une année au cours de laquelle le cours du baril de pétrole a été fortement chahuté, aussi les perspectives d'évolution de la consommation mondiale d'énergie sont-elles particulièrement intéressantes.
L'AIE propose un scénario de référence avec, pour la période 2006-2030, une croissance de 45 % de la demande mondiale d'énergie équivalent à 17 Gtep (gigatonnes équivalent pétrole); et avec un *mix* énergétique composé à 80 % de combustibles fossiles. La demande de pétrole serait en forte progression (passant de 85 millions de barils par jour à 106 millions en 2030, en baisse de 10 millions de barils par rapport aux prévisions 2007), la part du gaz resterait fixe tandis que celle du charbon monterait de 26 % à 29 %. Dans ce panorama énergétique, on observe une progression sensible de la part des énergies renouvelables (éolien, solaire, géothermique, etc.), ne représentant toutefois que 4 % de la demande finale, avec un tassement du nucléaire et un léger « retour » de la production hydraulique.
Plusieurs chapitres du WEO éclairent le futur paysage énergétique : la forte progression de la demande énergétique dans les villes, l'évolution des marchés du pétrole, du gaz et du charbon, une évaluation des ressources en hydrocarbures (avec une analyse de 800 gisements pétroliers), la stratégie des entreprises pétrolières.
Le rapport 2008 de l'AIE s'interroge sur la viabilité climatique de ses prévisions. Dans le cadre des négociations internationales post-Kyoto, à Copenhague, à la fin de l'année 2009, l'AIE en liaison avec les travaux du GIEC (Groupe intergouvernemental d'experts sur l'évolution du climat), à étudier deux scénarios alternatifs présentés dans le *WEO*, face au constat inquiétant des prévisions d'augmentation de 45 % de la consommation d'énergie à l'horizon 2030 et d'augmentation des températures pouvant aller jusqu'à 6℃ d 'ici 2100.
Le premier vise une stabilisation à long terme de la concentration en gaz à effet de serre (exprimée en équivalent CO2) à 450 ppm (parties par million), permettant de limiter à 2 ℃ l'élévation de la tempér ature moyenne dans le monde. Très contraignant, il suppose la mise en oeuvre de nouvelles techniques qui sont loin d'être au point (la séparation et le stockage du CO2 par exemple) et une forte percée des énergies renouvelables avec une nette remontée du nucléaire.
Le second scénario correspond à une stabilisation à 550 ppm, limitant à 3 ℃ le réchauffement de la pl anète. S'il est moins budgétivore, il suppose aussi des développements techniques considérables. Le *WEO* souligne qu'un accord sur le climat n'aura de réel impact que si un système international de permis d'émissions négociables (cap and trade) est mis en place et accompagné d'une taxe carbone dont le montant est d'au moins 100 dollars US la tonne de CO2 en 2030.

À travers ces nouveaux scénarios se reflète une montée de l'inquiétude concernant la possibilité de répondre à une demande croissante en énergie sans mettre en danger le climat, et il s'agit là d'une indéniable évolution de l'AIE.

Source : http://www.iea.org/w/bookshop/add.aspx?id=353
Résumé, 22 pages: http://www.worldenergyoutlook.org/docs/weo2008/WEO2008_es_french.pdf

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-AIE, 2008. ***Energy Technology Perspectives 2008*****,** Scénarios et stratégies à l'horizon 2050, Paris, 650 pages.

Le monde a besoin d'approvisionnements énergétiques toujours plus importants pour accompagner la croissance et le développement économiques. Cependant, des contraintes pèsent sur les ressources en énergie, et les émissions de CO2 résultant de la consommation actuelle d'énergie menacent d'ores et déjà le climat de notre planète. Quelles solutions pouvons-nous envisager pour changer de cap afin que notre avenir soit fondé sur des énergies plus propres et plus efficaces ? Quel coût devrons-nous supporter ? Et quelles politiques devons-nous mettre en oeuvre à cet effet ?
Cette deuxième édition de Energy Technology Perspectives (Perspectives des technologies de l'énergie) s'attaque à ces questions, en s'appuyant sur la grande compétence des analystes de l'Agence internationale de l'énergie et sur son réseau d'experts internationaux en matière de technologies énergétiques.
Cet ouvrage répond à l'appel adressé par le G8 à l'AIE afin qu'elle formule des orientations à l'intention des décideurs sur les moyens de passer de la réalité d'aujourd'hui à l'action nécessaire pour construire un avenir reposant sur des énergies propres, intelligentes et compétitives. L'analyse de l'AIE montre qu'un avenir énergétique plus durable est à notre portée, et qu'il passe par la technologie. L'accroissement de l'efficacité énergétique, le captage et le stockage du CO2, les énergies renouvelables et l'énergie nucléaire auront tous un rôle important à jouer.
Nous devons agir dès maintenant si nous voulons mettre en oeuvre le potentiel des technologies actuelles et émergentes ainsi que réduire la dépendance à l'égard des combustibles fossiles, avec les conséquences qui en découleront pour la sécurité en approvisionnement énergétique et l'environnement.
Ces travaux novateurs mettent en évidence, dans une série ambitieuse de scénarios mondiaux à l'horizon 2050, comment les technologies énergétiques peuvent faire la différence. L'étude présente des feuilles de route technologiques pour tous les grands secteurs énergétiques, notamment la production d'électricité, les bâtiments, l'industrie et les transports. Energy Technology Perspectives 2008 décrit en détail les technologies et les politiques afin de contribuer à cibler la discussion et le débat dans les milieux de l'énergie.

Résumé, 15 pages : http://www.iea.org/Textbase/techno/etp/ETP_2008_Exec_Sum_french.pdf
Texte complet, 630 pages : http://www.iea.org/w/bookshop/add.aspx?id=330

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-AIE, 2007. ***World Energy Outlook 2007*****,** China and India Insights: Implications for Global Energy Markets, Paris, 670 pages.

China and India, the world's fastest growing energy markets, are the special focus of the 2007 edition in the award-winning World Energy Outlook (WEO) series. How fast will demand in these dynamic economies rise? How will it be met? And what impact will their energy choices have on the rest of the world? Incorporating a global update of the WEO mid- and long-term energy projections reflecting the latest data, WEO 2007 also features 3 key energy scenarios to 2030:

- The Reference Scenario shows the trends in surging energy consumption and CO2 emissions under existing government policies;
- The Alternative Policy Scenario shows how policies driven by concerns for energy security, energy efficiency and the environment, under discussion but not yet adopted, could curb growth in energy demand;
- The High Growth Scenario analyses what would happen to energy use if current high levels of economic growth in China and India persist through the projection period.

New and more detailed models for both China and India allow a more comprehensive analysis of different future energy paths. WEO 2007 analyses the impact of rising energy use in these countries on:
- International energy prices;
- Investment needs and financing arrangements;
- Energy-related greenhouse gas and other emissions;
- Energy and non-energy international trade flows.

The prospects for coal use, the role of nuclear, renewables, energy-efficiency improvements and urban and rural energy poverty in these two countries are all examined in depth. The work rests on close collaboration with public authorities and private organisations in China and India, as well as with key international organisations.

Résumé, 18 pages : http://www.worldenergyoutlook.org/docs/weo2007/WEO_french.pdf
Texte complet, 674 pages : http://www.iea.org/textbase/nppdf/free/2007/weo_2007.pdf

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-AIE, 2006. **World Energy Outlook 2006,** Paris, 601 pages.

Two visions of the energy future:
- **under-invested, vulnerable and dirty**, or
- **clean, clever and competitive**.
Both are explored in this new edition of the authoritative *World Energy Outlook*. In it, the International Energy Agency responds to the remit of the G8 world leaders by **mapping a new energy future**, contrasting it with where we are now headed. *WEO 2006* shows how to change course. It counts the costs and benefits - and the benefits win.

World Energy Outlook 2006 also answers these questions:
- is the economic reaction to **high energy prices** merely delayed?
- is **oil and gas investment** on track?
- are the conditions shaping up for a **nuclear energy** revival?
- can **biofuels** erode the oil monopoly in road transport?
- can **2.5 billion people in developing countries** switch to modern energy for cooking?
- is **Brazil** learning new lessons or teaching the world?

With extensive statistics, detailed projections, analysis and advice, WEO 2006 equips policy makers and the public to re-make the energy future.

Résumé, 15 pages : http://www.worldenergyoutlook.org/docs/weo2006/french_sum_06.pdf
Texte complet, 601 pages : http://www.iea.org/textbase/nppdf/free/2006/weo2006.pdf

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-AIE, 2005. ***World Energy Outlook 2005,*** *Middle East and North Africa Insights*, Paris, 634 pages.

Middle East and North Africa Insights provides a detailed assessment of energy prospects throughout the Middle East and North Africa region, and the implications of these for world energy markets:
- Over 500 pages of detailed analysis supported by relevant graphs and tables.
- Coverage of domestic energy demand and supply trends for the entire region, with special emphasis on Saudi Arabia, Iraq, Iran, Kuwait, the United Arab Emirates, Qatar, Egypt, Libya and Algeria.
- Projections of future oil and gas exports based on current projects and plans, resource levels, domestic spending requirements and government policies.
- A Deferred Investment Scenario to assess the consequences of oil and gas production capacity in the region expanding less rapidly than expected.
- A review of the implications of these trends on global oil and gas markets, price levels and energy security.
- A time horizon to 2030 with results also shown for 2010 and 2020.

The World Energy Outlook is considered the most complete and authoritative energy publication and has received several prestigious awards from government and industry in recognition of its analytical excellence.

Résumé, 13 pages : http://www.worldenergyoutlook.org/docs/weo2005/french_sum_05.pdf
Texte complet, 634 pages : http://www.iea.org/textbase/nppdf/free/2005/weo2005.pdf

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-Anderson D., 2007. ***Policies for a Low Carbon UK Energy System*****,** IPPR, 72 pages.

This paper was written at the request of the Institute for Public Policy Research. Its purposes are to provide an independent assessment of the policies required for achieving a low carbon energy system in the UK, and to estimate the costs. The *directions* of such policies in the UK have been set out in the recent Energy White Paper. The principles on which they are based are clearly stated and, as with those outlined in the Stern Report, have three elements: carbon pricing, direct support for innovation, and reforming regulatory

standards and procedures to facilitate the uptake of low carbon and energy efficient technologies and practices.
But it is fair to say that the *magnitudes* of the incentives required, with the partial exception of the 'banding' of the Renewables Obligation, fall substantially short—in some cases by factors of 5 to 10—of what will be needed if the UK is to meet both its near and long-term targets of achieving a low carbon energy system by 2050. Through an analysis of the costs of low carbon technologies relative to those of the fossil fuels they would displace the paper estimates the magnitudes of the incentives required and, following the Stern Report, the overall cost of carbon abatement in relation to the level and growth of economic output. It also makes proposals as to how the incentives might be financed without—in my view, unnecessary—recourse to the public revenue.
The question has been raised by the ippr and the WWF, what if the carbon abatement targets need to be more ambitious? The Government's target of 60% abatement by 2050 stemmed from the report of the Royal Commission on Environmental Pollution in 2000. But as the Stern Review and the Fourth Assessment Report of the IPCC have found, the probabilities of dangerous threshold effects occurring in the climate system are now thought to be much higher than they were seven years ago, and may require more stringent climate change policies. As will be shown below (and not surprisingly) this would raise the costs of abatement and the magnitudes of the incentives required.

Source :
http://www.ippr.org/uploadedFiles/research/projects/Sustainability_Programme/policies_for_low_carbon.pdf

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-Anderson K., Bows A., Mander S., Shackley S., Agnolucci P., Ekins P. *The Eight Scenarios,* Tyndall Integrated Scenarios Project, First project workshop on November 30t h 2004, University of Manchester Policy Studies Institute of London, 30 pages.

Source : http://www.psi.org.uk/pdf/EightIntegratedTyndallScenarios.pdf

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-Biberacher M., 2004. ***Modelling and optimisation of future energy system using spatial and temporal methods***; Dissertation for the degree of a Doctor of natural science; Institute for physics, Experimental plasma physics, University of Augsburg Max-Planck-Institute for plasma physics, Garching, Augsburg, 144 pages.

This thesis sets out a modelling approach that is particularly suited to systems which exhibit significant geographical and temporal dependencies, for instance, systems where renewable energy supply technologies are present in large number. This new approach is implemented in the software tool TASES (Time and Space resolved Energy Simulation). At the centre of TASES is a exible data structure which is used to map the relevant attributes of the system under investigation.
This data structure is implemented as a cross-referenced two dimensional database, where one dimension captures the geographical description of the system while the other contains the time related dependencies. Extra e_ort was directed toward the design of this data structure because the details of the mapping will determine which modelling methodologies will later be feasible and which will not.

Source : http://www.vleem.org/PDF/thesis.pdf

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-Brouns S., Grimm V., Mitze D., Thomas, S., Wissner M., 2005. ***Target 2020 – Policies and Measures to reduce Greenhouse Gas Emissions in the EU,*** a report on behalf of WWF European Policy Office – Wuppertal Institute, Wuppertal, Germany, 90 pages.

Under the framework of the UNFCCC and its Kyoto Protocol the targets and strategies for the second and third commitment period (post-Kyoto) have to be discussed and set in the near future. The EU has committed itself to limiting global warming to 2 ℃ above pre-industrial level. This target requires that global GHG emissions have to be cut by half until 2050. This consequently means that industrial economies have to reduce their GHG emissions by around 60-80 %. To achieve this challenging goal, rapid action has to be taken. The second and third commitment period of the Kyoto Protocol with a time horizon of 2018 to 2022 or its successor will have to impose substantial reduction targets to its signatory states. And the debate on these targets has already started.
With this background WWF commissioned the Wuppertal Institute to conduct an integrated scenario analysis of GHG-emission reduction potentials of the EU 25 until 2020 and describe an ambitious GHG-mitigation strategy that shows how the EU 25 can achieve a reduction of its GHG emissions by 30 % or more until 2020, compared to 1990 levels.

Source : http://www.wupperinst.org/en/projects/proj/uploads/tx_wiprojekt/2217-report.pdf

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-Dean L. 2008. ***A greener british futur***, A submission to ippr's Britain's Got Brains competition, Institute for Public Policy Research, 14 pages.

While public interest in climate change issues has soared in recent years, people's behaviour has not become substantially greener. Lewis Dean has proposed a new Greener British Future competition along the lines of "Britain in Bloom" in which communities would compete on their 'greenness'.
The first section of this report examines the issues involved in changing public behaviour around Climate change. It will consider how the public has been made aware of the issues surrounding global Environmental issues, by highlighting some of the information that is currently in the public domain and has been reported on in the media. It will go on to examine some of the factors that have Inhibited widespread public behavioural change.
The second and third sections examine existing UK schemes, local and national respectively, to change Public behaviour. They provide case studies of a range of schemes to give a flavour of what is already being achieved. Section 4 outlines proposals for the Greener British Future (GB Future) competition, Followed by a fifth, concluding, section.

Source :
http://www.ippr.org.uk/members/download.asp?f=%2Fecomm%2Ffiles%2Fgreener_british_future.pdf

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-DTI, 2003. ***Energy White Paper : Our energy future - creating a low carbon economy***, UK, 142 pages.

Source :
http://www.sustainableommunities.fcm.ca/files/capacity_building_-_energy/ourenergyfuture.pdf

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-Edwards P.P, Kuznetsov W.L., David F., Brandon N.P., 2008. ***Hydrogen and fuel cells: Towards a sustainable energy future,*** 7 pages.

A major challenge—some would argue, the major challenge facing our planet today—relates to the problem of anthropogenic-driven climate change and its inextricable link to our global society's present and future energy needs [King, D.A., 2004. Environment—climate change science: adapt, mitigate, or ignore? Science 303, 176–177]. Hydrogen and fuel cells are now widely regarded as one of the key energy solutions for the 21st century. These technologies will contribute significantly to a reduction in environmental impact, enhanced energy security (and diversity) and creation of new energy industries.
Hydrogen and fuel cells can be utilised in transportation, distributed heat and power generation, and energy storage systems. However, the transition from a carbon-based (fossil fuel) energy system to a hydrogen-based economy involves significant scientific, technological and socioeconomic barriers to the implementation of hydrogen and fuel cells as clean energy technologies of the future. This paper aims to capture, in brief, the current status, key scientific and technical challenges and projection of hydrogen and fuel cells within a sustainable energy vision of the future. We offer no comments here on energy policy and strategy. Rather, we identify challenges facing hydrogen and fuel cell technologies that must be overcome before these technologies can make a significant contribution to cleaner and more efficient energy production processes.

Source : http://www.foresight.gov.uk/Energy/EnergyFinal/Edwards%20paper%20-%20Section%202.pdf

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-European Commission, 2006. ***World Energy Outloock,*** **WETO-H2,** Communities Research, 168 pages.
The WETO-H2 study has developed a Reference projection of the world energy system and two variant scenarios, a carbon constraint case and a hydrogen case. These scenarios have been used to explore the options for technology and climate policies in the next half-century. All the projections to 2050 have been made with a world energy sector simulation model – the POLES model – that describes the development of the national and regional energy systems, and their interactions through international energy markets, under constraints on resources and climate policies.

Source: http://ec.europa.eu/research/energy/pdf/weto-h2_en.pdf

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-Energy Information Administration (EIA), 2009. ***Annual Energy Outlook 2009 - With Projections to 2030,*** Office of Integrated Analysis and Forecasting, U.S. Department of Energy, Washington, 230 pages.

The Annual Energy Outlook 2009 (AEO2009), prepared by the Energy Information Administration (EIA), presents long-term projections of energy supply, demand, and prices through 2030, based on results from EIA's National Energy Modeling System (NEMS). EIA published an "early release" version of the AEO 2009 reference case in December 2008. The report begins with an "Executive Summary" that highlights key aspects of the projections. It is followed by a "Legislation and Regulations" section that discusses evolving legislation and regulatory issues, including a summary of recently enacted legislation, such as the Energy Improvement and Extension Act of 2008 (EIEA2008). The next section, "Issues in Focus," contains discussions of selected topics, including: the impacts of limitations on access to oil and natural gas resources on the Federal Outer Continental Shelf (OCS); the implications of uncertainty about capital costs for new electricity generating plants; and the result of extending the Federal renewable production tax credit (PTC). It also discusses the relationship between natural gas and oil prices and the basis of the world oil price and production trends in AEO2009. The "Market Trends" section summarizes the projections for energy markets. The analysis in AEO2009 focuses primarily on a reference case, low and high economic growth cases, and low and high oil price cases. Results from a number of other alternative cases also are presented, illustrating uncertainties associated with the reference case projections for energy demand, supply, and prices. Complete tables for the five primary cases are provided in Appendixes A through C. Major results from many of the alternative cases are provided in Appendix D. AEO2009 projections are based on Federal, State, and local laws and regulations in effect as of November 2008. The potential impacts of pending or proposed legislation, regulations, and standards (and sections of existing legislation that require implementing regulations or funds that have not been appropriated) are not reflected in the projections.

Source : http://www.eia.doe.gov/oiaf/aeo/pdf/0383(2009).pdf

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-European Renewable Energy Council (EREC), Greenpeace, 2008. *Energy [r]evolution, A sustainable global energy outlook,* 212 pages.

At the same time there is enormous potential for reducing our consumption of energy, while providing the same level of energy services. This study details a series of energy efficiency measures which together can substantially reduce demand in industry, homes, business and services.
Although nuclear power produces little carbon dioxide, there are multiple threats to people and the environment from its operations. These include the risks and environmental damage from uranium mining, processing and transport, the risk of nuclear weapons proliferation, the unsolved problem of nuclear waste and the potential hazard of a serious accident. The nuclear option is therefore discounted in this analysis. The solution to our future energy needs lies instead in greater use of renewable energy sources for both heat and power.
The energy [r]evolution
The climate change imperative demands nothing short of an energy revolution. At the core of this revolution will be a change in the way that energy is produced, distributed and consumed.
The five key principles behind this shift will be to:
• Implement renewable solutions, especially through decentralised energy systems
• Respect the natural limits of the environment
• Phase out dirty, unsustainable energy sources
• Create greater equity in the use of resources
• Decouple economic growth from the consumption of fossil fuels
(…)
Almost zero CO2 emissions by 2080
While worldwide CO2 emissions will decrease under the Energy [R]evolution Scenario from 10,589 million tonnes in 2050 (51% below 1990 levels) down to 425 m/t in 2090, the advanced scenario would reduce emissions even faster. By 2050, the advanced Energy [R]evolution version would reduce CO2 emissions by 61% below 1990 levels, and 80% below by the year 2075. Annual per capita emissions would drop below 1 t/capita in 2050 under the advanced scenario, compared with around 2060 under the basic Energy [R]evolution.
Further CO2 reductions between 2040 and 2080 are only possible in the transport sector, as the major remaining emitters are combustion engines in cars. It is not possible to replace the remaining fossil fuelled cars with electric vehicles as this would drive electricity demand up again. The increased demand cannot be met by renewables in this timeframe since this would exceed growth rates and grid capacities based on today's knowledge. The only way to cut vehicle emissions further would be to reduce kilometres driven by about 40% between 2040 and 2080.

Source : http://www.energyblueprint.info/fileadmin/media/documents/energy_revolution2009.pdf

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-Evans A., 2003. ***The Generation Gap, UK electricity fuel mix in 2020,*** 54 pages.

By 2020, the UK is projected to lose a sizeable proportion of its current electricity generating capacity. Most of Britain's ageing nuclear power stations are due for retirement by 2020, when only three are scheduled still to be open. To make matters harder, many of the UK's coal power stations will also be phased out over the same period because of the effects of the EU Large Combustion Plant Directive, which will force coal power stations to install expensive equipment in order to reduce emissions that cause air pollution and acid rain. In many cases, it will be cheaper for plant owners to close the power stations rather than install the technology. This raises the question of what – if anything – the Government should do about Britain's looming electricity 'generation gap'. In many ways, this is the central issue facing the Government in its forthcoming energy White Paper. This report seeks to answer the question by examining four different scenarios for what the UK's electricity generation sector might look like in 2020. The four scenarios – Business as Usual, The Nuclear Option, Clean & Green and Fortress Britain – are designed to illustrate the consequences of decisions that the Government must make in the energy White Paper: decisions about the level of political commitment that is made to energy efficiency and renewables, whether the UK will need to build a new generation of nuclear reactors and where the balance between state and market should lie.

Source : http://www.ippr.org.uk/publicationsandreports/publication.asp?id=477

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-GBN (Global Business Network), 2007. ***Energy Strategy for the Road Ahead. Scenario Thinking for Business Executives and Corporate Boards*****,** San Francisco, 33 pages.

L'EPA (Environmental Protection Agency) a financé un programme, Energy Star, qui a rassemblé un groupe de responsables d'entreprises (parmi lesquelles General Motors, Shell, Toyota) pour, au cours de deux séminaires, imaginer l'avenir du contexte énergétique américain à l'horizon 2020, à travers quatre scénarios. En faisant la liste des incertitudes qui pesaient sur cet avenir, le groupe en a retenu deux principales :
- des changements possibles dans la politique énergétique et environnementale américaine (vers plus ou moins de limitation des émissions de gaz à effet de serre, priorité à la croissance économique ou à l'environnement) ;
- des changements possibles dans la division internationale du travail (la production et les flux de capitaux restent centrés sur les pays développés ou bien se recentrent sur les pays émergents) et dans le marché mondial de l'énergie (prix plus ou moins volatiles).
Ces deux axes d'incertitude forment la matrice des scénarios suivants.

The Same Road (Le même chemin)
Les États-Unis gardent leur position dominante, l'offre de pétrole et de gaz reste suffisante et de nouveaux gisements sont régulièrement découverts. Peu de nouvelles politiques sont adoptées, mais les ventes de voitures hybrides augmentent et la technologie du charbon propre se développe, ainsi que, vers la fin de la période (2016-2020), la liquéfaction du charbon.
The Long Road (La longue route)
Les prix de l'énergie fluctuent énormément, avec des pics importants, l'offre d'énergie étant soumise à des ruptures et à un investissement insuffisant. Le pouvoir économique passe au Sud et les pays industrialisés de longue date ont du mal à s'adapter à cette nouvelle donne. La compétition pour les ressources est générale. Les États-Unis s'engagent dans une longue et difficile transition, bien après l'Union européenne qui gagne des parts de marché du fait de son avance dans les technologies propres.
The Broken Road (La déviation)
Dans un premier temps, les États-Unis jouissent d'une certaine stabilité, avec des prix de l'énergie relativement stables, jusqu'à ce qu'une série d'événements intervienne : un nouvel ouragan plus catastrophique que Katrina, la formation d'une nouvelle alliance entre pays producteurs de pétrole qui déciderait de ne plus fournir les États-Unis… Les industries sont très affectées, particulièrement dans le secteur des transports. Les États- Unis entrent en récession, les sociétés d'assurance sont au bord de la faillite. En 2017, le gouvernement fédéral déclare l'état d'urgence climatique et énergétique, et lance le « Manhattan Project II » pour développer de nouvelles sources d'énergie, repenser l'aménagement urbain, développer (ou importer d'Europe) les technologies propres. Les émissions sont réduites de manière drastique.
The Fast Road (La voie rapide)

Les prix de l'énergie s'élèvent fortement, assez pour encourager les investissements en matière d'efficacité énergétique et dans les énergies alternatives. Un consensus politique émerge aux États-Unis pour contrôler les émissions grâce à des normes plus strictes sur les voitures, les bâtiments, ainsi qu'à des subventions. Les entreprises prennent conscience des opportunités que ces nouveaux marchés représentent et prennent l'avantage dans le domaine du charbon propre ou encore de l'énergie solaire. Des « indicateurs du futur » accompagnent chaque scénario : il s'agit de faits ou d'études récentes allant dans le même sens.
L'exercice a ensuite consisté à imaginer ce que chacun de ces scénarios signifierait pour les entreprises.

Source : http://www.energystar.gov/ia/business/GBN_Energy_Strategy.pdf

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-Kharecha P. A., Hansen J. E., 2008. ***Implications of "peak oil" for atmospheric CO2 and climate,*** NASA Goddard Institute for Space Studies and Columbia University Earth Institute, New York, NY, 22 pages.

Unconstrained CO2 emission from fossil fuel burning has been the dominant cause of observed anthropogenic global warming. The amounts of 'proven' and potential fossil fuel reserves are uncertain and debated. Regardless of the true values, society has flexibility in the degree to which it chooses to exploit these reserves, especially unconventional fossil fuels and those located in extreme or pristine environments. If conventional oil production peaks within the next few decades, it may have a large effect on future atmospheric CO2 and climate change, depending upon subsequent energy choices. Assuming that proven oil and gas reserves do not greatly exceed estimates of the Energy Information Administration, and recent trends are toward lower estimates, we show that it is feasible to keep atmospheric CO2 from exceeding about 450 ppm by 2100, provided that emissions from coal, unconventional fossil fuels, and land use are constrained. Coal-fired power plants without sequestration must be phased out before mid-century to achieve this CO2 limit. It is also important to 'stretch' conventional oil reserves via energy conservation and efficiency, thus averting strong pressures to extract liquid fuels from coal or unconventional fossil fuels while clean technologies are being developed for the era 'beyond fossil fuels'. We argue that a rising price on carbon emissions is needed to discourage conversion of the vast fossil resources into usable reserves, and to keep CO2 beneath the 450 ppm ceiling.

Source : http://arxiv.org/ftp/arxiv/papers/0704/0704.2782.pdf

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-Lockwood M., Bird J., Alvarez R., 2007. ***Summary of 2050 Vision, How can the UK play its part in avoiding dangerous climate change?***, 11 pages

In 2000, the UK Government adopted a recommendation from the Royal Commission on Environmental Pollution that the UK should cut its carbon emissions by 60 per cent from 1990 levels by 2050. The Government now proposes to make this goal legally binding, by writing it into the draft Climate Change Bill.

However, climate science has moved on substantially since 2000, and now suggests that countries like the UK should be aiming to make carbon dioxide emissions reductions of at least 80 per cent from 1990 levels by 2050, if we are to avoid a 2℃ global warming above pre-industrial levels – a threshold beyond which there is a sharp increase in the expected impacts of climate change.

As a result, a number of voices are now calling for the Government to go beyond the 60 per cent target, to adopt a long-term carbon emissions reduction goal of 80 per cent in the Climate Change Bill. In a speech in September 2007, Prime Minister Gordon Brown opened the door to a review of long-term emissions reductions objectives, saying that one of the first tasks of the proposed Climate Change Committee would be to revisit the targets in the Bill.

But is an 80 per cent reduction in UK emissions even remotely possible? How would we generate electricity? How would industry manage? Would we need nuclear power? Would we all have to stop flying and give up our game consoles and gadgets? How would we heat our homes? What would fuel our cars and lorries? And above all, what would it all cost and can we afford it?

Source:
http://www.ippr.org.uk/members/download.asp?f=%2Fecomm%2Ffiles%2F2050_vision_web_summary.pdf

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-Makhijani A., 2008. ***Carbon-Free and Nuclear-Free: A Roadmap for U.S. Energy Policy,***
Ph.D., Institute for Energy and Environmental Research, 290 pages.

The overarching finding of this study is that a zero-CO_2 U.S. economy can be achieved within the next thirty to fifty years without the use of nuclear power and without acquiring carbon credits from other countries. In other words, actual physical emissions of CO_2 from the energy sector can be eliminated with technologies that are now available or foreseeable. This can be done at reasonable cost while creating a much more secure energy supply than at present. Net U.S. oil imports can be eliminated in about 25 years. All three insecurities – severe climate disruption, oil supply and price insecurity, and nuclear proliferation via commercial nuclear energy – will thereby be addressed. In addition, there will be large ancillary health benefits from the elimination of most regional and local air pollution, such as high ozone and particulate levels in cities, which is due to fossil fuel combustion.

Source : http://www.ieer.org/carbonfree/CarbonFreeNuclearFree.pdf

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-Schwartz P., Randall D., 2003. ***An Abrupt Climate Change Scenario and Its Implications for United States National Security***, 22 pages.

The purpose of this report is to imagine the unthinkable – to push the boundaries of current research on climate change so we may better understand the potential implications on United States national security.

In this report, as an alternative to the scenarios of gradual climatic warming that are so common, we outline an abrupt climate change scenario patterned after the 100- year event that occurred about 8,200 years ago. The report explores how such an abrupt climate change scenario could potentially de-stabilize the geo-political environment, leading to skirmishes, battles, and even war due to resource constraints.
As global and local carrying capacities are reduced, tensions could mount around the world, leading to two fundamental strategies: defensive and offensive. Nations with the resources to do so may build virtual fortresses around their countries, preserving resources for themselves. Less fortunate nations especially those with ancient enmities with their neighbors, may initiate in struggles for access to food, clean water, or energy. Unlikely alliances could be formed as defense priorities shift and the goal is resources for survival rather than religion, ideology, or national honor.
This scenario poses new challenges for the United States, and suggests several steps to be taken.
There are some indications today that global warming has reached the threshold where the thermohaline circulation could start to be significantly impacted. These indications include observations documenting that the North Atlantic is increasingly being freshened by melting glaciers, increased precipitation, and fresh water runoff making it substantially less salty over the past 40 years.
This report suggests that, because of the potentially dire consequences, the risk of abrupt climate change, although uncertain and quite possibly small, should be elevated beyond a scientific debate to a U.S. national security concern.

Source : http://www.edf.org/documents/3566_AbruptClimateChange.pdf

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-SHELL GROUP, 2008. ***Shell Energy Scenarios 2050*****,** Londres, 52 pages.

Jamais encore l'humanité n'a été confrontée à un tel défi en ce qui concerne l'avenir des ressources énergétiques et de la planète. Ce défi peut se résumer en quelques mots : « davantage d'énergies, moins de dioxyde de carbone ». Pour nous aider à réfl échir sur l'avenir des ressources énergétiques, nous avons établi deux scénarios décrivant chacun une évolution possible de la situation.
Dans le premier scénario – appelé Scramble (Bousculade) – les décideurs font peu de cas d´une utilisation plus effi cace de l´énergie jusqu´à ce que les approvisionnements se resserrent. De même, les émissions des gaz à effet de serre ne sont pas sérieusement prises en compte tant qu'il n'y a pas de grands bouleversements climatiques.
Dans le second scénario – Blueprints (Plans directeurs) – on s'attaque de plus en plus aux niveaux locaux au développement économique, à la sécurité énergétique et à la pollution de l´environnement. Un prix est appliqué à une masse critique d'émissions, ce qui stimule le développement des technologies d'énergie propre, comme le captage et stockage du dioxyde de carbone, et des mesures favorisant l´efficacité énergétique. Il en résulte une diminution considérable des émissions de dioxyde de carbone.
Nous sommes déterminés à fournir de l'énergie de manière responsable et à servir nos clients et investisseurs de la façon la plus effi cace possible. Ces deux scénarios nous permettent d'atteindre ces deux objectifs en testant notre stratégie face à une série d'évolutions possibles à long terme. Cependant, à notre

avis, les résultats du scénario Blueprints offrent de meilleures perspectives pourun avenir durable, que ceux-ci se présentent exactement ou non de la façon dont nous les avons décrits. Je suis convaincu que ces résultats sont possibles moyennant un parfait équilibre entre ces trois composantes : politique, technologie et engagement de la part des gouvernements, de l'industrie et de la société en général. Ce ne sera cependant pas facile et le temps qui nous est donné est court. Nous devons y réfl échir de façon précise, faire d'énormes investissements et mettre en place un leadership efficace. Quel que soit le rôle qui sera le vôtre, j'espère que ces scénarios vous aideront à mieux comprendre les choix qui s'offrent à vous. *Jeroen van der Veer, Directeur général, Royal Dutch Shell plc*

Source : http://www-static.shell.com/static/public/downloads/brochures/corporate_pkg/scenarios/shell_energy_scenarios_2050.pdf
Source rapport en français, 27 pages : http://www-static.shell.com/static/public/downloads/brochures/corporate_pkg/scenarios/shell_energy_scenarios_french.pdf

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-Simms A., Woodward D., Kjell P., Leaton J., 2006. ***Hooked on oil: breaking the habit with a windfall tax,*** NEF, 20 pages.

New research from **nef** and WWF reveals the paradox of the UK Treasury hooked on income from the oil and gas sector, yet missing a never-to-be-repeated opportunity to invest in the transition to a sustainable energy system by failing to tax surplus profits from oil. The research calls on the government to follow the broad example set by Norway, which established in-effect, an oil 'Legacy Fund.'

Source : http://www.neweconomics.org/gen/uploads/hya3c255clsra5yk04fkvh3n23102006092016.pdf

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-Tyndall Centre for Climate Change Research, 2005. ***Decarbonising the UK Energy for a Climate Conscious Future,*** 89 pages.

The Decarbonising the UK scenarios produced by the Tyndall Centre are the first to fully integrate the energy system and include carbon dioxide emissions from air, sea and land transport. The scenarios integrate the perspectives of energy analysts, engineers, economists and social and environmental scientists to provide a whole system understanding of how the UK Government can achieve a 'true' 60% carbon dioxide reduction target by 2050. The failure of governments to account for emissions from international aviation and shipping has led to a serious underestimation of the actions necessary to achieve a true 60% reduction. Within the UK this is particularly evident; whilst the Government's Energy White Paper emphasises the need for significant carbon reductions, the Aviation White Paper supports considerable growth in air travel. Research conducted at the Tyndall Centre demonstrates the urgent need for coherent climate policy across key departments, including DEFRA, DfT, DTI, HM Treasury and ODPM. The Tyndall scenarios clearly illustrate that even a true 60% reduction in the UK's carbon dioxide emissions is technically, socially and economically viable. Consequently, it is within our grasp to reconcile a dynamic and economically successful society with low carbon dioxide emissions.

Source : http://www.tyndall.ac.uk/media/news/tyndall_decarbonising_the_uk.pdf

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-VLEEM – Very Long Term Energy Environment Modelling - EC/DG Research Contract ENG2-CT-2000-00441, **Final report**, August 2002, Synthesis, 66 pages

Existing long term energy-environment models, such as MEDEE-ENV or POLES, provides reliable scenario projections on energy demand and supply and related environmental consequences to a maximum of 25-30 years. But the new challenges related to the climate change, the depletable resources of fossil fuels or the management of the nuclear wastes, as well as the agenda for the development of the technologies which are necessary to face these challenges, require to consider these issues 50 years or more ahead.
In order to overcome the limits of these models, and to benefit at the same time of their past experiences, the VLEEM project proposes a genuine approach and innovative modelling tools to assess the energy-environment systems over the very long term, which are based on the strengths of existing long term energy models, but focussed on two major objectives :

- To describe normative futures which fit with a set of overall constraints, like the stabilisation of the concentration of green-house gases in the atmosphere, or the stabilisation of the overall inventory of plutonium and minor actinids, etc…
- To describe and formalise the association of causalities necessary to bring the system from the present situation to the targeted future, through a « back-casting » approach.

To conceptualise and develop such a "very long term energy-environment model", the VLEEM project was organised in four main work packages:
- System analysis, conceptualisation and general specification of the model;
- Formalisation of a first skeleton of the model;
- Programming analysis of a set of main energy demand and supply new technologies;
- Case studies: stabilising CO2 concentration of the atmosphere and world plutonium and minor actinids inventory at sustainable levels.

The project has been carried out by a consortium of 5 European partners with extensive experience both in scientific and technological R&D, and in long term socio-economic and energy forecasting and modelling. ENERDATA was the project's coordinator.

Although very ambitious despite the rather short time span available for R&D work up till now (18 months), the VLEEM project has already delivered several significant results:
- New concepts have been elaborated and made operational, according to which the specifications of several components of the very long term energy-environment model have been designed;
- A first comprehensive skeleton of the energy-demand side model has been developed and calibrated for the EU-15; several components of the supply-side model have also been developed: physical flows, time and space resolve energy simulation, nuclear cycles;
- Seven monographs on the specifications and conditions of development of the new technologies considered have been written;
- Three main case studies, built around three main energy technology clusters (fossils, renewables, nuclear), have been developed.

Source : http://www.vleem.org/PDF/final-report.pdf

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-VLEEM 2 - FINAL REPORT - EC/DG Research, 2005, 134 pages

The goal of the Very Long Term Energy-Environment Model (VLEEM) Project is to establish a methodology and to develop tools for energy system modelling over one century.

In VLEEM I major steps in this direction were realised. In VLEEM II, the tools have been completed and validated while developing the case studies, but their formal integration in a single model of the "great all" has been abandoned for practical and conceptual reasons.

Special emphasis has been put in VLEEM II on energy efficiency and end-use technologies, which were both identified as priorities in VLEEM I. This represents an attempt to react to remarks and critics received after VLEEM I, although assessing end-use technologies and related energy efficiency potentials over one century remains a big challenge. Neither all endues technologies, nor all energy services have been assessed for due to the enormous number and variety of options. The emphasis has been put on bulk material production and transport, because they constitute the core problem in the very long term as regard the use of fossil fuels and the related emissions of GHG.

Source : http://www.enerdata.fr/VLEEM/PDF/30-05-05/final%20report.pdf

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-Watson J., 2003. UK Electricity Scenarios for 2050, Tyndall Centre for Climate Change Research, working paper, 15 pages.

The recent energy White Paper included a commitment to a 60% reduction in UK carbon emissions by 2050. To achieve this reduction will require radical changes to energy supply and demand. Many of the most important changes are likely to affect the UK electricity system. A decarbonised electricity system will require large contributions from renewable and other low carbon energy sources (e.g. fuel cells, micro CHP and possibly nuclear). It will also need to facilitate significant amounts of electricity storage technologies, and substantial reductions in demand. At the same time, it is essential that the operational security of the electricity system be maintained.

This paper builds on the work of the Royal Commission on Environmental Pollution (RCEP) report: Energy – The Changing Climate. The RCEP report includes four scenarios that explore options for a 60% reduction in UK carbon emissions by 2050. The paper elaborates these scenarios, and applies them to the UK electricity system. The paper establishes electricity generating plant capacities, load factors and annual outputs for each scenario. It also compares these outputs with electricity demand figures from the RCEP report.

The analysis in this paper shows that the RCEP scenarios imply a radically different electricity system to the one we have today. In all scenarios, the system is more decentralised with more generating capacity and a greater contribution from renewable energy sources. At the same time, electricity demand has been held at 1998 levels or reduced by up to a third. The scenarios include large variations in the capacities and types of generating technology that will be required to meet this demand. At one end of the spectrum, scenario 1 includes four times as much generating capacity as the UK has today, with substantial investments in nuclear, renewable and fossil fuel power stations. At the other, scenario 4 includes a modest capacity increase, most of which will be met by renewables, coupled with a 33% reduction in electricity demand.
The next phase of the Tyndall Centre's work on electricity system security includes some detailed modelling work that builds on the scenarios that have been elaborated in this paper. This modelling will assess the operational security implications of these scenarios on a seasonal, daily and hourly basis. It will be complemented by economic and regulatory analysis to develop regulatory incentives that will support the development of secure sustainable electricity systems.

Source : http://www.tyndall.ac.uk/publications/working_papers/wp41.pdf

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-Watson J., Tetteh A., Dutton G., Bristow A., Kelly C., Page M., 2004. **UK Hydrogen Futures to 2050,** Tyndall Centre for Climate Change Research, 20 pages.

This working paper summarises the results of a scenario development exercise by team members of the Tyndall Centre research project: The Hydrogen Energy Economy: Its Long Term Role in Greenhouse Gas Reduction. The project's aim is to develop and assess alternative transition paths to the widespread use of hydrogen in the UK in 2050. It develops four alternative energy scenarios for the UK in 2050, with a particular focus on the role for hydrogen within each.
The working paper begins with a short methodology section that puts the scenario exercise into context. This shows how the scenarios link with the other elements of the project, particularly the analysis of alternative pathways for hydrogen to 2050. Following this, the paper sets out the basic scenarios framework that has been employed, including examples of its previous use within the UK government.
The paper builds on these previous uses, and elaborates each scenario with a specific focus on the consequences for hydrogen production, transmission and use. It also quantifies UK energy demand growth and estimates hydrogen's contribution to demand for 2050. This quantification process also draws on previous work, particularly that by the Performance and Innovation Unit (PIU) within the Cabinet Office.
The results summarised in this working paper include a wide range of possibilities for the future of hydrogen within the UK: from a World Markets scenario in which there are no explicit drivers for hydrogen to a Global Sustainability scenario in which hydrogen becomes a central component of the UK energy system. These results are being used within the project to model a set of transition pathways from the present energy system to alternative possibilities for 2050. A stakeholder workshop is planned to critically examine these pathways. The outcomes will help the project team to identify the technology breakthroughs and policy decisions that are necessary features of each pathway.

Source : http://www.tyndall.ac.uk/publications/working_papers/wp46.pdf

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-World Watch Institute, 2008. ***Low Carbon Energy,*** World Watch Report n°178, 52 pages.

Technologies available today, and those expected to become competitive over the next decade, will permit a rapid decarbonization of the global energy economy. New renewable energy technologies, combined with a broad suite of energy-efficiency advances, will allow global energy needs to be met without fossil fuels and by adding only minimally to the cost of energy services .

Source : http://www.worldwatch.org/press/prerelease/EWP178.pdf

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-Bain P., Farhi F., Chapuy P., Drouet D., Mirenowicz P., Maujean S., Theys J. *AGORA 2020*, synthèse à mi-parcours, 153 pages.

A l'été 2003, la Direction de la Recherche du ministère de l'Equipement, des Transports, de l'Aménagement du territoire, du Tourisme et de la Mer a engagé une vaste consultation prospective sur les attentes en matière de recherche dans ses différents domaines d'intervention – en y incluant le logement, la ville, la gestion des risques et l'observation des milieux. Cette consultation – qui a reçu le nom d'Agora 2020 – entre maintenant dans sa phase finale. Le document qui suit constitue une première synthèse des travaux déjà

réalisés en 2003 et surtout 2004. Rédigé conjointement par l'équipe du Centre de Prospective et les bureaux d'études qui ont accompagné le projet il est divisé en deux grandes parties :
-une synthèse à mi-parcours, reprend sous forme de « messages clefs » les deux premières phase d'Agora 2020 ; -un « dossier complémentaire » rassemble, ensuite, en quatre parties, quelques comptes-rendus représentatifs de l'ensemble des travaux déjà réalisés. Le lecteur qui souhaiterait en savoir plus, pourra consulter la liste complète des documents produits depuis le démarrage d'Agora 2020 en page 61.

Source, Dossier du CPVS n°8 :
http://www.recherche-innovation.equipement.gouv.fr/article.php3?id_article=50

-Brown L.R., Larsen J., Dorn J.G., Moore F. C*. *Le Plan B à l'horizon 2020*. ***Réduction de 80% des émissions de gaz à effet de serre*.* Traduction de l'anglais : P.-Y. Longaretti pour Alternative Planétaire, 21 pages.

Lorsque les responsables politiques se penchent sur la question de la réduction des émissions de gaz à effet de serre, ils se focalisent presque invariablement sur les objectifs politiquement atteignables. L'Earth Policy Institute adopte un autre point de vue :

Quelle réduction est nécessaire pour éviter les effets les plus désastreux du changement climatique ?

Source : http://www.alternativeplanetaire.com/sites/alternativeplanetaire.com/files/docs/Objectif80.pdf

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-Commissariat Général du Plan, 1998. ***Énergie 2010-2020,*** Paris, 532 pages.

Ce rapport en cinq volumes se compose d'une synthèse de plus de 500 pages, oeuvre d'un groupe plénier présidé par Pierre Boisson et animé par Nicole Jestin-Fleury (coordinatrice) et Patrick Criqui (rapporteur général) et de quatre autres tomes, représentant les contributions d'autant d'«ateliers» :
- Le contexte international, sous la responsabilité d'Olivier Appert et Nicole Jestin-Fleury (463p.),
- Les défis du long terme, sous la responsabilité de Benjamin Dessus et Michel Colombier (307p.),
- Trois scénarios énergétiques pour la France, sous la responsabilité de François Moisan et Oliver Godard (310p.),
- Quelle politique pour la France ? sous la responsabilité de Jean-Daniel Lévi et Hugo Hanne (193p).
Dès l'avant-propos, le Commissaire au Plan, Jean-Michel Charpin, annonce la couleur : le temps des certitudes, des monopoles, de l'orgueilleuse politique d'indépendance nationale et du «tout-électrique-tout-nucléaire» est fini. Le reste du rapport, comme les avis des partenaires sociaux et des organisations professionnelles, confirme la prise de conscience d'une nouvelle donne, quand bien même on décèle, ici et là, des traces de nostalgie colbertiste. Il va falloir diversifier les sources, prendre mieux en compte l'environnement, écouter le client et les communautés territoriales, sortir du pré hexagonal et batailler pour rester compétitifs sur la scène internationale.
Trois scénarios sont proposés, teintés de plus ou moins de libéralisme ou de colbertisme. L'horizon retenu, 2010-2020, représente une période charnière, dans la mesure où, en 2010, le système énergétique sera pour l'essentiel celui qui résulte du capital accumulé et de décisions d'investissement déjà prises, tandis que 2020 verra l'aube d'une nouvelle politique. On saura alors si l'on remplace les centrales nucléaires arrivées à fin de vie, si l'on bascule vers le gaz et la cogénération, si le parc automobile continue de croître ou se stabilise, si les effets d'ouverture des marchés sont modestes ou importants, si la consommation des pays émergents croît aussi fortement qu'on peut le supposer, si les engagements internationaux souscrits à Kyoto sur la protection de la biosphère sont effectivement respectés.
Quelques enseignements importants émergent de ces scénarios :
- le pétrole demeure la première source d'énergie (autour de 40 % des besoins totaux),
- le nucléaire reste le principal producteur d'électricité,
- le gaz et la cogénération se développent,
- une utilisation plus sobre et plus rationnelle de l'énergie s'impose en tous cas.
Dans les trois scénarios, la France dépasse le plafond d'émissions de CO2 que lui imposent les engagements pris à Kyoto et la situation s'aggraverait si le nucléaire se voyait freiné, comme il l'est dans d'autres pays. Pour faire mentir les scénarios, il faudrait utiliser beaucoup mieux les ressources de la technologie, mais aussi changer notre style de consommation. Comme l'ouverture des marchés impose simultanément à l'État de redéfinir clairement son rôle et aux opérateurs historiques de bien séparer les différentes composantes de leur activité, dont certaines seulement relèvent de la mission de service public et de la souveraineté nationale, l'impression qui se dégage de ce rapport est que la société française dans son

ensemble a besoin d'un bon dépoussiérage. Les partenaires sociaux et les organisations professionnelles, dans leurs avis, ne s'y sont pas trompés.

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-Conseil d'Analyse Economique, 2008. ***Prospective « FRANCE 2025 », La France dans quinze ans : tendances et ruptures, opportunités et risques***, CAE, 58 pages.

Le Conseil d'analyse économique (CAE) a été saisi par le Premier ministre et le secrétaire d'État à la Prospective et à l'Évaluation des politiques publiques pour donner son analyse sur les tendances et les ruptures pour la France à l'horizon de quinze ans. L'art de la prospective est particulièrement difficile. La capacité à se projeter à quinze ans est évidemment très différente selon les variables considérées.
Construire des scénarios obéit souvent à des règles simples consistant à partir d'un scénario central reconduisant les tendances historiques et à proposer deux scénarios alternatifs explorant des hypothèses nettement contrastées. On essaiera de résumer le point de vue d'une large majorité de membres du CAE autour de trois scénarios.
Cinq principaux domaines méritent examen pour la définition de scénarios : la mondialisation, l'avenir de l'Europe, le mode de croissance, la place des institutions, la dimension sociétale. Cinq axes et trois scénarios par axe conduiraient mathématiquement à 243 combinaisons. Il est donc souhaitable de réduire leur nombre. Les scénarios mondiaux sont exogènes car la France seule a peu de moyens de les modifier. C'est un peu moins vrai pour les scénarios européens, qui doivent être compatibles avec ceux du monde, mais pour lesquels le rôle historique de la France pourrait permettre de peser sur leur survenance. Les scénarios plus spécifiques sur la France qui concernent les axes 3, 4 et 5, soit 27 combinaisons, résultent plus de choix publics et de capacité collective à évoluer.
Lors de discussions entre membres du CAE, trois scénarios réduisant drastiquement les vingt sept combinaisons ont été suggérés :
• le fil de l'eau : scénario tendanciel avec ses risques de marginalisation, d'appauvrissement, de tensions sociales ;
• le repli sur soi : une réaction anti-globalisation, anti-inégalités, anti-réformes : identité nationale réaffirmée;
• l'acceptation du changement : un changement générationnel, un désir profond de faire jouer les lignes, un nouvel esprit plus entrepreneurial.
Le vieillissement de la population constitue un paramètre incontournable de l'évolution des quinze, voire des trente ans à venir. Cette tendance influe sur la plupart des autres évolutions de l'économie. C'est pourquoi, il sera abordé de façon transversale lorsqu'on traitera de l'économie productive, des finances publiques, des comportements économiques spécifiques, des résistances au changement…

Source : http://www.strategie.gouv.fr/IMG/pdf/CAE_Prospective2025-avril__3.pdf

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-Dessus B. Pdt, 2001. ***Club « Energie, prospective et débats », Penser l'avenir pour agir aujourd'hui***, Commissariat Général du Plan. Rapport d'activité 2000 Juin 2001, 909 pages.

Principaux enseignements issus des différents travaux effectués :
Les trois études effectuées pour le compte du groupe 1 ont tout d'abord mis en évidence la nécessité de mieux appréhender les déterminants principaux d'évolution de la demande énergétique en dépassant l'analyse habituelle fondée sur une décomposition sectorielle traditionnelle, habitat/tertiaire, industrie, agriculture, transports.

1 - Concepts et nomenclatures nécessaires aux études énergétiques sur très longue période, *Nathalie Glot Sanchez, Enerdata* (groupe 1, financement Commissariat général du Plan, CGP)
L'étude réalisée par ENERDATA montre l'importance à accorder à des analyses du type style de vie, budget temps, cohortes, pour mieux appréhender en termes prospectifs les déterminants de la consommation d'énergie d'une population.
2 - Quel est le coût énergétique de notre alimentation ? *Claire Monot, ECODEV* (groupe 1, financement ECODEV, CNRS)
L'étude d'ECODEV « déterminants de la demande énergétique du développement » a mis en évidence une structure inattendue de la consommation d'énergie finale par « besoin » (alimentation, logement, équipement de la personne, santé, éducation, loisirs). On découvre ainsi que derrière le logement, qui mobilise encore 35 % des consommations, l'alimentation contribue à 30 % des consommations, loin devant la culture et les loisirs (16 %), la santé (7 %) ou l'éducation (5 %).
3 - Les déterminants de la demande énergétique et développement, *Carine Barbier, ECODEV-CIRAD* (groupe 1, financement ECODEV, CNRS)
L'étude ECODEV-CIRAD concernant la prospective à long terme « coût énergétique de l'alimentation » au niveau mondial a confirmé les résultats obtenus pour la France par Ecodev dans son étude « déterminants

de la demande énergétique et développement » : les dépenses énergétiques liées à l'alimentation (cultures, élevage, agro-industrie, transport et conservation des produits alimentaires, cuisson et services de restauration) resteront durablement un poste important, de 25 à 35 % des dépenses d'énergie selon les pays. L'étude a également montré l'influence des modes d'alimentation sur la quantité et la qualité de l'énergie mise en cause. L'étude nomenclature a tenté un premier recensement des concepts et des catégories utilisées par les différentes disciplines des sciences humaines et sociales (économie, sociologie, anthropologie, histoire et géographie) pour exprimer les besoins principaux du développement des sociétés.

4 - Energie décentralisée - Horizons 2020-2050*, Fouzi Benkhelifa et Michel Labrousse, Explicit* (groupe 2, financement CGP)

L'étude « Energies décentralisées » d'EXPLICIT a permis un premier chiffrage des possibilités d'alimentation décentralisée d'électricité à horizon de 50 ans sur la base d'une analyse technico-économique des différentes filières électriques en développement et de l'analyse prospective de la demande d'électricité en France (quantités, courbe de charge). L'étude montre que les perspectives d'alimentation décentralisée d'électricité sont importantes à moyen et long terme et qu'elles risquent fortement de remettre en cause la conception actuelle de distribution d'électricité en France, encore principalement fondée sur le recours à une vingtaine de points sources de très grande puissance (plusieurs GWatts) et le recours systématique à un réseau très haute tension pour acheminer le courant vers les différentes régions concernées. Une partie des résultats de cette étude a servi à alimenter les scénarios de la mission « Etude économique prospective de la filière électrique nucléaire » remise au Premier ministre en juillet 2000.

5 - Influence de la densité d'occupation de l'espace sur les consommations d'énergie, *Jean Coiffart, CEREN*, (groupe 2, financement CGP)

L'étude « densité d'occupation de l'espace et consommation d'énergie » du CEREN a montré les conséquences importantes (hors transport des personnes) de la dispersion de l'habitat sur les consommations d'énergie et permet ainsi de mieux cerner les conséquences de décisions d'urbanisme sur la consommation d'énergie des ménages. Elle met par exemple en relief des différences importantes de consommation d'énergie de chauffage des logements urbains et ruraux : 12,5 MWh/an pour un logement situé dans un pôle urbain (> 200.000 habitants) contre 17,5 MWh/an (40 % de plus) pour un logement rural.

Les deux études engagées par le groupe 3 faisaient suite à deux interrogations issues des travaux effectués en 1999 par le Club énergie prospective et débats. L'étude « sécurité énergétique » de ICE a apporté de nombreux enseignements sur cette notion, traditionnellement restreinte à l'espace national et à la sécurité d'approvisionnement en combustibles et carburants sur le marché international. En élargissant la notion à celle de la sécurité interne (qui comporte les étapes de transformation transport et distribution des énergies) et en s'intéressant à la consommation de l'énergie, l'étude a montré, à partir d'études de cas, l'importance pour la sécurité énergétique de la sécurité interne et de la maîtrise de l'énergie.

6 - Evaluation des émissions de CO2 des filières énergétiques conventionnelles et non conventionnelles de production de carburants à partir de ressources fossiles, *Georgia Plouchart – IFP* (groupe 3, financement CGP)

L'étude engagée par l'IFP sur les émissions de carbone des filières conventionnelles et non conventionnelles de production de carburants à partir de sources fossiles « du puits à la roue » montre que la transformation de combustibles fossiles comme le charbon ou les schistes bitumineux en carburants liquides ou en hydrogène, s'accompagne d'émissions de CO2 nettement supérieures à celles engendrées par le raffinage du brut conventionnel (un rapport 1,5 à 3 selon les filières). Seul le gaz naturel permet d'obtenir ces carburants avec des performances d'émission de CO2 acceptables. Il est ainsi confirmé que l'usage de ressources non conventionnelles pourtant abondantes sera très probablement limité par les émissions de CO2.

7 - La sécurité énergétique, *Bernard Laponche, Hélène Stéphane - ICE, Yves Marignac, Wise* (groupe 3, financement CGP)

Le groupe 3 avait enfin prévu de faire une étude sur le problème du contrôle international du volume de déchets nucléaires à haute activité et très longue durée de vie, « Kyoto des déchets nucléaires ». La préparation du cahier des charges de cette étude et la recherche de partenaires ayant pris plus de temps que prévu, cette étude sera très probablement effectuée en 2001.

8 - Etude de la matrice des interactions eau-énergie, *Xavier Goossens, Jean François Bonnet, Université de Bordeaux* (groupe 6, financement Ecodev, CNRS)

La dernière étude sur la matrice des interactions eau-énergie, engagée par l'Université de Bordeaux pour le compte du groupe 6 avait en fait un double but :

- un premier de nature technique, l'identification des principaux lieux (aussi bien au sens géographique que physique du terme) de couplages entre les problèmes d'eau et d'énergie, et des ordres de grandeurs impliqués dans ces complexes ;
- un deuxième, de nature plus sociologique, celui de fournir des bases chiffrées de discussion entre les deux communautés aux cultures très distinctes (celle de l'eau et celle de l'énergie) qui composent le groupe 6 « eau-énergie ».

Globalement le bilan 2000 des études du Club est donc très significatif, aussi bien au niveau des avancées conceptuelles que du chiffrage des enjeux de nouvelles filières de production ou de la mise à plat des conséquences environnementales du développement de nouvelles technologies. Le contenu de chacune de ces études figure en annexe de ce rapport.

Source : http://www.ietcat.org/BiDigital/docs/Energie,%20plan%202000.pdf

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-DGEMP (Direction générale de l'énergie et des matières premières) / OE (Observatoire de l'énergie), 2008. ***Scénario énergétique de référence DGEMP-OE. Rapport de synthèse***, 20 pages.

Remarques et Conclusion
Par plusieurs aspects (sécurité d'approvisionnement, émissions de CO2, efficacité énergétique, etc.), il est clair que le scénario de référence proposé dans le présent exercice n'est pas celui qui permettrait de satisfaire les objectifs de la politique énergétique française. Ce constat n'est pas surprenant dans la mesure où il signifie qu'il est nécessaire d'engager des politiques et mesures supplémentaires par rapport à celles déjà en place ou décidées.
En particulier, les importations de gaz qu'engendrerait la réalisation de ce scénario s'élèveraient à 66 milliards de m3 en 2020 (59 Mtep) et 78 milliards de m3 en 2030 (70 Mtep), contre 44 milliards de m3 aujourd'hui. Outre les émissions de CO2 qui en découleraient, ce quasi doublement des importations poserait un double problème : sur l'origine géographique du gaz ainsi importé (avec des contrats d'approvisionnement appropriés) et sur les infrastructures (terminaux GNL, gazoducs) qui permettraient de l'acheminer.
Enfin, le scénario de référence est bien entendu loin d'atteindre les objectifs communautaires, tant sur les émissions de CO2 qui ne cessent de croître jusqu'à 2020 et même s'accélèrent ensuite jusqu'à 2030 (du fait des transports et de la production d'électricité), que sur la part d'énergies renouvelables dans le mix énergétique. À cet égard, il apparaît que la part des énergies renouvelables dans la consommation énergétique finale « élargie », au sens du Paquet énergie – climat, s'élèverait à 13,4% en 2020 (contre 23% dans le projet de partage des efforts de la Commission) et 13,7% en 2030, contre 10,3% constaté en 2006.

Source : www.industrie.gouv.fr/energie/prospect/pdf/scenario-2008.pdf

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-Innovation et énergie : recensement et pré-évaluation des think-tanks et des clusters en Europe ... vers une conscience énergétique européenne**,** Eden, Juin 2004 , 60 pages

Quels sont en Europe (hors France) les futurs pôles d'innovation en matière d'énergie ? Ce rapport apporte une première réponse à cette question, en l'abordant sous l'angle de l'identification des systèmes d'innovation à rayonnement européen combinant les aspects think-tank et cluster.
-Les quatorze initiatives étudiées sont réparties de façon homogène sur toute l'Europe sans faire émerger de pays leader. Par ailleurs, aucun acteur ne combine de façon opérationnelle les caractéristiques d'un think-tank et d'un cluster. Seul le think-tank allemand FVS montre des signes d'émergence d'un cluster en son sein ; son évolution est donc à suivre.
-Aucun acteur, qu'il soit de type think tank ou de type cluster, n'émerge aujourd'hui de façon prédominante dans l'écosystème de l'innovation dans l'énergie en Europe. Le think-tank IIASA et les clusters NaREC et Merinova sont les initiatives les plus significatives observées dans le cadre de cette étude.
-Il est fort probable que, à l'instar des initiatives nord-américaines comme The Center for **Smart Energy** dans le Nord-Ouest (application des technologies numériques à l'énergie), **NextEnergy** au Michigan (piles à combustible et autres technologies alternatives) et ACE au Texas (énergies renouvelables), l'on voie émerger en Europe d'ici à 3 à 5 ans un acteur majeur de l'innovation dans l'énergie combinant les aspects cluster régional et think tank européen.

Source : http://www.energy-eden.com/pdf/benchmarking.pdf

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-Laffitte P., Saunier C., 2006. ***Changement climatique et transition énergétique : dépasser la crise,*** Office parlementaire d'évaluation des choix scientifiques et techniques, 204 pages.

Cette étude rappelle l'état et les perspectives du modèle énergétique mondiale et des effets du changement climatique, expose les scénarios envisageables d'ici 2030, analyse les apports de la science et des techniques en vue de faciliter l'indispensable transition énergétique, et propose des solutions politiques pour faciliter cette transition.

Source : http://www.senat.fr/rap/r05-426/r05-4261.pdf

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-Laponche B., 2008. ***Prospective et enjeux énergétiques mondiaux - Un nouveau paradigme,*** Document de travail, Agence Française de Développement, 49 pages.

La poursuite des modes de consommation et des politiques énergétiques actuels conduirait à l'horizon de deux à trois décennies à un doublement de la consommation mondiale. Une telle évolution se heurte à des contraintes majeures : ressources énergétiques, accroissement des prix, risques de conflits, atteintes à l'environnement, risque climatique. Il n'y a pas de développement durable possible avec le système énergétique actuel basé sur un modèle de développement "énergivore" et la hausse "à tout prix" de la production d'énergie.

Le nouveau paradigme énergétique consiste à concevoir le "système énergétique" comme englobant non seulement la fourniture d'énergie mais également les conditions et les techniques de sa consommation afin d'obtenir un "service énergétique" dans des conditions optimales en termes de ressources, de coûts économiques et sociaux et de protection de l'environnement local et global. La maîtrise des consommations d'énergie arrive au premier rang des politiques qu'il faut rapidement mettre en œuvre parce que c'est celle qui possède le plus grand potentiel, qu'elle est applicable dans tous les secteurs et dans tous les pays, qu'elle représente le meilleur instrument de la lutte contre le changement climatique, enfin parce qu'elle permet de ralentir l'épuisement des ressources fossiles, tandis qu'une part croissante de la consommation d'énergie peut être assurée par les énergies renouvelables. Elle constitue en outre un facteur de développement économique par la diminution des dépenses énergétiques, ainsi que par la création de nouvelles activités et d'emplois. C'est un impératif de premier ordre des politiques énergétiques et économiques, notamment dans le secteur des transports, presque exclusivement dépendant du pétrole. Cela s'impose aussi en matière de consommation d'électricité, dont la production est chère et particulièrement vorace en énergie primaire.

Source : http://www.global-chance.org/IMG/pdf/BL-AFD-DT59.pdf

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-Makhijani A., 2006. ***Low-Carbon Diet without Nukes in France (Faibles émissions de dioxyde de carbone sans nucléaire)***An Energy Technology and Policy Case Study on Simultaneous Reduction of Climate Change and Proliferation Risks, Institut for Energy and Environmental Research, Takoma Park, Maryland, 85 pages

Ce rapport montre que dans les prochaines décennies, il est possible, pour la France, de sortir du nucléaire tout en diminuant les émissions de dioxyde de carbone de 40 pour cent. Pour les partisans du nucléaire. La France est souvent présentée comme l'exemple à suivre puisqu'elle produit presque 80 pour cent de son électricité à partir du nucléaire, lequel produit une quantité négligeable de gaz à effet de serre. Le rapport de l'Institute for Energy and Environmental Research (IEER) est le premier à présenter les technologies et la politique énergétique qui permettent de respecter les mêmes choix de mode de vie et les mêmes options économiques qu'une politique énergétique basée sur la poursuite d'une forte production nucléaire et de fortes émissions de carbone, mais sans énergie nucléaire et avec une réduction substantielle des émissions de dioxyde de carbone.

La France peut abandonner progressivement l'énergie nucléaire et parvenir à de plus faibles émissions de dioxyde de carbone. Une nouvelle étude indique que, malgré l'énergie nucléaire, les émissions de gaz à effet de serre de la France sont en augmentation. Le soutien financier à l'industrie du plutonium et la politique pro-nucléaire de la France nuisent à sa sécurité et l'empêchent de réduire ses émissions de carbone

Source : résumé > http://www.ieer.org/reports/energy/france/lowcarbonprfr.pdf
Source : rapport final > http://www.ieer.org/reports/energy/france/lowcarbonreport.pdf

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-OTAM, 1971. ***Scénario de l'inacceptable. Une image de la France en l'an 2000,*** TRP, 163 pages.

Cette analyse (1971), de nature tendancielle, révèle pour 2000 une France traversée par de profonds déséquilibres tant spatiaux que sociaux, renforçant alors la légitimité de l'aménagement du territoire. Dans le cadre du programme d'études relatif à l'élaboration du schéma général d'aménagement de la France, la Délégation à l'Aménagement du Territoire et à l'Action Régionale (DATAR) a confié à l'OTAM (1), l'étude

d'un schéma prospectif de la France à l'horizon 2000. L'objet de cette étude est de préciser les conséquences à long terme des tendances actuelles du développement socio-économique sur l'organisation de l'espace.

Source : http://www.diact.gouv.fr/IMG/File/Scenario-Inacceptable.pdf
Synthèse de 6 pages : http://www.diact.gouv.fr/IMG/File/NL-Scenario-de-linacceptable.pdf

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-SATW, 2006. ***Plan de route Energies renouvelables Suisse Une analyse visant la valorisation des potentiels d'ici 2050***, Académie Suisse des Sciences Techniques, 24 pages.

Un approvisionnement énergétique durable de la Suisse est possible. Il n'est cependant réalisable ni à court terme, ni facilement. Les sources d'énergie renouvelables indigènes peuvent y apporter une contribution décisive. Cette publication de la SATW indique dans quelle mesure cela est possible au vu du potentiel techniquement exploitable. Bien souvent, le facteur contraignant n'est pas tant le potentiel lui-même qu'une rapidité de mise en oeuvre justifiable au niveau économique, en particulier dans le domaine de la rénovation des bâtiments. Un approvisionnement reposant principalement sur des sources indigènes d'énergie renouvelables d'ici 2050 exige une combinaison de la mise en exploitation des potentiels ici indiqués et de la réalisation de la société à 2000 watts déclarée comme objectif stratégique par le Conseil fédéral.

Source : http://www.satw.ch/publikationen/schriften/39_roadmap_f.pdf

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-Sortir du Nucléaire, 2007. ***Nucléaire : comment en sortir ? Étude sur des sorties du nucléaire en 5 ou 10 ans***, 100 pages.

Les principaux enseignements
Cette étude présente deux sorties du nucléaire en 5 et 10 ans. Elle possède deux volets : le premier est un bilan des économies d'électricité réalisables dans les différents secteurs économiques sur les délais impartis. Le second volet propose une offre d'électricité sans nucléaire ainsi que la production combinée d'électricité et de chaleur à partir des énergies alternatives (renouvelables et fossiles). Le plan de sortie du nucléaire est simple : il s'agit de diminuer la consommation d'électricité et simultanément de développer l'utilisation des énergies renouvelables. Les énergies fossiles servent à assurer la transition d'une production d'électricité dont l'origine est à 78 % nucléaire en 2008, vers une production d'électricité principalement issue des énergies renouvelables à terme.
La sortie du nucléaire en 10 ans parvient à une baisse de la consommation d'électricité (fondée sur les économies d'énergie et l'efficacité énergétique) de 30 % par rapport à la consommation actuelle (2006). Les énergies renouvelables produisent les deux tiers de l'électricité et les énergies fossiles le dernier tiers. La production d'électricité est supérieure à la consommation prévue, cela représente 30 TWh 2 supplémentaires.
La sortie du nucléaire en 5 ans se fonde sur une baisse de la consommation d'électricité de 20 %. Les énergies renouvelables produisent 40 % de l'électricité et les énergies fossiles le reste. La production est très légèrement supérieure à la consommation prévue dans ce délai très court, soit 3 TWh. Un tableau de synthèse détaille les potentiels d'économies d'électricité et d'offre d'électricité sans nucléaire à la fin de cette étude (p. 90).
Cette étude tente d'exploiter de nombreuses voies pour augmenter les possibilités de réussite d'une sortie rapide. Les potentiels peuvent donc être adaptés aux circonstances. Faut-il plus d'importations d'électricité ? Moins de centrales au charbon ? Faut-il demander aux industriels de diminuer leur consommation ? Il est possible de concevoir plusieurs types de scénario de sortie selon le degré de mobilisation ou les choix politiques.
Du fait de la proportion considérable d'électricité nucléaire en France, le bouclage de la sortie en 5 ans est complexe. En effet, si sur ce délai les économies d'énergie dégagées sur la production électrique dépassent 160 TWh et l'offre des énergies renouvelables 155 TWh, les énergies fossiles fournissent aussi un effort non négligeable (227 TWh) pour réussir la transition de sortie du nucléaire. La réussite de la sortie en 5 ans pourrait aussi être assurée par des importations conséquentes de courant, ce qui représente une option incertaine. De plus, plusieurs potentiels sont présentés sans marge de retard, en particulier la construction de nouvelles centrales fonctionnant aux énergies fossiles ou la mise en oeuvre des économies d'énergie.
Pour pallier les quantités significatives de gaz carbonique émises dans le cas de la sortie en
5 ans, il est impératif de mettre en place des mesures fortes dans les domaines des transports, du bâtiment et de l'agriculture. Il faut aussi faire appel aux mécanismes du Protocole de Kyoto pour obtenir des permis d'émission de gaz à effet de serre. Nous proposons une dizaine de mesures concrètes dans cette étude. Les émissions de CO2 sont nettement plus faibles dans le cadre de la sortie en 10 ans car le charbon est

abandonné et la production d'électricité avec les énergies fossiles se fait en majorité avec le gaz. A noter que la production des énergies renouvelables dépasse largement celle des énergies fossiles sur ce même délai.

Source rapport 100 pages : http://www.sortirdunucleaire.org/sinformer/brochures/sorties5ou10ans/ETUDE-SORTIES-web.pdf
Source résumé 28 pages : http://www.sortirdunucleaire.org/sinformer/brochures/sorties5ou10ans/ETUDE-SORTIES-web.pdf

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-SYROTA Jean (sous la dir. de), 2007. *Les perspectives énergétiques de la France à l'horizon 2020-2050. Rapport de synthèse*, Paris, Centre d'analyse stratégique (CAS).

Le rapport *Perspectives énergétiques de la France à l'horizon 2020-2050* se compose de deux volumes. Le premier volume présente la synthèse des travaux menés par la Commission *Énergie*, le second reprend l'intégralité des rapports des cinq groupes de travail thématiques. Dans le contexte de réchauffement climatique, une politique nouvelle par son ampleur est indispensable et doit s'inscrire dans le cadre de celle de l'Union européenne sur la réduction des émissions à l'horizon 2050 et le partage équitable des efforts entre les États membres. La Commission *Énergie* a recueilli les avis des différents acteurs concernés : élus, partenaires sociaux, administrations nationales et européennes, opérateurs et industriels, associations de consommateurs, organismes de recherche.

-Source du Volume 01, 367 pages:
http://www.strategie.gouv.fr/IMG/pdf/Rapport_Energie_synthese_VOLUME_1.pdf
-Source - Rapport d'orientation, 131 pages :
http://www.strategie.gouv.fr/IMG/pdf/ENERGIE_Rapp_ORIENT_Synth_06_04_07.pdf
0-Source – Introduction : http://www.strategie.gouv.fr/IMG/pdf/Rapport_Energie_INTRO.pdf
1-Source – Les enseignements du passé : en matière de prospective énergétique, notamment du point de vue des effets des prix et des politiques publiques, ainsi que des comportements des consommateur, sous la présidence de Michèle PAPPALARDO :
http://www.strategie.gouv.fr/IMG/pdf/Rapport_Energie_PARTIE1.pdf

2-Source – Les perspectives offre/demande dans le monde et leurs conséquences géopolitiques (« peak oil », réserves en sources d'énergie renouvelables ou non,...) : sous la présidence d'Olivier APPERT :
http://www.strategie.gouv.fr/IMG/pdf/Rapport_Energie_PARTIE2.pdf

3-Source – Les évolutions technologiques dans les domaines du nucléaire, de l'éolien, du solaire, du charbon propre, de l'habitat..., avec un échéancier de mise en oeuvre et les coûts associés : sous la présidence d'Alain BUGAT.: http://www.strategie.gouv.fr/IMG/pdf/Rapport_Energie_PARTIE3.pdf
4-Source – Les orientations européennes à prendre en compte par la France dans l'Union européenne : sous la présidence d'André MERLIN: http://www.strategie.gouv.fr/IMG/pdf/Rapport_Energie_PARTIE4.pdf

5-Source – Les scénarios énergétiques: leur modélisation sous la présidence de Thierry CHAMBOLLE :
http://www.strategie.gouv.fr/IMG/pdf/Rapport_Energie_PARTIE5.pdf

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-UE, 2008. ***Énergie, technologie et politique climatique : les perspectives mondiales à l'horizon 2030,*** 5 pages.

Source : http://ec.europa.eu/research/energy/pdf/key_messages_fr.pdf

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Economie et société *low carbon*

-Barbier E. B., 2009. ***A Global Green New Deal Final Report,*** Department of Economics and Trade Branch, Division of Technology, Industry and Economics, United Nations Environment Programme, 155 pages.

The multiple crises threatening the world economy today demand the same kind of initiative as shown by Roosevelt's New Deal in the 1930s, but at the global scale and embracing a wider vision. The right mix of policy actions can stimulate recovery and at the same time improve the sustainability of the world economy. If these actions are adopted, over the next few years they will create millions of jobs, improve the livelihoods of the world's poor and channel investments into dynamic economic sectors. A "Global Green New Deal" (GGND) refers to such a timely mix of polices.

An expanded vision is critical to the lasting success of a world economic recovery. Reviving growth, ensuring financial stability and creating jobs should be essential objectives. But unless new policy initiatives also address other global challenges, such as reducing carbon dependency, protecting ecosystems and water resources and alleviating poverty, their impact on averting future crises will be short-lived. Without this expanded vision, restarting the world economy today will do little to address the imminent threats posed by climate change, energy insecurity, growing freshwater scarcity, deteriorating ecosystems, and above all, worsening global poverty. To the contrary, it is necessary to reduce carbon dependency and ecological scarcity not just because of environmental concerns but because this is the correct and only way to revitalize the economy on a more sustained basis.

Source : http://www.unep.org/greeneconomy/docs/GGND_Final%20Report.pdf

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-Bleischwitz R., Giljum S., Kuhndt M., Schmidt-Bleek F., 2009. ***Eco-innovation - Putting the EU on the path to a resource and energy efficient economy,*** Wuppertal 2009, Wuppertal Spezial no. 38, 94 pages.

The inefficient resource use at a time of growing demand is leading to increasing environmental pressure and resources scarcity that will affect Europe and other parts of the world over the next years and decades. Prices for global commodities like oil, raw materials and wheat have been increasing over the past five years though the current financial crisis has temporarily led to lowering demand for natural resources. Achieving resource efficiency and a low carbon society are key challenges for the future of EU's economy, its industrial and service sector, and its citizens. Eco-innovation - putting the EU on the path to a resource and energy efficient economy - can be seen as a key to enhancing Europe's strategic position on world markets of tomorrow. In this regard, the current bail out of the financial crisis ought to be seen as a starting point for the build up of eco-innovation and eco-industries in the EU. The objective of this study is to support the European Parliament's ITRE Committee in its work on the EU's industrial and energy policy and to give advice on the following issues: Why is the issue of resource scarcity back on the agenda? What are the strategic conclusions for the EU? What can the EU expect from eco-innovation in a large range of industrial sectors? Are existing measures meeting the EU aims and expectations, and what new policy initiatives should be set forward?

Source : http://www.wupperinst.org/en/publications/entwd/uploads/tx_wibeitrag/ws38.pdf

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-Commission on Oil Independence, *Making Sweden an OIL-FREE Society,* 21 June 2006, Stockhlom, 51 pages.

In December 2005, the Government appointed a commission to draw up a comprehensive programme to reduce Sweden's dependence on oil. There were several reasons for this. The price of oil affects Sweden's growth and employment. Oil still plays a major role for peace and security throughout the world. There is a great potential for Swedish raw materials as alternatives to oil. But, above all, the extensive burning of fossil fuels threatens the living conditions of future generations. Climate change is a fact which we politicians must face.
Broad and long-term political efforts are needed. Interest in the Commission's work is and has been enormous. Many people took part in the hearings which were the start of the Commission's work. In contacts with me or other members of the Commission, very many more took part by presenting proposals, criticising, and analysing problems and solutions.

Since the objective of ridding ourselves of our dependence on oil by the year 2020 is bold, and the issue embraces the whole of society, it was essential that the Commission should have a broad base. Experts from industry, agriculture and forestry, science – and special experts on energy efficiency and district heating – met for the discussions we had. In this way, the Commission was forced to examine conflicts of goals and different aspects of practically all the issues.
The result is a consensus report. No member of the Commission gained a full hearing for his/her standpoints and views. But all were prepared to look for compromises, weigh up the pros and cons and accept not fully achieving their own ideal position on each individual issue.
This openness meant that we were able to agree on the best common denominator in the task we faced: to mark out a path to strengthen Sweden's competitiveness and take a substantial step towards reducing emissions of greenhouse gases. This greatly pleases me.
On only one point were we not able to agree. The question as to whether protection is needed for domestic and EU-produced ethanol divided the group. On the one hand, Christian Azar stated that Sweden should be proactive for the abolition of the European tariff protection of its own production of ethanol. This is a respectable position. On the other hand, most of the members of the Commission supported the view that protection and stimulation of our own ethanol production is needed during the initial phase.
Apart from this, the Commission is in total agreement on the contents of the report. I hope this spirit can continue to characterise discussions about our dependence on oil. The next stage will now follow. The changes required will not be realised solely by political decisions, nor by market forces in industry alone, nor by individual farmers and forest farmers who see future opportunities for profit. Not until all the positive forces in society aim for the same goals can Sweden achieve independence from oil. In this work, I hope the Commission's report will be an important contribution. Göran Persson

Source : http://www.sweden.gov.se/content/1/c6/06/70/96/7f04f437.pdf

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-Curtin J., 2006. ***Towards an Oil Free Economy in Ireland: Lessons from the Swedish Commission for Oil Independence Report*****,** IEA Briefing Paper 10-8-06, 14 pages.

Source :
http://www.iiea.com/images/managed/events_attachments/Towards%20an%20Oil%20Free%20Economy%20in%20Ireland-1.pdf

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-INREB, 2005. ***Towards a low-carbon society – a mission to Canada and USA,*** DTI Global Watch Mission, 180 pages.

The INREB Faraday Partnership's overall aim is to instigate a programme of activity that will help to deliver a low-carbon society in the UK. This is based on a minimum 60% reduction in carbon dioxide (CO2) emissions in buildings from the 1997 Royal Commission on Environmental Pollution (RCEP) base. To achieve this aim, two interrelated approaches are promoted:
• An integrated approach to energy conservation to reduce demand in buildings
• Utilising new and renewable energy technology to meet that reduced demand
INREB was therefore well placed to coordinate a DTI Global Watch Mission to investigate the Canadian framework for large-scale carbon reduction in the built environment. This was the focus of an east coast mission team 'A'. In addition, a west coast mission team 'B' investigated carbon reduction in buildings and communities in Canada. A particular focus for this team was the Leadership in Energy and Environmental Design (LEED) green building performance rating system developed in the USA. It was for this reason that mission team 'B' also visited the USA to review some LEED accredited buildings in the USA as well as Canada. So, two mission teams visited Toronto and Ottawa (Mission A) and Vancouver and Seattle (Mission B) in June 2005, and their findings are summarised under three key headings:
• Framework for a low-carbon society
• People and places – large-scale initiatives
• Sustainable building projects Framework for a low-carbon society

Source :
http://www.sustainablecommunities.fcm.ca/files/program_docs/2006_uk_mission/toward_a_low_carbon_society-canada-usa_mission.pdf

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-Johnson V., Simms A., 2008. ***Transition to a post-carbon society,*** nef, 17 pages.

The twin issues of climate change and peak oil point society towards a near future in which we will have to learn to live with far, far fewer fossil fuel resources. This briefing explains why that is the case, and looks at the first steps already being taken in rich and poor countries alike to make the transition to post-carbon societies.

Source :
http://www.climatecommunity.org/documents/Paper6-Transitiontoapost-carbonsociety_000.pdf

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-Mc Kinsey & Company, 2009. ***Pathways to a low-carbon economy, version 2 of the Global Greenhouse Gas Abatement Cost Curve,*** 192 pages.

Whilst leaders in many nations discuss ambitious targets for reducing emissions of greenhouse gases (GHGs), there is also an intense debate underway regarding the technical and economic feasibility of different target levels, what emission reduction opportunities should be pursued, and the costs of different options for meeting the targets.
To provide a quantitative basis for such discussions, McKinsey & Company, supported by ten leading global companies and organisations – The Carbon Trust, ClimateWorks, Enel, Entergy, Holcim, Honeywell, Shell, Vattenfall, Volvo, WWF – has assessed more than 200 GHG abatement opportunities across 10 major sectors and 21 world regions between now and 2030. The results comprise an in-depth evaluation of the potential, costs and investment required for each of those measures.
Our analysis finds that:
-The potential exists to reduce GHG emissions by just enough to stay on track until 2030 to contain global warming below 2 degrees Celsius.
-Opportunities can be grouped into three categories of technical measures: energy efficiency, low–carbon energy supply, and terrestrial carbon.
-Capturing all the potential will be a major challenge: it will require change on a massive scale, strong global cross-sectoral action and commitment, and a strong policy framework.
-While the costs and investments seem manageable at a global level, they are likely to be challenging for individual sectors.
-Delays in action of even 10 years would mean missing the 2 degrees Celsius target.
This report builds on our first global study published in January 2007 and subsequent national studies. It includes an updated assessment of the development of low–carbon technologies, of macro–economic trends and a more detailed understanding of abatement potential in different regions and industries. Furthermore it assesses investment and financing requirements and incorporates implementation scenarios for a more dynamic understanding of how abatement reductions could unfold.

Source : http://assets.wwf.org.br/downloads/pathwaystolowcarboneconomy_fullreport.pdf

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-**Mitchell C., Woodman B.,** 2004. ***The Burning Question - Is the UK on course for a low-carbon economy?*** 90 pages.

The government has a target to cut carbon emissions by twenty per cent by 2010 and by sixty per cent by 2050 in its Climate Change Programme. But carbon emissions have risen and, if things don't change radically, the government will miss its target.This report critically examines the government's targets and assesses the specific policies to increase energy efficiency and cut emissions. Catherine Mitchell and Bridget Woodman offer an overview of the issues that the government must address and recommend practical policies to put the Climate Change Programme back on course.

Source :
http://www.ippr.org.uk/members/download.asp?f=%2Fecomm%2Ffiles%2FThe_Burning_Question_full.pdf

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-New economic foundation, 2008. ***Triple Crunch: Joined-up solutions to financial chaos, oil decline and climate change to transform the economy*****,** 48 pages.

The global economy is facing a 'triple crunch'. It is a combination of a credit-fuelled financial crisis, accelerating climate change and an encroaching peak in oil production. These three overlapping events threaten to develop into a perfect storm, with potential consequences not seen since the Great Depression.

As this pamphlet goes to press the global financial system is in meltdown, the consequences of which are, as yet, unknown. The system may well save itself this time. But unless fundamental changes are made to the global economy the resurrection will only be temporary. And the consequences of the next crisis will be beyond our control. We are at a unique historical moment. Grasp it, and we could rebuild a more stable, equitable system able to withstand the coming crises.

This pamphlet builds on the proposals set out in A Green New Deal to begin to add to the range of progressive solutions to the challenges we collectively face. It shows how the opportunities presented by the 'triple crunch' could be used to transform the economy to deliver stability, social progress and true environmental sustainability.

Source : http://www.neweconomics.org/gen/uploads/z1wemlvdcu1ziq55frswd1rw04112008171254.pdf

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-Simms A., Pettifor A., Lucas C., Secrett C., Hines C., Legett J., Elliott L., Murphy R., Juniper T., 2008. ***A Green New Deal: Joined-up policies to solve the triple crunch of the credit crisis, climate change and high oil prices,*** 48 pages.

The global economy is facing a 'triple crunch': a combination of a credit-fuelled financial crisis, accelerating climate change and soaring energy prices underpinned by encroaching peak oil. It is increasingly clear that these three overlapping events threaten to develop into a perfect storm, the like of which has not been seen since the Great Depression, with potentially devastating consequences.

The Green New Deal Group, drawing inspiration from the tone of President Roosevelt's comprehensive response to the Great Depression, propose a modernised version, a 'Green New Deal' designed to power a renewables revolution, create thousands of green-collar jobs and rein in the distorting power of the finance sector while making more low-cost capital available for pressing priorities.

The most serious global crisis since the Great Depression calls for serious reform the like of which has not, yet, been considered by politicians. This entails re-regulating finance and taxation plus a huge transformational programme aimed at substantially reducing the use of fossil fuels and, in the process, tackling the unemployment and decline in demand caused by the credit crunch. It involves policies and new funding mechanisms that will reduce emissions and allow us to cope better with the coming energy shortages caused by peak oil.

Source : http://www.neweconomics.org/gen/uploads/2ajogu45c1id4w55tofmpy5520072008172656.pdf

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-UK and Japan joint research project "Low-Carbon Society Scenarios Towards 2050"

-Center for Global Environmental Research, 2006. ***Developing Visions for a Low Carbon Society through Sustainable Development,*** The first worshop of the Japan-UK Joint Research Project, 13-16 juin 2006, Tokyo, 106 pages.

The first workshop produced an analysis of the various models and modelling techniques that are being used internationally. This has provided a strong base to build on in assessing the policies and measures that can act as drivers in making a transition to a low-carbon society. A definition for a low-carbon society was proposed during this workshop, alongside a common understanding of the necessity for low-carbon societies and early action to choose low-carbon pathways.
One concrete outcome of the first workshop was a collaborative international modelling project. This innovative process, with strong developing country participation, emphasised long-term deep reductions in CO2 and other GHGs. Comparative model runs based on common scenarios have been performed by twelve national teams. For example, a key conclusion from the Japanese 2050 Low-Carbon Society Research was that Japan has the technological potential to reduce its CO2 emission by 70% compared to the 1990 level, while satisfying the expected demand for energy services in 2050. This included reductions in both final energy demands and primary energy supply, and incorporated the residential sector, land-use planning and transportation.

Source : http://www-cger.nies.go.jp/publication/I071/I071.pdf

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-Council for Science and Technology Policy, 2008. ***Low Carbon Technology Plan,*** Japon, 21 pages.

This plan covers the following four aspects:
1) A full review of GHG emission reduction technologies available from the country;
2) Technology deployment measures and the necessary institutional reform with consideration to the supply and demand of energy and the viewpoint and behaviour of consumers;
3) The potential of satisfying both economic development and emission reduction in developing countries based on the transfer and deployment of innovative technologies from Japan;
4) The necessity of international financial support to underwrite the additional cost of reducing GHG emissions and realizing the leadership of our nation through proactive international cooperation.

Source : http://www8.cao.go.jp/cstp/english/doc/low_carbon_tec_plan/low_carbon_tech_plan.pdf

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-DEFRA, 2007. ***Achieving a Sustainable Low-Carbon Society*** - Symposium and Workshop, 13-15 June 2007, London, UK, The second workshop of the Japan-UK Joint Research Project, 76 pages.

In designing the second workshop a greater focus was placed on the implementation of policies and measures to achieve low-carbon societies. In order to explore the feasibility of different approaches in achieving low-carbon societies, our objectives for the second workshop were:
1. To demonstrate and raise awareness of the benefits of transitioning to a low-carbon society through sustainable development:
a. Demonstrating that a low-carbon society can be consistent with policies relating to the environment, economy, development, access to energy and energy security;
b. Involving a wider range of stakeholders (including business leaders, policymakers, academics and NGOs) to assist with raising awareness of the low-carbon society concept and disseminating low-carbon society information, and to provide expert input on the practicalities of transitioning to a low-carbon society; and
c. Sharing expertise and further building analytical capacity relating to low-carbon society visions and modelling.
2. To develop recommendations on how to close the gap between the business-as-usual and low-carbon society scenarios:
a. Identifying feasible contributions that large sectors could make in achieving a low-carbon society;
b. Exploring what low-carbon cities may look like and showcasing existing examples; and
c. Drafting policy options to achieve a low-carbon society with reference to timeframes and the need for swift action.
3. To develop the framework for a map of low-carbon society activities.
In addition to this it was decided during the design phase of the second workshop that it should address a wider range of Low-Carbon Society scenarios which would focus on the similarities and differences between them. It was also decided that the second workshop should be more outcome orientated and should address a broader stakeholder engagement, including leaders from business.

Source : http://2050.nies.go.jp/3rdLCSWS/1st_2ndWS/0706LCSFinalReport.pdf

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-Japanese Government, 2008. ***Action Plan for Achieving a Low-carbon Society***, Global Warming Prevention Headquarters, 35 pages.

This Action Plan sets out the specific measures for implementing each of the policy points set out in the Prime Minister's speech and the proposals made by the Council on the Global Warming Issue. The measures contained in this Action Plan are to be steadily enforced, and followed up with checks at regular intervals on the status of efforts toward bringing about a low-carbon society.

Source : http://www.kantei.go.jp/foreign/policy/ondanka/final080729.pdf

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-National Institute for Environmental Studies (NIES), Kyoto University, Ritsumeikan University, Mizuho Information and Research Institute, 2008. ***Japan Scenarios and Actions towards Low-Carbon Societies - "2050 Japan Low-Carbon Society"*** - Global Environmental Research Fund (GERF/S-3-1)
Japan-UK Joint Research Project "a Sustainable Low-Carbon Society (LCS)", 74 pages.

This study analyses the possibility of achieving a LCS in Japan, where CO2 emissions, one of the major greenhouse drivers, would undergo a 70% reduction by 2050 below the 1990 level. Transformation in social, economic and technological activities is expected during the first half of the century. The range of such

transformation varies widely. It is necessary to make preparations for the desired socioeconomic changes to achieve LCS.
Assuming that such a degree of socioeconomic change is possible, the back-casting method was adopted in this study to examine the strategies for achieving the LCS. Some of the key aspects of this method are shown in Fig. 1. Among the most important steps of this process we could highlight the following:
1) to envision the direction of future Japanese socioeconomic structure towards 2050 within a certain range (for instance, Scenario A: active, quick-changing, and technology oriented, and Scenario B: calmer, slower, and nature oriented) and to describe the characteristics of those two types of societies qualitatively through brainstorming by experts (narrative version),
2) to quantify behavior of people and households (how people spend time, what services will be needed), design of city and transportation (what kinds of city and houses people live in, how people travel), and industrial structure (estimation of the structural changes by a multi-sector computable general equilibrium model) for each scenario, and to estimate energy-service demand for each scenario (for instance, the volume of cooling [calories], hot water supply [liters], crude steel production [tons], and transportation demand [ton-km, passenger-km]),
3) to calculate energy services demand, while satisfying the CO2 emission reduction target that supports the estimated socioeconomic activity in each scenario; to explore the appropriate combination of energy services demand, end-use energy technology (air conditioner, thermal insulation, boiler, steal plant, hybrid car, etc.), types of energy supply and energy supply technologies, based on the consideration of the available volume of energy supply (shown as (5) in Fig. 1), its cost-efficiency and its political feasibility; to identify the types of energy demand and supply technologies as well as their shares, and finally,
4) to quantify the primary and secondary energy demands and the amount of resulting CO2 emissions.

Source : http://2050.nies.go.jp/material/2050_LCS_Scenarios_Actions_English_080715.pdf

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-WWF, ippr, RSPB, 2007. ***80% Challenge: Delivering a low-carbon UK***, 28 pages

In this work, ippr, WWF and the Royal Society for the Protection of Birds (RSPB) set out to investigate whether a target of 80% can be achieved in the UK by domestic efforts alone and what the costs of doing so would be. We employed two approaches – the MARKAL-MACRO model, used by the government for the 2007 Energy White Paper, and a model developed by Professor Dennis Anderson at Imperial College, employed for the Stern Review on the economics of climate change.
We followed the same assumptions and approaches used by government, but added some constraints that we consider environmentally essential. Unlike the government, we included emissions from international aviation, with a multiplier to allow for non-carbon dioxide effects, in our targets and models. This clearly made our approach much more challenging – however, we believe it is indefensible to exclude this large and rapidly growing source of emissions from UK targets.We examined the implications of excluding new nuclear electricity generation and placed limits both on the use of biofuels and wind.
The key conclusion is that it is feasible to reduce the UK's emissions by 80% by 2050, and at costs that are not prohibitive.

Source : http://www.ippr.org.uk/members/download.asp?f=%2Fecomm%2Ffiles%2F80_challenge.pdf

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FONDDRI, *"Scénarios sous contrainte carbone - quels enjeux industriels ?",* Programme de la Fondation pour le développement durable et les relations internationales.

La préparation du programme de recherche « Scénarios sous contrainte carbone » résulte d'une collaboration entre Entreprises pour l'Environnement (Epe) et l'Institut du développement durable et des relations internationales (IDDRI) fin 2004. La Fondation, avec la participation active de groupes présents sur le marché (énergie, acier, ciment, etc.) mobilise trois équipes de recherche (Cired, Lepii-EPE et Enerdata) et a permis, par la mise en cohérence d'un modèle d'équilibre général récursif (IMACLIM R) et d'un modèle d'équilibre partiel riche en informations technologiques et énergétiques (Poles), de réaliser à l'horizon 2050 un scénario de référence (contrainte carbone faible) et un scénario dit « facteur 4 » sous très forte contrainte carbone.

Les résultats de ces scénarios sont exposés et discutés lors des points d'étape de l'étude, mettant l'accent sur les conséquences (facteurs d'activité), les enjeux pour l'industrie et la problématique des transitions.

- Premier point d'étape, 4 avril 2006

- Deuxième point d'étape, 2 mai 2007

Les rapports du projet "Scénarios sous contrainte carbone"

- le résumé pour les décideurs industriels *Scénarios de transition vers un monde économe en carbone en 2050 : quels enjeux pour l'industrie?*

- rapport complet de l'étude *Scénarios sous contrainte carbone* 2008, 92 pages

Le rapport final présente les résultats des scénarios obtenus tout au long du projet, il ne donne donc qu'une synthèse partielle des travaux réalisés et des échanges nourris par ce projet de recherche.
Dans un premier temps il reprend intégralement le rapport d'étape d'avril 2007, qui regroupait les résultats obtenus pour la projection d'un scénario de référence et d'un premier scénario de réduction des émissions de CO_2 visant à stabiliser sa concentration à 450 ppm à la fin du 21^{e} siècle.

La seconde partie du rapport reprend ensuite intégralement le second rapport d'étape produit en septembre 2008. Suite aux premières projections, il a été convenu d'explorer la simulation d'un scénario « non-mimétique », prenant en compte des bifurcations ou mutations importantes sur les styles de développement et d'organisation spatiale.

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-MIES (Mission interministérielle de l'effet de serre), 2002. *Que serait une société sobre en carbone ? Aperçus de programmes et réalisations à l'étranger (Allemagne, Pays-Bas, Royaume-Uni, Suisse et Islande)*, 2002, 127 pages.

Pour parvenir à une société sobre en carbone à l'horizon 2050, plusieurs pays ont proposé des objectifs ambitieux de réduction des émissions de CO2, assortis de moyens (politiques et mesures) dans le cadre de scénarios. C'est un panorama de ces travaux de simulation, objet de commandes officielles, que propose ce document, afin d'éclairer et de nourrir le débat français. Les points communs en sont soulignés, ainsi que les originalités présentées par tel ou tel pays. La plupart des études analysées s'accordent à reconnaître qu'une réduction ambitieuse des émissions de CO2 (e 60 % à 80 %) est technologiquement faisable pour des coûts économiques limités.

Source : http://www.effet-de-serre.gouv.fr/images/documents/St_sobre.pdf

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-Scénario négaWatt 2006 pour un avenir énergétique sobre, efficace et renouvelable
Document de synthèse, Paris, 16 décembre 2005, 15 pages

L'association négaWatt : une démarche, un scénario, des propositions concrètes sur l'énergie.
Les modèles énergétiques restent fondés sur un dogme réputé intangible : il faut produire toujours plus pour consommer toujours plus. Pourtant, il est urgent de rompre avec la croissance immodérée de nos consommations, de partager nos ressources de façon équitable et de contribuer à la solidarité entre les hommes. Si nous n'agissons pas, une vraie crise de l'énergie est devant nous : pénuries des ressources (pétrole, gaz, mais aussi d'uranium), risques environnementaux majeurs, conflits internationaux et profondes inégalités.

Source : http://www.negawatt.org/telechargement/Scenario%20nW2006%20Synthese%20v1.0.2.pdf

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Climat / Territoires / Adaptation au changement climatique

-Baer P. Mastrandrea M., 2006. ***High Stakes: Designing emissions pathways to reduce the risk of dangerous climate change,*** 37 pages.

This report, commissioned by ippr, will outline precisely how large and how fast cuts in greenhouse gas emissions will need to be if we are to have a high chance of avoiding dangerous climate change. It features fresh quantitative analysis of the relationships between global greenhouse gas emissions trajectories, atmospheric greenhouse gas concentrations, and temperature changes.

Source : http://www.ippr.org.uk/publicationsandreports/publication.asp?id=501

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-California Publics Utilities Commission, 2008. ***California Long Term Energy Efficiency Strategic Plan,*** 110 pages.The California Public Utilities Commission (CPUC) adopted California's first Long Term Energy Efficiency Strategic Plan on September 18th, 2008, as a single roadmap to achieve maximum energy savings across all major groups and sectors in California. This comprehensive Plan for 2009 to 2020 is the state's first integrated framework of goals and strategies for saving energy, covering government, utility and private sector actions. It holds energy efficiency to its role as the highest priority resource in meeting California's energy needs.
The Long Term Energy Efficiency Strategic Plan was developed by a consensus, stakeholder-driven process. Over 500 individuals and organizations across the state and nationally participated and provided input, through more than 40 public meetings and workshops. The Plan emphasizes four Big Bold strategies as cornerstones for significant energy-savings with widespread benefit for all Californians. It sets the foundation for transforming energy patterns to make energy efficiency of way of life and "business as usual" in our California and also provides the leadership to change how buildings will be built nationally and in China and India.
The Plan advances a solid framework that incorporates energy efficiency into the standard for operating in California—for utilities, businesses, and consumers.
It includes four "Big Bold strategies" strategies for significant energy-savings:
* All new residential construction in California will be zero net energy by 2020:
* All new commercial construction in California will be zero net energy by 2030
* The Heating, Ventilation, and Air Conditioning (HVAC) industry will be reshaped to ensure optimal equipment performance; and
* All eligible low-income homes will be energy-efficient by 2020

Source: http://www.californiaenergyefficiency.com/docs/EEStrategicPlan.pdf

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-**FAO, *Climate Change adaptation and Mitigation in the Food and Agriculture Sector,*** technical Background Document from the Expert Consultation held on 5 to 7 march 2008, Rome, 17 pages.

Maintaining food security in a changing climate
Many countries worldwide are facing food crises due to conflict and disasters, while food security is being adversely affected by unprecedented price hikes for basic food, driven by historically low food stocks, high oil prices and growing demand for agro-fuels, and droughts and floods linked to climate change. High international cereal prices have already sparked food riots in several countries. In addition, rural people (who feed the cities) are now, for the first time, less numerous than city dwellers and developing countries are becoming major emitters of greenhouse gases. Many traditional equilibriums are changing, such as those between food crops and energy crops and cultivated lands and rangelands, as is the nature of conflicts in general. These changing equilibriums are, and will be, affected by changing climate, resulting in changed and additional vulnerability patterns.
The Intergovernmental Panel on Climate Change (IPCC) predicts that during the next decades, billions of people, particularly those in developing countries, will face changes in rainfall patterns that will contribute to severe water shortages or flooding, and rising temperatures that will cause shifts in crop growing seasons. This will increase food shortages and distribution of disease vectors, putting populations at greater health and life risks. The predicted temperature rise of 1 to 2.5o C by 2030 will have serious effects, including reduced crop yield in tropical areas. The impact of a single climate-, water- or weather-related disaster can wipe out years of gains in economic development. Climate change will result in additional food insecurities, particularly for the resource poor in developing countries who cannot meet their food requirements through market access.

Communities must protect themselves against the possibility of food-shortage emergencies through appropriate use of resources in order to preserve livelihoods as well as lives and property. It is imperative to identify and institutionalize mechanisms that enable the most vulnerable to cope with climate change impacts. This requires collaborative thinking and responses to the issues generated by the interaction of food security, climate change and sustainable development.

Source: ftp://ftp.fao.org/docrep/fao/meeting/013/ai782e.pdf

-Handley J., Carter J., 2006. ***Climate Change in the urban environment,*** Draft final report to the National Steering Group, Centre for Urban and regional ecology, School of Environment and Development, Humanities Building – Bridgeford Street University of Manchester, 97 pages.

This research is about the vulnerability of towns and cities to climate change and the development of adaptation strategies for climate change in the urban environment. It has been carried out within the EPSRC/UKCIP programme on Building Knowledge for a Changing Climate (BKCC) in which research consortia, working with appropriate stakeholders, have undertaken studies of the long term impacts of climate change on the built environment, transport and utilities. Adaptation has been defined as adjustment in ecological, social or economic systems in response to actual or expected climatic stimuli and their effects or impacts (Burton et al, 2001). Adaptation to climate change involves:
• Changes in processes, practices, or structures to moderate damage or realise opportunities;
• Adjustments to reduce the vulnerability of communities, regions or activities.

Source :
http://www.sed.manchester.ac.uk/research/cure/downloads/asccue_final_report_national_steering_group.pdf

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-Hulme M., Jenkins G.J., Lu X., Turnpenny J.R., Mitchell T.D., Jones R.G., Lowe J., Murphy J.M., Hassell D., Boorman P., McDonald R. and Hill S., 2002. ***Climate Change Scenarios for the United Kingdom: The UKCIP02 Scientific Report,*** Tyndall Centre for Climate Change Research, School of Environmental Sciences, University of East Anglia, Norwich, UK. 120pages.

This report presents a set of four scenarios of future climate change for the UK based on our current understanding of the science of climate change. They have been commissioned and funded by the Department for Environment, Food and Rural Affairs for the UK Climate Impacts Programme (UKCIP). The climate change scenarios (known as UKCIP02) provide a common starting point for assessing climate change vulnerability, impacts and adaptation in the UK. The scenarios are designed to be used in conjunction with other UKCIP reports and products.
The UKCIP02 scenarios represent an advance in our description of future UK climates compared to the scenarios published for UKCIP in 1998. This is because they are based on new global emissions scenarios published in 2000 by the Intergovernmental Panel on Climate Change (IPCC) in their Special Report on Emissions Scenarios, and because they are based on a series of climate modelling experiments completed by the Hadley Centre using their most recently developed models. The scenarios describe four alternative future climates for the UK labelled, respectively, Low Emissions, Medium-Low Emissions, Medium-High Emissions and High Emissions of future climates for the 2020's, 2050's and 2080's at a resolution of 50 km2.. A new 5 km observed monthly climate data set for the UK for the period 1961 to 2000 has also been prepared.
No probabilities can be attached to these four climate futures – in line with the IPCC, we do not suggest that one is more likely than another. While they represent a wide range of possible future climates, the UKCIP02 scenarios do not capture the entire range of future possibilities.

Source résumé : http://www.ukcip.org.uk/images/stories/Pub_pdfs/UKCIP02_briefing.pdf
Source, rapport complet : http://www.ukcip.org.uk/images/stories/Pub_pdfs/UKCIP02_tech.pdf

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-Jenkins, G.J., Perry, M.C., and Prior, M.J. 2008**.** ***The climate of the United Kingdom and recent trends.*** Met Office Hadley Centre, Exeter, UK, 121 pages.

Scenarios of climate change for the UK have been published by the United Kingdom Climate Impacts Programme (UKCIP) in 1998 (Hulme & Jenkins, 1998) and 2002 (Hulme et al., 2002), and in each case the accompanying Scientific Reports have contained an early chapter which discussed observations of global and UK climate trends, to provide an historical context for the future climate change projections. These have

been welcomed by users, who have requested a similar feature as part of the report accompanying the next set of scenarios, UKCP09, planned for launch in late 2008, and these are shown in Section 1 of this report.

In addition, following the success of A handbook of climate trends across Scotland published by SNIFFER (Barnett et al., 2006), its was suggested that similar detailed graphics of climatology and trends be included over the whole of the UK, selected to show as many as possible of the same variables as those to appear in the UKCP09 future projections. The addition of these extra maps and graphs would have led to the historical climate chapter dominating the content of UKCP09 Science Report, and hence it was decided that the information should be presented in a separate report; this is the genesis of the present volume. Section 2 of this report shows maps of the baseline 1961-90 UK climate for a number of variables; similar maps for the period 1971-2000; maps of the difference between these two 30-year periods; maps of changes between 1961-2006; graphs showing smoothed trends of each variable, for each of 14 regions of the UK (those over which future projections will be given in the UKCP09 scenarios) and, finally, a table of seasonal and annual changes over the period 1961-2006 over the same areas.

Source : http://www.ukcip.org.uk/images/stories/08_pdfs/Trends.pdf

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-Monjon S., Soumagnac S., 2007. ***Current understanding and research practices related to socio-economic aspects of climate change impacts and adaptation***, Final report, Sixth Framework Programme Priority, Coordination of National and Regional Activities (ERA-NET scheme), 117 pages

The aim of this report is to analyse the existing socio-economic research in the national research programmes implemented by the CIRCLE participating countries and to propose some recommendations about the topics that could be included in a future European Call for Proposals.
After having explained the principles followed to select the programmes and the projects funded included in the analysis, the programmes are studied in first. The relative importance of the topics impacts/adaptation/mitigation in the programmes and the socio-economic disciplines targeted by the programmes are more particularly examined. The analysis is then led at the project level. In particular the most studied topics are identified. The last part proposes some recommendations for a future European Call for Proposals based on the previous analysis and on readings of research done outside the CIRCLE programmes. The conclusions of this analysis suggest integrating in priority in a future European Call for Proposals the following topics:
the socio-economic vulnerability, the costs/benefits of the impacts, the understanding of the adaptation, the adaptation strategy and its interactions with other policies, sectorial studies, in particular about insurance and risk management, the possible role of adaptation in a future international regime, the propagation of the impacts, the distributive aspects of the impacts.

Source : http://www.circle-era.net/uploads/media/CIRCLE_IIc-1_final_report_01.pdf

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-PNUE, 1998. ***Handbook on Methods for Climate Change Impact Assessment and Adaptation Strategies****,* Université d'Amsterdam, Institut for Environmental Studies, Version 2.0, 464 pages

Clearly impact and adaptation studies can be designed for such a variety of circumstances, addressed to such a variety of clients, and focused on anything from a very specific impact on one small part of the socio-economic or natural system to a broad, multi-sectoral, integrated study at a national or regional level, that it is practically impossible to specify a design that can serve all purposes. This handbook is organised in two parts: Part I treats generic and cross-cutting issues, and Part II presents methods for studying impact and adaptation in the selected sectors of water, coastal resources, agriculture, rangelands, health, energy, forests, biodiversity, and fisheries.
Part I includes a "getting started" chapter, which deals with issues, methods, and consideration common to all impact and adaptation studies. The next two chapters discuss how to design and where to obtain scenarios. Chapter 2 treats scenarios of climate change, and Chapter 3 treats scenarios of the socio-economic context in which climate change impacts and adaptation may occur. Chapter 4 describes the need for integration across sector studies and interaction with stakeholders, and suggests ways of establishing such integration and interaction. Chapter 5 treats adaptation to climate change, the sort of options that exist and how to evaluate them.
In order to maintain some comparability among the chapters in Part II, dealing with methods in specific sectors, the authors were asked to follow a common format insofar as their subject matter permits. Therefore each of the chapters begins with a brief introduction that defines and describes the scope of the problem. The likely or known climate change impacts in the sectors are briefly described. Against this background an

array of the various methods is presented. The purpose of this presentation of a selected number of methods is to illustrate the range of different levels of complexity in the methods. Some of the less demanding methods, in terms of data, modelling requirements, and the like, are presented alongside the more complex and demanding methods. The aim is always to be user friendly, and to provide enough information to permit users to make a more informed choice in the design of impact studies, as well as to begin identification and preliminary assessment of adaptation.

Source : http://dare.ubvu.vu.nl/bitstream/1871/10440/1/f1.pdf

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-Prasad N., Ranghieri F., Shah F., Trohanis Z., Kessler E., Sinha R., 2009. ***Climate Resilient Cities - A Primer on Reducing Vulnerabilities to Disasters,*** THE WORLD BANK, Washington, D.C., 186 pages.

Véritable manuel visant à réduire la vulnérabilité des villes face aux bouleversements climatiques et à renforcer les méthodes de gestion des risques de catastrophes, ce rapport devrait constituer un outil très utile pour les équipes municipales du monde entier. En effet, parmi les 10 villes les plus peuplées au monde, 8 sont situées près d'une rivière ou d'un océan et sont déjà exposées à des risques divers (inondations, tremblements de terre, ouragans, infrastructures médiocres etc.). Pour faire face aux conséquences du changement climatique à l'échelle d'une ville, il est essentiel de comprendre ce qui est susceptible de la rendre vulnérable. Dans cette optique, le rapport "Climate Resilient Cities" offre un outil qui permet aux autorités d'identifier les points de fragilité de la ville, d'élaborer des stratégies visant à accroître ses capacités de résistance aux changements climatiques, et d'établir un lien entre changement climatique, réduction des risques de catastrophe, planification et gestion de la ville.

Source : http://siteresources.worldbank.org/INTEAPREGTOPURBDEV/Resources/Primer_e_book.pdf
Webpage :
http://web.worldbank.org/WBSITE/EXTERNAL/ACCUEILEXTN/NEWSFRENCH/0,,contentMDK:21845641~menuPK:3325321~pagePK:34370~piPK:34424~theSitePK:1074931,00.html

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-Stock M., Walkenhorst O., 2005. ***AMICA, Adaptation and Mitigation – an Integrated Climate Policy Approach,*** Literature Review, INTERREG IIIC, Potsdam Institute for Climate Impact Research (PIK), 27 pages.

This literature review has been performed by PIK as a scientific support to the Interreg III C project AMICA: Adaptation and Mitigation – an Integrated Climate Policy Approach. Its principal aim is to compile papers, reports, books and other resources on options, measures, strategies and policies for adaptation to climate change and on the interrelation between adaptation and mitigation. Studies limited merely on climate impact as well as on mitigation are not included. The review's focus lies primarily on Europe. Literature dealing with other regions is also cited if the aspects appear relevant and transferable.

Source : http://www.amica-climate.net/fileadmin/amica/inhalte/dokumente/amica-literature-review-1Logo.pdf

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-The International Climate Change Taskforce, 2005. ***Meeting the Climate Challenge*****,** 40 pages.

Climate change, energy security, and the urgent need to increase access to modern energy services for the world's poor create an enormous need for more efficient low-carbon and no-carbon energy-supply options. Alongside the Centre for American Progress and the Australia Institute, ippr founded an international taskforce to investigate all aspects of climate change and formulate policies to combat it. This interim report, setting out the taskforce's recommendations, is both a practical policy handbook, and passionate call for action on this most vital of issues.

Source : http://www.ippr.org.uk/publicationsandreports/publication.asp?id=246

Walsh, C.L., Hall, J.W., Street, R.B., Blanksby, J., Cassar, M., Ekins, P., Glendinning, S., Goodess, C.M., Handley, J., Noland, R. and Watson, S.J. 2007. ***Building Knowledge for a Changing Climate: collaborative research to understand and adapt to the impacts of climate change on infrastructure, the built environment and utilities.*** Newcastle University, 80 pages.

The Building Knowledge for a Changing Climate (BKCC) programme supported by EPSRC and UKCIP involved researchers and stakeholders from the outset in defining and undertaking a portfolio of nine projects related to climate change and the built environment. The programme had a number of generic objectives:
• to better understand potential impacts and adaptation measures for climate change on the built environment, transport and the utilities;
• to inform stakeholders on how to adapt successfully to impacts of climate change; and
• to inform the research community on the research challenges in implementing these adaptation strategies.
An over-arching Stakeholder Forum has kept the projects focused on solutions driven research and has advised where BKCC outputs themselves can be applied more widely. In order to achieve an effective sharing of knowledge between projects and with stakeholders, the programme was coordinated through an Integrating Framework which included a data-management group to facilitate data acquisition and storage.
The projects have advanced knowledge of the impact of climate change on urban drainage, engineered slopes, the electricity supply industry, the aviation industry, historic buildings and infrastructure, as well as the urban environment more generally. The programme has delivered new insights into how to reduce climate related risk and increase resilience in the built environment, including soft engineering solutions with urban greenspace. Specialised climate and socioeconomic scenarios have been developed along with risk assessment techniques.
This project involves carefully weighing up options, costs and risks within the context of specific locations and systems. Understanding the vulnerabilities of engineering systems and proposing modifications to make them more robust and resilient involves careful analysis and skilled engineering judgement. Those skills are not widespread in practice and one of the contributions of the BKCC programme has been to train a new cohort of young researchers in methods that can be transferred into practice.
This report is one of the outputs of the EPSRC funded project Sustaining Knowledge for a Changing Climate (SKCC), which will sustain the researcher and end user community assembled in the BKCC programme. SKCC will develop a user-led plan for future research into the impacts of climate change on the built environment and infrastructure and development of adaptation options.

Source : http://www.k4cc.org/Members/Claire/BKCC-Results-Publication.pdf

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-Wilby R., Crichton D., 2002. ***London's Warming, The Impact of Climate Change on London, Technical Report****,* led by Entec UK Ltd, Tyndall Centre for Climate Change Research, Metroeconomica and Professor, 2002. 311 pages.

This study is the first step in understanding what may happen as a result of possible future climate change in London. The overall objective for the study was to "outline the threats and opportunities presented by climate change, and start to address the responses needed". More specifically this study has aimed to provide an overview of the existing information on the impacts of climate change on the environment and the economy and, to elucidate the social impacts of climate change largely based on existing reviews, research and monitoring studies within and outside of London.
There are two study reports. This report, the Technical Report, describes in detail the study's findings and is aimed at the more specialised reader and those involved in more detailed planning. A summary report has also been produced that presents the general findings from the study and is aimed at the general reader and policy makers.
Increased general awareness of potential and actual climate change impacts in London is likely to focus policy makers minds on the need to mitigate and adapt to such impacts locally and globally in the future. Indeed, many of the key strategic and policy processes have begun to consider the potential impacts of climate change. Awareness of climate change issues amongst stakeholders involved in this study was high and is accelerating. However, most of the strategy and policy responses are of a scoping nature and more work needs to be done to begin to quantify the potential climate change impacts and adaptation options at the local level including impact on water resources, flooding, water quality, settlement patterns, employment, working conditions, open spaces, infrastructure, economic sectors, biodiversity, economic sectors, health and the built environment.

Source : http://www.london.gov.uk/gla/publications/environment/londons_warming_tech_rpt_all.pdf

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-Boissieu C., 2006. ***Division par quatre des émissions de gaz à effet de serre de la France à l'horizon 2050,*** Ministère de l'industrie, Ministère de l'écologie et du développement durable, La Documentation française, 142 pages

Diviser par quatre les émissions françaises de gaz à effet de serre à l'horizon 2050, tel est l'objectif qui a suscité la création d'un groupe de travail lors du séminaire du gouvernement sur le développement durable du 23 mars 2005. Cet objectif, intitulé "Facteur 4", a été fixé par le Président de la République et inscrit dans la loi du 13 juillet 2005 sur la politique énergétique française. Le groupe de travail examine en premier lieu des scénarios portant essentiellement sur l'énergie, dont les émissions sont responsables actuellement de 73% des émissions de gaz à effet de serre (GES) de la France. Il s'interroge ensuite sur les moyens de faire évoluer les comportements et sur le rôle joué par les politiques publiques. Après avoir analysé des actions engagés par des pays tels que l'Allemagne et le Royaume-Uni en la matière, le groupe de travail présente 28 recommandations "qu'il est indispensable de mettre en oeuvre, le plus tôt possible, pour que la France puisse atteindre le Facteur 4 à l'horizon 2050".

Source : (142 pages) http://lesrapports.ladocumentationfrancaise.fr/BRP/064000757/0000.pdf
(77 pages) http://www.industrie.gouv.fr/energie/prospect/facteur4-rapport.pdf

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-**Brodhag C., Antoine S., Garnier C., Pennequin G., Nghiem T., Mahon C., Dron D., Radanne P., Philibert C., Deprataere S., Sadorge J. L., Sfez L., Cauquelin A.,** 2005. ***Changement climatique, énergie et développement durable des territoires,*** DATAR 2030, DIACT, 113 pages.

Source : http://www.diact.gouv.fr/IMG/Fichiers/archives/Territoires-2030-N_2.pdf

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-Climpact, Greenpeace, 2005. ***Changements climatiques : quels impacts en France ?,*** 139 pages.

L'ambition de ce rapport est de présenter une revue de l'état des connaissances sur les conséquences du réchauffement global en France en termes de changements climatiques et d'impacts.

Source : http://www.greenpeace.org/raw/content/france/presse/dossiers-documents/impactsclimatiquesenfrance.pdf

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-Deneux M (ss dir.), 2002. ***Rapport sur l'évaluation de l'ampleur des changements climatiques, de leurs causes et de leur impact prévisible sur la géographie de la France à l'horizon 2025, 2050 et 2100 -*** Tome I – Rapport, 291pages, Tome II – Rapport Audition, 296 pages, Office Parlementaire d'évaluation des choix scientifiques et technologiques.

Source : http://www.senat.fr/rap/r01-224-1/r01-224-11.pdf
http://www.senat.fr/rap/r01-224-2/r01-224-21.pdf

-Kostic D. sous la dir. de Gérard M., 2006. ***Villes et territoires des pays en développement face aux questions de l'énergie et de l'effet de serre,*** Journée d'étude du 1er septembre 2006 - Ecole Nationale Supérieure des Mines de Paris – Association de professionnels – Villes en développement, 93 pages.

Source : http://www.adp.asso.fr/pdf/2006_AdP_ville_energie.pdf
www.adp.asso.fr

-Lerch D., 2008. ***Se préparer aux incertitudes entourant l'énergie et le climat****,* Fédération canadienne des municipalités - webinaire du 30 janvier 2008, 43 pages

Source :
http://www.sustainablecommunities.fcm.ca/files/Webinars/2008/January_30/post_carbon_cities_Fr.pdf

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-MIES, 2006. ***Actualisation 2006 du Plan Climat National 2004-2012,*** 70 pages.

Source : http://www.effet-de-serre.gouv.fr/images/documents/actuaPC%20pour%20mise%20en%20ligne.pdf

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-ONERC, 2007. ***Stratégie Nationale d'adaptation au Changement climatique****,* 97 pages.

La relève du défi climatique impose aux Etats de réduire considérablement leurs émissions de gaz à effet de serre, mais également de prendre des mesures d'adaptation au changement climatique actuel et futur, afin d'atténuer les effets néfastes du réchauffement de la planète sur la population, l'économie et l'environnement. Dans le cadre de ses missions, l'Observatoire national sur les effets du réchauffement climatique (ONERC) a élaboré une Stratégie nationale d'adaptation au changement climatique.

Source : http://www.ecologie.gouv.fr/IMG/pdf/Stranatdadaptation-2.pdf

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- Pachauri R. K. (ss dir.)., Reisinger A., 2007. ***Bilan des changements climatiques : Rapport de synthèse,*** GIEC.

Le Rapport de synthèse constitue la dernière partie du quatrième Rapport d'évaluation du Groupe d'experts intergouvernemental sur l'évolution du climat (GIEC). Il présente un bilan des changements climatiques fondé sur les conclusions des trois Groupes de travail du GIEC.
Les points exposés dans le présent Résumé à l'intention des décideurs sont analysés de manière approfondie dans la version intégrale du Rapport de synthèse et dans les rapports sous-jacents établis par chacun des trois Groupes de travail.

Source : http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_fr.pdf

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-Radanne P., 2004. ***La division par 4 des émissions de gaz carbonique en France, Introduction au débat***, 15 pages.
Source : http://www.rac-f.org/DocuFixes/etudes/Fact4Radanne.pdf

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Articles
Climat /Territoires/Adaptation au changement climatique

-Hansen J., Sato M., Kharecha P., Beerling D., Masson-Delmotte V., Pagani M., Raymo M., Royer D. L., Zachos J. C., 2008. ***Target Atmospheric CO2: Where Should Humanity Aim?,*** NASA/Goddard Institute for Space Studies, New York, 35 pages.

Paleoclimate data show that climate sensitivity is ~3℃ for doubled CO2, including only fast feedback processes. Equilibrium sensitivity, including slower surface albedo feedbacks, is ~6℃ for doubled CO2 for the range of climate states between glacial conditions and icefree Antarctica. Decreasing CO2 was the main cause of a cooling trend that began 50 million years ago, large scale glaciation occurring when CO2 fell to 425±75 ppm, a level that will be exceeded within decades, barring prompt policy changes. If humanity wishes to preserve a planet similar to that on which civilization developed and to which life on Earth is adapted, paleoclimate evidence and ongoing climate change suggest that CO2 will need to be reduced from its current 385 ppm to at most 350 ppm. The largest uncertainty in the target arises from possible changes of non-CO2 forcings. An initial 350 ppm CO2 target may be achievable by phasing out coal use except where CO2 is captured and adopting agricultural and forestry practices that sequester carbon. If the present overshoot of this target CO2 is not brief, there is a possibility of seeding irreversible catastrophic effects.

Source : http://www.columbia.edu/~jeh1/2008/TargetCO2_20080407.pdf

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-Hansen J., Sato M., 2007. ***Global Warming: East-West Connections***, NASA Goddard Institute for Space Studies and Columbia University Earth Institute, 22 pages.

Air pollutants that damage human health and agricultural productivity, such as tropospheric ozone and black soot, also affect global climate. Multiple benefits of reducing these pollutants become more compelling as concern about global warming increases. Air pollution is especially harmful in developing countries that are now large emitters of carbon dioxide, providing incentive for developed and developing countries to cooperate in reducing both global air pollution and climate change.
The Earth's history provides a sobering perspective on prospects for climate change. The Earth's climate is sensitive to changes in climate forcings, human-made forcings now overwhelm natural climate forcings, and the climate system is dangerously close to tipping points that could have disastrous consequences. Atmospheric composition is now near the limits that must not be exceeded if we wish to maintain a planet resembling the one on which civilization developed, with the equable climate of the Holocene.
Yet quantitative examination of climate forcings reveals a potential path to climate stability with a bright future for life on the planet. Except for carbon dioxide, human-made forcings are increasing more slowly than in the scenarios of the Intergovernmental Panel on Climate Change (IPCC). A focused effort to achieve absolute reductions in non-CO2 forcings, combined with a slowdown of CO2 emissions and phase-out of coal use except at power plants that capture and store the gas, could keep additional global warming well below 1℃.
Attainment of this 'alternative scenario' for future climate requires overturning the common presumption of energy departments that all fossil fuels, including those that are remote or difficult to extract, must be exploited before the world turns to energy sources 'beyond fossil fuels' and begins placing much greater emphasis on energy efficiency and renewable energies.
Cooperation between developed and developing countries is essential. Recognition of responsibilities for the present situation and the numerous mutual benefits of required actions make such cooperation plausible.

Source : http://www.columbia.edu/~jeh1/2007/EastWest_20070925.pdf

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-McEvoy D., Lindley S., Handley J., 2006. ***Adaptation and mitigation in urban areas : synergies and conflicts***, Proceedings of the Institution of Civil Engineers. Municipal engineer, *Telford*, 2006, vol. 159, n°4, pp. 185-191.

Following the introduction of the national Climate Change Programme, initiatives that seek to mitigate greenhouse gas (GHG) emissions are now well established in the UK. This is inevitable as much of the predicted climate changes over the next 30-40 years have already been predetermined by past and present emissions of GHGs. Change is likely to be significant. Understanding what the risks are likely to be and how best to adapt to them is therefore central to any mature climate change strategy. However, the inevitable

linkages between adaptation and mitigation measures represent a particular challenge. Focusing on the consequences of climate change for the urban environment (where most of the population is concentrated and where its impact is likely to be most keenly felt), this paper suggests preferred adaptation options and provides an evaluation of how these may act to reinforce or hamper mitigation efforts. For example, moves towards urban densification may contribute to the reduction of energy use, yet will have negative implications for adaptation. Having a better understanding of the synergies, conflicts and trade-offs between mitigation and adaptation measures would make a valuable contribution to a more integrated climate policy and the effective climate-proofing of our towns and cities.

Source : http://www.atypon-link.com/TELF/doi/abs/10.1680/muen.2006.159.4.185?cookieSet=1&journalCode=muen
http://cat.inist.fr/?aModele=afficheN&cpsidt=18381575

NETTI, *Regional Good Practices*, Presentation of regional frameworks and best practices, WP2, Networks in the Energy field: Technology Transfer and Innovation, 71 pages.

The NETTI-regions are characterised by different histories, geographical aspects and industries. The Kyoto protocol imposes very challenging targets on project regions. All regions have developed own climate protection programs with a focus on renewable energy sources (RES) and energy efficiency (EE). The regions adopted a variety of energy saving plans and regulations to reduce CO2 emission and to achieve the aim of sustainable energy supply.
We find the most developed renewable energy sector in Southeast Sweden. The RES target by 2010 of 50 % contribution to the whole energy consumption is already reached in the Kalmar region. The
Swedish energy policy is focused on breaking the dependence of fossil fuels and to obtain all energy supply from RES. In Saxony and Emilia-Romagna RES contribute at a level below 5 % to the energy production and consumption. Crete is characterised by a huge unexploited renewable energy sources potential and an high dependence on oil (86 %). Biomass contributes in Crete by 12 % to the energy balance of the island. The use of RES in Donegal County is dominated by wind power and large scale hydroelectric power. In addition ocean energy (Tidal Stream, Wave Power) is used in a pilot project for electricity generation.
Three of the investigated regions are net importer of energy (Emilia-Romagna, Crete, Donegal County) and two regions (Saxony, Southeast Sweden) are net exporter. Ireland like to become a net exporter by 2015. The energy consumption of the most important sectors (industry, households, traffics, services, agriculture) is quite different within the investigated regions and depends on the economic structure respectively.
The use of renewable energy sources depends also on the regional framework conditions of the regions. Only Donegal County tries to use ocean energy for electricity generation. In Southeast Sweden hydroelectric power generation and bio energy are very important. The Swedish region has also launched a program to increase the electricity generation by wind power. Biomass is the most important renewable energy source in Crete. The future development in Saxony is also focused on bio energy. Until now wind power is the most important RES in Saxony. In Emilia-Romagna biomass and wind power generation contribute by 15 % to the installed power generation. Modern industries for the energy fields are growing sectors of the regional industries of the NETTI regions.
The NETTI regions can share their specific experience and expertise by mutual learning during the project. Interregional co-operations and networks between universities, research centres, companies and public authorities should be developed. The most important areas in the field of RES for cooperation and networking between the regions seem to be the bio energy sector. But there are also relevant potentials to co-operate in the fields of photovoltaic, wind power and hydrogen technology.

Source: http://www.tgz-bautzen.de/netti/WP2_Regional_Good_Practices.pdf

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-Romm J., 2008. ***Cleaning up on carbon*,** Nature reports climate change, 3 pages.

Both national and global climate policy must redirect its focus from setting a price on carbon to promoting the rapid deployment of clean technologies.
Source : http://www.nature.com/climate/2008/0807/pdf/climate.2008.59.pdf

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-Pacala S., Socolow R., 2004. ***Stabilization Wedges: Solving the Climate Problem for the Next 50 Years with Current Technologies,*** Revue Science, 5 pages

Humanity already possesses the fundamental scientific, technical, and industrial know-how to solve the carbon and climate problem for the next half-century. A portfolio of technologies now exists to meet the world's energy needs over the next 50 years and limit atmospheric CO2 to a trajectory that avoids a doubling of the pre industrial concentration. Every element in this portfolio has passed beyond the laboratory bench and demonstration project; many are already implemented somewhere at full industrial scale. Although no element is a credible candidate for doing the entire job (or even half the job) by itself, the portfolio as a whole is large enough that not every element has to be used.
Source : http://carbonsequestration.us/Papers-presentations/htm/Pacala-Socolow-ScienceMag-Aug2004.pdf

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-Sandena B. A., Azar C., 2004. ***Near-term technology policies for long-term climate targets—economy wide versus technology specific approaches***, Elsevier, 20 pages

The aim of this paper is to offer suggestions when it comes to near-term technology policies for long-term climate targets based on some insights into the nature of technical change. We make a distinction between economy wide and technology specific policy instruments and put forward two key hypotheses: Near-term carbon targets such as the Kyoto protocol can be met by economy wide price instruments (carbon taxes, or a cap-and-trade system) changing the technologies we pick from the shelf (higher energy efficiency in cars, buildings and industry, wind, biomass for heat and electricity, natural gas instead of coal, solar thermal, etc.). Technology specific policies are needed to bring new technologies to the shelf. Without these new technologies, stricter emission reduction targets may be considered impossible to meet by the government, industry and the general public, and therefore not adopted. The policies required to bring these more advanced technologies to the shelf are more complex and include increased public research and development, demonstration, niche market creation, support for networks within the new industries, standard settings and infrastructure policies (e.g., when it comes to hydrogen distribution). There is a risk that the society in its quest for cost efficiency in meeting near-term emissions targets becomes blindfolded when it comes to the more difficult, but equally important issue of bringing more advanced technologies to the shelf. The paper presents mechanisms that cause technology look in, how these very mechanisms can be used to get out of the current ''carbon lock-in'' and the risk with premature lock-ins into new technologies that do not deliver what they currently promise. We then review certain climate policy proposals with regards to their expected technology impact, and finally we present a let-a-hundred-flowers-bloom strategy for the next couple of decades.
Source : http://onerc.org/dataweb/documents/Sanden%20&%20Azar_energy%20policy%202005.pdf

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-Sattherwaite D., 2008. ***Cities and Climate Change,*** Newspaper Essay, Urban Age, 4 pages.

A provocative reassessment of cities' contribution to global greenhouse gases by David Sattherwaite underscores the importance for local governments to foster environmental and social innovation.
Source :
http://www.urban-age.net/0_downloads/archive/_SA/06_NewsPaper_Essay_Sattherwaite.pdf

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-Satterthwaite D., 2008. ***Cities' contribution to global warming: notes on the allocation of greenhouse gas emissions***, 12 pages.

This paper suggests that the contribution of cities to global anthropogenic greenhouse gas emissions is often overstated. Many sources suggest that cities are responsible for 75–80 per cent of all such emissions. But as statistics drawn from the IPCC's Fourth Assessment show, this considerably understates the contributions from agriculture and deforestation and from heavy industries, fossilfuelled power stations and high-consumption households that are not located in cities. It is likely that, worldwide, less than half of all anthropogenic greenhouse gas emissions are generated within city boundaries. However, if greenhouse gas emissions from power stations and industries are assigned to the location of the person or institution who consumes them (rather than where they are produced), cities would account for a higher proportion of total emissions. But it would be misleading to attribute this to "cities" in general, since these emissions would be heavily concentrated in cities in high-income nations and they should be ascribed to the individuals and institutions whose consumption generates them, not to the places where they are located.
Source : http://www.eukn.org/binaries/eukn/eukn/research/2008/12/cities--contribution-to-global-warming.pdf

-Wiener J. B., 2008. ***Climate Change Policy and Policy Change in China,*** Duke University, 22 pages.

Solving the climate change problem by limiting global greenhouse gas (GHG) emissions will necessitate action by the world's two largest emitters, the United States and China. Neither has so far committed to quantitative emissions limits. Some argue that China cannot be engaged on the basis of its national interest in climate policy, on the ground that China's national net benefits of limiting greenhouse gas emissions would be negative, as a result of significant GHG abatement costs and potential net gains to China from a warmer world. This premise has led some observers to advocate other approaches to engaging China, such as appeal to moral obligation.
This Article argues that appeal to national net benefits is still the best approach to engage China. First, appealing to China's asserted moral obligation to limit its GHG emissions may be ineffective or even counterproductive. Even if climate change is a moral issue for American leaders, framing the issue that way may not be persuasive to Chinese leaders. Second, the concern that China's national net benefits of climate policy are negative is based on older forecasts of costs and benefits. More recent climate science, of which the Chinese leadership is aware, indicates higher damages to China from climate change and thus greater net benefits to China from climate policy. Third, the public health co-benefits of reducing other air pollutants along with GHGs may make GHG emissions limits look more attractive to China. Fourth, the distribution of climate impacts within China may be as important as the net aggregate: climate change may exacerbate political and social stresses within China, which the leadership may seek to avoid in order to maintain political stability. Fifth, the costs of abatement may decline as innovation in China accelerates. Sixth, as China becomes a great power in world politics, and as climate change affects China's allies, leadership on climate policy may look more favorable to China's elites. Seventh, the design of the international climate treaty regime itself can offer positive incentives to China.
Taken together, these factors point to a potential and even ongoing shift in Chinese climate policy. They illustrate how the international law and politics of climate change depend on domestic politics and institutions. And they suggest that the United States, if it too takes effective action, can make the case for enlightened pragmatism as a basis to engage China in a cooperative global climate policy regime.

Source :
http://fiesta.bren.ucsb.edu/~gsd/SAWG_Beijing1_Nov_08/docs/10_Climate_change_policy_China_Wiener_08.pdf

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-Colombert M., Diab Y., Salagnac J.L., 2006. ***Climat urbain : de l'évolution des villes au changement climatique,*** CSTB Département Economie et Sciences Humaines, Actes du XIXe colloque international de climatologie, Association Internationale de Climatologie, 8 pages.

1. Si aujourd'hui il ne semble pas particulièrement pénible de vivre en ville sauf exception (canicule européenne de 2003), il se pourrait que le changement climatique annoncé modifie cet état de fait. 2. Climat urbain, explications - 2.1. Modification locale des paramètres climatiques (température, autres paramètres climatiques) - 2.2. L'urbanisation, facteur principal de la mise en place du climat urbain (pollution atmosphérique, rejets thermiques d'origine anthropique, albédo, capacité calorifique des sols et des murs et rugosité de la ville, imperméabilisation des sols, contexte climatique "favorable") 3. L'évolution de la recherche sur le climat urbain - 3.1. Intérêt croissant - 3.2. Modélisation. 4. Le changement climatique - 4.1. Généralités - 4.2. Conséquences du changement climatique sur le climat urbain - 4.3. Rôle de la ville : atténuation et adaptation. 5. Conclusion : décisions d'intervention sur la ville, incidences sur le climat urbain et perspective de changement climatique.

Source : http://www.cstb.fr/fileadmin/documents/publicationsScientifiques/doc00004338.pdf

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-Kopf S., Hallegatte S., Ha-Duong M., *2006.* ***L'évolution climatique des villes européennes,*** 8 pages.

La méthode des analogues climatiques consiste à déterminer un endroit doté aujourd'hui d'un climat comparable à celui que l'on prédit à la fin du siècle. Ce travail représente ainsi ce que signifie le changement climatique pour Paris et 8 autres grandes villes européennes. Pour tenir compte des incertitudes, cet article compare les résultats de trois des principaux modèles climatiques européens.

Source : http://halshs.archives-ouvertes.fr/docs/00/11/40/42/PDF/out.pdf

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Intelligent Infrastructure System

Intelligent Infrastructure System

The Foresight Project on Intelligent Infrastructure Systems set out to explore how science and technology could, over the next 50 years, be used to deliver infrastructure for transport, and its alternatives, that would be sustainable, robust and safe. The project considered the three central aspects of sustainability – economic, environmental and social.
The project looked at the issues in three ways:
• Leading researchers were commissioned to write state-of-research reviews that set out where we stand now and what research could deliver for us now. The state-of-research reviews covered areas as diverse as artificial intelligence and data mining through to how information affects our choices, and the psychology of travel.
• A set of scenarios was produced that provide a range of credible and coherent pictures of the technology we might invest in and how society might react to those investments.
• This Technology Forward Look reviews current roadmaps for the development and application of the technology, and considers how that technology could be applied in the longer term.

Source : http://www.foresight.gov.uk/OurWork/CompletedProjects/IIS/KeyInfo/Index.asp

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-Banister D., Hickman, 2006. **How to design a more sustainable and fairer built environment (JU5) : Transport and communications,** Foresight Intelligent Infrastructure Systems Project, 29 pages

Transport and information and communications technologies (ICT) and the city are closely and inextricably linked. These elements must be designed to work together, in mutually reinforcing ways, so that the economic, environmental and social vitality of the city is maintained and enhanced. Transport must no longer adversely dominate city design, but instead play an important, supporting role in improving the quality of life in the city. The future emphasis will be in exploiting the potential for increased usage of public transport, cycling and walking and low carbon vehicles. This requires an increased localisation of activity and mobility patterns, whilst still maintaining internationalised accessibility. Urban spatial structure - including population size, density, job-housing balance, mixed land use, the location of development, accessibility and local neighbourhood design – can also be used to help design of the sustainable city. Urban form should be targeted at improving the quality of life in our cities and towns and in enabling a sustainable transport future. The future intelligent infrastructure system must be based upon a robust understanding of the way transport, ICT and the city inter-relate, and the emphasis for future development and investment must be in supporting the sustainable and fair city. Inclusiveness, communication, participation and ownership will be critical to successful change.

Source :
http://www.foresight.gov.uk/Intelligent%20Infrastructure%20Systems/Transport_communications.pdf

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-Bell C. B., 2006. **Environmental Factors in Future Transport**, Institute for Transport Studies, University of Leeds, Foresight Intelligent Infrastructure Systems, 28 pages.

Increased car use has highlighted the problem of congestion, not only because of its threat to economic growth but also as a substantial contributor to poor air quality, noise and global warming. Vehicle technologies and intelligent transport systems can play an important role in addressing environmental problems in urban areas and in developing long-term sustainability of towns and cities.

Source : http://www.foresight.gov.uk/Intelligent%20Infrastructure%20Systems/Environmental_Factors.pdf

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-Curry A., Hodgson T., Kelnar R., Wilson A., 2006. ***Intelligent Infrastructure Futures, The Scenarios – Towards 2055,*** Intelligent Infrastructure Systems Project, Office of Science and Technology, 89/48 pages.

The Foresight Project on Intelligent Infrastructure Systems (IIS) set out to examine the challenges and opportunities for the UK in bringing 'intelligence' to its infrastructure – the physical networks that deliver such services as transport, telecommunications, water and energy. In particular, the project explored how, over

the next 50 years, we can apply science and technology to the design and implementation of intelligent infrastructure for robust, sustainable and safe transport, and its alternatives.
The technological opportunities and social factors are such that IIS can develop in many different ways. The direction will depend on the direction that society takes. The Foresight project investigated many alternative futures and identified 60 different 'drivers for change' (see Appendix). It is difficult to say how these drivers will change the future. However, to illustrate the possibilities, and guide its thinking and analysis, the project created four scenarios of how the future might look.

Source : http://www.foresight.gov.uk/Intelligent%20Infrastructure%20Systems/the_scenarios_2055.pdf
http://www.foresight.gov.uk/Intelligent%20Infrastructure%20Systems/2055_Perspective_Process.pdf_

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-Köhler J., 2006. **Transport and the environment: Policy and Economic Consideration**, Tyndall Centre, University of East Anglia and Faculty of Economics, University of Cambridge, Foresight Intelligent Infrastructure Systems Project, 21 pages.

This paper concentrates on the most important sources of emissions in transport. Currently, this is road vehicles and in particular motor cars, while in the future aviation may come to be of similar importance (Goetz and Graham, 2004). Emissions from transport can be reduced in two ways: improvements in the environmental performance of the transport systems technologies and changes in transport behaviour such as to reduce emissions, either from reducing or restructuring activity. What is also needed is an incorporation of current transport scenarios into a vision of the future, which describes societies and economies – ways of living, the built environment, leisure and culture. There is very little of this type of work that is carefully thought through.
In order to reduce emissions, the built environment, lifestyles and technologies must all be considered in a holistic analysis, directed processes of change – transitions – to new forms of transport. An analysis in terms of transitions takes us into non-linear dynamic processes. It is not just a matter of developing a policy and then extrapolating the effects forward through time, it requires the consideration of how to initiate social and economic processes that will transform transportation. The technology transitions literature is helpful here.
For this to happen, it is firstly necessary to develop visions of low emissions transport based on realistic engineering concepts and where the lifestyles are likely to meet the demands of societies and economies. This is also an area where the current transport literature is weak. Finally, low emissions transport systems and policies will not happen until the understanding of policy and analysis demonstrates ways in which these visions can be initiated and supported. This is the real challenge for transport policy in the future.

Source :
http://www.foresight.gov.uk/Intelligent%20Infrastructure%20Systems/Transport_and_the_environment.pdf

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-Lyons G., Urry J., 2006. ***Foresight: the place of social science in examining the future of transport***, 16 pages.

Until recently a predominant assumption of policymaking has appeared to be that transport exists to serve society. Yet in practice transport shapes society and is shaped by it. Thus transport should be seen to support society. These are subtle but significant distinctions. In January 2006 the OSI's Foresight Programme launched the report of its examination of the future of transport to a 2055 horizon, entitled Intelligent Infrastructure Futures. The project and its reporting are receiving widespread interest across government departments. 'Intelligent Infrastructure' could easily imply a dominant physical science and technology flavour to the initiative with a here to serve mentality. However, two of the four 'science experts' enlisted for the study were chosen to represent social science or 'society'. In turn five from 18 science reviews commissioned as part of the study concerned 'society'. The outcome has been a consideration of the future as strongly shaped by social context as by technological possibility. This paper provides a brief summary of the Foresight Programme and its role in informing policy. An overview of the structure and outcomes of the transport study is given with specific discussion of how social science input has shaped the study. What emerges strongly is that 'intelligence' is not a trait attributable to science and technology but is demonstrated through how they are used in a social and behavioural context.

Source : http://www.foresight.gov.uk/Intelligent%20Infrastructure%20Systems/Social_Science.pdf

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-Sharpe B., Hodgson T., 2006. ***Intelligent Infrastructure Futures Technology Forward Look, Towards a Cyber-Urban Ecology*****,** Office of Science and Technology, 44 pages

The purpose of this Forward Look is to support the scenario exercise by helping to organise the huge breadth of research materials in a way that makes it possible to think about them. It does this in three stages:
-Part 1: A discussion of how we need to organise our thinking into three horizons: in the short and medium term, we can use technology roadmaps to look ahead; for the 50-year period, we need to use an envisioning process.
-Part 2: A high-level view that signposts the key IIS technologies, built on existing research materials and roadmaps for Horizons 1 and 2.
-Part 3: A discussion of how the four topics might shape the 50-year future of Horizon 3.
Part 3 sets up a contrast between our current mindset and an alternative view dominated by concerns for sustainability. That view highlights the choices available to us in how we conceive and apply technology. This is not intended to be a prediction, plan, or roadmap: it is a thinking tool to throw light on the choices we might make and approaches that might warrant analysis in more detail.

Source :
http://www.foresight.gov.uk/Intelligent%20Infrastructure%20Systems/Technology_Forward_Look.pdf

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-Social factors in future travel: A qualitative assessment. KW Axhausen Arbeitsbericht Verkehrs- und Raumplanung Foresight Intelligent Infrastructure Systems Project, octobre 2006, 21 pages

This paper sketches the interaction between social networks, activity spaces/markets and traffic growth. It argues that these linkages influence the adoption of intelligent transport systems, in particular with respect to management and control technolo-gies.
Qualitative models of personal activity spaces and commercial markets are devel-oped. These suggest that any decoupling between economic and traffic growth will be difficult. They also suggest, that any change in trend will be difficult, as the current travel patterns reflect the social capital structures of society, which will be reluctant to change without good reason or external pressure.

Source : http://www.foresight.gov.uk/Intelligent%20Infrastructure%20Systems/Social_factors.pdf

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-The Intersection of Technology and Society: evaluating the impact of intelligent infrastructure on transport and travel, Stephen Little Open University, Foresight Intelligent Infrastructure Systems Project**,** octobre 2006, 17 pages

This review provides an overview of a range of social science methods and their potential to assist in the effective development and deployment of intelligent infrastructure systems (IIS). It argues that the intersection of technology and society can be explored using a combination of reflective analysis and proactive intervention supported by a range of tools from the social sciences. These tools can be applied at several levels of analysis and can be supported by the infrastructure itself. As a consequence, social evaluation can and should be integrated into technical evaluation and development so that policy level decision making can be informed from a solid base of understanding.
From a technical perspective IIS must be both affordable and effective and reliable and robust. From a social perspective they must be acceptable in terms of the demands they make on those encountering them They are generally likely to be unobtrusive, however, social acceptability also reflects their perceived function, the use of data captured and analysed, and the nature of benefits delivered to individual users and the more general public.
The review argues that some degree of social learning is necessary to realise unanticipated uses and benefits from a system and its components. Developers can benefit from the sense-making undertaken by users. A range of findings from the application of different social science techniques are used to illustrate the value of the analysis of emerging trends and applications of technology which may be beyond those envisaged by their inventors and innovators.

Source :
http://www.foresight.gov.uk/Intelligent%20Infrastructure%20Systems/Intersection_of_Technology_Society.pdf

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Grenelle de l'environnement

-Rapport du Comité opérationnel n°3, « Renovations des bâtiments existants », 2008, 115 pages. Chefs de projet **Alain Jacq** (DGUHC)**, Matthieu Orphelin** (ADEME)**, présenté par Philippe Pelletier,** Avocat, Président de l'Agence nationale de l'habitat.
Source : http://www.legrenelle-environnement.fr/IMG/pdf/rapport_final_comop_3.pdf

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-Rapport du Comité opérationnel n°9, « Urbanisme » , 2008, 122 pages. Chefs de projet **Nicolas Ferrand -** Établissement public d'aménagement de Saint-Étienne **et Philippe Quévremont -** MEEDDAT, Inspection générale de l'environnement.
Source :
http://www.ihedate.com/generated/objects/AT_biblio/Grenelle___Rapport_Synthese_COMOP_9_urbanisme.pdf

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-Rapport du Comité opérationnel n° 10, Plan de développement des énergies renouvelables à haute qualité environnementale 2008-2012-2020. Les présidents : **Jean-Claude Lenoir**, Député de l'Orne, **Alain Liébard**, Président d'Observ'ER | Les rapporteurs : **Pascal Dupuis**, MEEDDAT, **Julien Turenne**, MAP, **Jean-Louis Bal**, ADEME.
Source :
http://www.legrenelle-environnement.gouv.fr/grenelle-environnement/IMG/pdf/rapport_final_comop_10.pdf

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-Rapport du Comité opérationnel n°28, « Collectivités exemplaires », 2008, 83 pages. Chef de projet : **Philippe Senna** - Pilotes : **Marc Censi, Pierre Jarlier, Daniel Percheron** représenté par **Emmanuel Cau et Philippe Richert.**

Source : http://www.legrenelle-environnement.fr/grenelle-environnement/IMG/pdf/comop_28-2.pdf

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Politiques urbaines

Politiques énergétiques et sortie des énergies fossiles

-A greener greater New York, plaNYC 2030, the city of New York, 2007, 158 pages.

The challenges we face today are very different from those of the 1970s, but they are no less critical. Our population will grow to over nine million by 2030. Much of our physical infrastructure is a century old and showing its age. Even as we have revitalized the five boroughs, the quality of our air, water, and land still suffer. And today we face a new threat with potentially severe implications: global climate change. This Plan seeks to repel these threats and to extend the gains we've made over the last thirty years. It seeks active solutions rather than reactive fixes. The 1970s taught us that investing in our future is not a luxury, but an imperative. With that in mind, this Plan seeks to secure for our children a city that is even greater than the one we love today. The moment for facing up to our responsibility for the city's long-term future is now. The city we pass on to our children will be determined in large part by whether we are willing to seize the moment, make the hard decisions, and see them through. This is not a plan that supplants other City efforts, such as those we are making on crime, poverty, education, or social services. Here we have focused on the physical city, and its possibilities to unleash opportunity. We have examined the tangible barriers to improving our daily lives: housing that is too often out of reach, neighborhoods without enough playgrounds, the aging water and power systems in need of upgrades, congested roads and subways. All are challenges that, if left unaddressed, will inevitably undermine our economy and our quality of life.
We can do better. Together, we can create a greener, greater New York.

Source : http://www.nyc.gov/html/planyc2030/downloads/pdf/full_report.pdf

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-Anderson V., Dawes J., Duffy J., Farrell J., Goode D., Hutchinson D., Le Miere S., Thumim J., 2004. ***Green light to clean power, The Mayor's Energy Strategy***, Greater London Authority, 2004, 285 pages.

Energy is central to life in London and the way we use it has huge implications for our environment, for economic regeneration and in terms of social equity. The Mayor's energy strategy, Green light to clean power, aims to minimise the impacts on health and on the local and global environment of meeting the essential energy needs of all those living and working in London. Specifically, it aims to reduce London's contribution to global climate change, tackle the problem of fuel poverty and at the same time promote London's economic development through renewable and energy efficient technologies.

Source : http://www.london.gov.uk/mayor/strategies/energy/docs/energy_strategy04.pdf

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-Bailey J., 2007. ***Lessons from the pioneers : tackling global warming at the local level,*** Institute for Local Self-Reliance, 17 pages.

As of January 2007, 355 mayors in communities representing over 54 million Americans in 49 states have signed the U.S. Mayor's Climate Protection Agreement (formalized in June 2005). Participating cities agree to reduce community-wide greenhouse gas (GHG) emissions by 2012 to at least 7 percent below 1990 levels. The number of communities involved promises a diversity of strategies and a steep learning curve as communities learn from one another what works, and what doesn't work.
We surveyed the climate change activities in 10 cities to find out how well these "Kyoto cities" were doing in meeting their goals and what strategies and methodologies they were using. The overriding conclusion is that, despite their commitment and their elaboration of significant programs, reducing GHG emissions below 1990 levels will be a major challenge. Many cities will likely fail in their attempts unless complementary state and federal policies are put in place.

Source : http://www.newrules.org/de/pioneers.pdf

-Brangwyn B., Hopkins R., 2008. ***Transition Initiatives Primer - becoming a Transition Town, City, District, Village, Community or even Island,*** version 26, 55 pages.

In response to the twin pressures of Peak Oil and Climate Change, some pioneering communities in the UK, Ireland and beyond are taking an integrated and inclusive approach to reduce their carbon footprint and increase their ability to withstand the fundamental shift that will accompany Peak Oil.
This document provides an overview of these initiatives for transitioning to a lower energy future and to greater levels of community resilience.
This document comes to you from the Transition Network, a charity recently formed to build upon the groundbreaking work done by Kinsale, Totnes and the other early adopters of the Transition model.
Our mission is to inspire, inform, support, network and train communities as they consider, adopt and implement a Transition Initiative. We're building a range of materials, training courses, events, tools & techniques, resources and a general support capability to help these communities.

Source : http://transitionnetwork.org/Primer/TransitionInitiativesPrimer.pdf

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-Brook Lyndhurst Ltd, 2006. ***The City Climate Challenge for 2050 - Your city – your responsibility,*** Royal Institution for Chartered Surveyors (RICS), UK, 45 pages

Research findings which explore some of the ways in which urban areas in the United Kingdom may need to adapt and change in order to meet the challenge of climate change, and deliver a 60 per cent reduction in carbon dioxide emissions by 2050. The study looks at the futures of UK towns and cities in a carbon constrained world, which is also adapting to a changing climate. Three exploratory case studies are introduced to provoke debate and discussion: (1) the role of transport in Manchester; (2) energy demand from the built environment in Bournemouth; (3) energy supply in Brighton.
The study outlines what the scenarios tell about possible futures and uses key national trends alongside local data to highlight what a 60 per cent reduction in carbon dioxide emission would look like on the ground. It also incorporates a composite study of London, drawing together the three issues.
Conclusions : Certain aspects of transport, namely technological advancement and the role for a strong system of spatial planning in prioritising public transport, are consistently identified as important for the transition to a low carbon transport future. Looking at the built environment, a focus on reducing energy demand alongside improvements in energy efficiency is needed, as is regulation in driving buildings' resource and energy efficiency.
The case study on energy supply indentified energy supply mix and energy security as key features of a low carbon future. The study draws attention to a neglected area in the literature on climate change, namely that of equity and distribution. For example concerning car ownership and use, the question can be asked - how can the circle of encouraging equality of mobility be squared while at the same time journeys are having to be restricted as a means of achieving CO2 reductions?

Source : http://www.eukn.org/binaries/greatbritain/bulk/research/2007/6/city_climate_challenge.pdf

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-Brown M., Southworth F., Sarzynski A., 2008. ***Shrinking the carbon footprint of metropolitan America*****,** Brookings, Metropolitan Policy Program, 83 pages.

America's carbon footprint is expanding. With a growing population and an expanding economy, America's settlement area is widening, and as it does, Americans are driving more, building more, consuming more energy, and emitting more carbon. Rising energy prices, growing dependence on imported fuels, and accelerating global climate change make the nation's growth patterns unsustainable.
Metropolitan America is poised to play a leadership role in addressing these energy and environmental challenges. However, federal policy actions are needed to achieve the full potential of metropolitan energy and climate solutions.
America's Challenge: The nation's carbon footprint has a distinct geography not well understood or often discussed. This report quantifies transportation and residential carbon emissions for the 100 largest U.S. metropolitan areas, finding that metro area residents have smaller carbon footprints than the average American, although metro footprints vary widely. Residential density and the availability of public transit are important to understanding carbon footprints, as are the carbon intensity of electricity generation, electricity prices, and weather.
Limitations of Existing Policies: Numerous market and policy distortions inhibit metropolitan actors from more aggressively addressing the nation's climate challenge. Economy-wide problems include underpriced energy, underfunded energy research, missing federal standards, distorted utility regulations, and inadequate information.

Policy impediments include a bias against public transit, inadequate federal leadership on freight and land-use planning, failure to encourage energy- and location-efficient housing decisions, and the fragmentation of federal transportation, housing, energy, and environmental policies.
A New Federal Approach: Federal policy could play a powerful role in helping metropolitan areas— and so the nation—shrink their carbon footprint further. In addition to economywide policies to motivate action, five targeted policies are particularly important within metro areas and for the nation as a whole:
• Promote more transportation choices to expand transit and compact development options
• Introduce more energy-efficient freight operations with regional freight planning
• Require home energy cost disclosure when selling and "on-bill" financing to stimulate and scale up energy-efficient retrofitting of residential housing
• Use federal housing policy to create incentives for energy- and locationefficient decisions
• Issue a metropolitan challenge to develop innovative solutions that integrate multiple policy areas

Source:
http://www.brookings.edu/~/media/Files/rc/reports/2008/05_carbon_footprint_sarzynski/carbonfootprint_report.pdf

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-Bulkeley H., Schroeder H., 2008. ***Governing Climate Change Post-2012: The Role of Global Cities – London,*** Tyndall Centre for Climate Change Research, 29 pages.

While international negotiations for a climate change policy framework post-2012 continue, there is increasing recognition that a range of activities to reduce greenhouse gas emissions are taking place 'beyond' this formal arena. This working paper contributes to the research of the Tyndall Centre programme 1 by focusing on a group of non nation-state actors - global cities – and their role in climate governance. Cities are a critical source of man-made carbon dioxide emissions – accounting for as much as 78% by some accounts (Stern 2006) – and places where vulnerability to climate change may be acute. The project includes four case-studies: London, Los Angeles, Mexico City and Melbourne. This working paper documents the experience of London. It charts the emergence and evolution of London's climate change policy in the period 2000 – 2008. It argues that this has been marked the development of initiatives for addressing climate change which fall into three core categories: leadership; infrastructural change; and changing practice.
Leadership has been an important means through which officials and politicians in London have been able to justify and extend their actions. Addressing issues of infrastructure provision, and in particular energy supply, has been critical in setting out the ambitious targets in both climate change policy and wider frameworks of land-use planning. Seeking to address the practices of energy use amongst domestic and commercial actors in London has been a significant means through which authorities have sought to extend their reach beyond their nominal jurisdictions for reducing emissions of greenhouse gases. These three approaches have depended on a mixture of governing modes, or approaches, including traditional government functions of control and compliance (e.g. planning), providing new forms of service (e.g. energy) and enabling (e.g. partnerships). This is creating innovative responses to climate change in the city, but considerable challenges have also been encountered. First, in terms of leadership, whether the momentum created by a particular cohort of individuals can be maintained over time, particularly in a context of party political change, is moot. Second, in terms of achieving infrastructural change, while there have been challenges in relation to the business response to this issue, this has been less confrontational than might have been expected. Instead, the major challenges have come from national level energy policy and regulation, a lack of technical expertise in planning authorities, and the novelty of the technologies themselves. Third, in seeking to change practices at the household and commercial level barriers remain in relation to the take-up and follow through of advice in individual households and companies, the skills available to embed energy efficiency technologies in the built environment, and in terms of the finances available to sustain partnership working in general and certain schemes in particular.
As regards the impacts of, and influence upon, the post-2012 international climate policy framework, three conclusions from this report are particularly salient. First, the specific details of any international agreement are of less importance than its general features. In short, for London, any agreement will be better than none. Second, any such agreement is likely to have an indirect but still significant impact on London's climate policy, in particular because of its importance of shaping the climate policy positions of the EU and UK government, and the nature of business engagement on the issue. Third, London's influence on the international policy framework is also indirect. Through the establishment of the C40 network, London, together with other global cities, may be affecting the tenor of domestic climate politics in several countries which will be critical to the make-up of the post-2012 policy framework. In this manner, a non (nation) state actor such as London may be significant beyond its jurisdictional realm.

Source : http://www.tyndall.ac.uk/publications/working_papers/twp123.pdf

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-Dawson R. J., Hall J. W., Barr S. L., Batty M., Bristow A. L., Carney S., Dagoumas A., Evans S., Ford A., Harwatt H., Köhler J., Tight M. R., Walsh C. L., Zanni, A. M., 2009. ***A blueprint for the integrated assessment of climate change in cities,*** Tyndall Centre for Climate Change Research, 26/171 pages.

More than half of the global population live in cities, which are major concentrations of vulnerability to climate change. Cities are also major emitters of greenhouse gasses. Consequently they are key to mitigating global climate change and reducing the impacts of climate change on people and infrastructure. This role is being increasingly recognised through the policy and planning measures of individual cities and their collective action in the global climate debate. This paper reviews the potential impacts of climate change on cities and the challenges faced by city planners to manage these risks. An integrated assessment system for analysing climate change in cities is being developed by the Tyndall Centre for Climate Change Research. The principles of this system are introduced before identifying remaining research questions.

Source : http://tyndall.ac.uk/publications/working_papers/twp129.pdf
http://www.tyndall.ac.uk/publications/working_papers/twp104.pdf

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-Eek H., Swahn J., 2002. ***GÖTEBORG 2050 -*** visions of a sustainable society, 17 pages.

GÖTEBORG 2050 is a project spanning a number of years. Our aim is to draw up and develop visions of the future for Göteborg as a sustainable city and part of a sustainable society. Our ambition is to achieve a deeper understanding of how the sustainable world of the future might take shape, and thus to stimulate accelerated movement towards sustainability.
This folder describes the project GÖTEBORG 2050, giving ideas about what various aspects of life might be like half a century from now. We hope it will also serve as a source of inspiration so we can begin to envision Göteborg as a sustainable city. We offer the reader our own ideas as scenarios for conceivable, desirable futures. As the project progresses, we hope as many people as possible will become involved in developing them.

Source : http://www.goteborg2050.se/pdf%5CEnglish_version_02.pdf

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-Franzén J., 2003. ***Future Production of Transport Fuel, Power and Heat from Biomass****,* A Vision of a Large-scale Energy Combine in Göteborg, Department of Physical Resource Theory, Chalmers University of Technology, Göteborg University, Göteborg, Sweden, 49 pages.

To reduce the emissions of the greenhouse gas carbon dioxide (CO2) to the atmosphere different measures can be applied, for example a reduced energy use and a shift from fossil fuels to renewable fuels such as biomass. An energy efficient way of utilising biomass could be for production of transport fuel, electric power and heat in a so-called energy combine. In this report a vision of how a large-scale biomassbased energy combine could be part of a future sustainable energy system in Göteborg has been developed. In order to determine the size of a energy combine, scenarios of the future demand for transport fuel, electricity and heat in the residential and service sector and the transport sector have been made. The method applied is the so-called backcasting approach, which is a method to analyse future options from a sustainability perspective. The sustainability criteria applied are that the energy system should not give rise to net emissions of CO2, that it is based on renewable energy sources and that it is characterised by efficiency, both on the supply and user side. A population increase of 35% compared with today is also assumed. The image of the future shows a situation where a biomass-based energy combine covers the whole demand for transport fuel and 20% of the electricity demand in the region of Göteborg as well as 95% of the supply of district heat in the municipality of Göteborg. The energy use for heating and the use of electricity is reduced by approximately 50% per capita. The energy use in the transport sector is reduced by more than 70% per capita. The biomass required for the energy combine amounts to 6-8 TWh, which is a substantially extended use of biomass compared with today. The future potentials for biomass utilisation are however large and this aspect is therefore not considered to be an insurmountable obstacle for an energy combine.

Source : http://www.goteborg2050.se/pdf%5CGoteborgEnergyCombine2050.pdf

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-Kinsale 2021 : An Energy Descent Action Plan, **Students of Kinsale Further Education College,** Edited by Rob Hopkins, 2005, 55 pages.

The report that you hold in your hand is a very important piece of work. It is the first attempt at setting out how Kinsale, a West Cork town of about 7,000 people, could make the transition from a high energy consumption town to a low energy one. The impending peaking of world oil production will lead to huge changes around the world, and Ireland will not be immune from this.
This report, prepared by permaculture students from Kinsale Further Education College, looks at how Kinsale could navigate this uncertain time by setting out a clear vision of how a lower energy future could be, and then identifying a clear timetable for achieving it. This is, as far as we know, the first time this has happened in Ireland. The report looks at most aspects of life in Kinsale, including food, energy, tourism, education and health. Also described is the process that produced this report, in the hope that it can be rolled out in other towns across the country.

Source : http://transitionculture.org/wp-content/uploads/KinsaleEnergyDescentActionPlan.pdf

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-Miner D., 2008. ***Energy Independence for New York City: Preparing for fuel volatility and depletion, slowing climate change, and accelerating PlaNYC,*** Sierra Club NYC Group, 52 pages.

This report will lay out a roadmap of pragmatic steps, which will enhance current PlaNYC initiatives to move NYC toward sustainable and secure energy independence. Primarily, we encourage City officials to form a task force to study potential local impacts and mitigations of energy volatility, and to require consideration of energy volatility in all City agency budgeting and planning decisions, as has been done already in Portland, Oregon and San Francisco. Portland's group has generated a municipal report. Civic, community and business groups need not wait for the City to begin their own explorations. Report recommendations also address transportation, regionalizing agriculture and manufacturing, energy efficiency in buildings, electricity generation, and guiding principles and models for national policy.

Source: http://www.beyondoilnyc.org/SCNYCG-energy-report-2-08.pdf

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-Ministry of the Environment NZ, 2008. ***Climate Change Effects and Impacts Assessment: A Guidance Manual for Local Government in New Zealand*****,** 44 pages.

This manual provides the latest projections of the expected physical impacts of climate change, both at the national level and for regions around New Zealand. It is designed to help local government identify and quantify opportunities and risks that climate change poses for their functions, responsibilities and infrastructure. It also demonstrates how to incorporate climate risk assessment into local government regulatory, assessment and planning processes to reduce vulnerability to the impacts of climate change.

Source : http://www.mfe.govt.nz/publications/climate/preparing-for-climate-change-guide-for-local-govt/preparing-for-climate-change-guide-low-res.pdf

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-Salon D., Sperling D., Meier A., Gorham R., Murphy S., Barrett J., 2008. ***City Carbon Budgets: Aligning Incentives for Climate-Friendly Communities,*** Draft, 24 pages.

City carbon budgets are a proposed policy mechanism to link state (and national) greenhouse gas reduction goals to local prerogatives regarding land-use, zoning, transport programs and investments, and building codes. Under this proposal, cities and counties would be responsible for reducing their carbon footprint.
By partnering with local governments to reach climate goals, the state would empower local governments and invite solutions tailored to the communities where they will be implemented. Diversity in local solutions is both expected and encouraged, as this diversity in approach should stem from real differences between communities in the costs, emissions benefits, and co-benefits of different strategies.

Source : http://www.arb.ca.gov/planning/hsmit2008/docs/city_carbon_budget_draft.pdf

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-Schroeder H., Bulkeley H., 2008. ***Governing Climate Change Post-2012: The Role of Global Cities Case-Study: Los Angeles,*** Tyndall Centre for Climate Change Research, 22 pages.

In May 2007 Los Angeles adopted an Action Plan to Lead the Nation In Fighting Global Warming. The plan includes a CO2 emissions reduction target of 35 percent by 2030 of 1990 levels. The approach Los Angeles is taking is one of simultaneously addressing future energy and water security by investing in decentralised renewable energy and decreasing per-capita water use. Additional areas include waste management, greening of buildings and open space and addressing emissions from the transport sector. The emphasis has so far been on the supply, rather than the demand, side. While political leadership has been very important in pushing through this action plan, a mature local environmental community and membership in transnational city networks such as C40 have been instrumental in working out the details of this plan. The impact on LA's actions on climate change will likely reach beyond city limits given the United States' continued obstruction of international efforts to address climate change and given Los Angeles ability to act as a significant role model both domestically and internationally. This could be crucial at a time when the international community is faced with the need to translate scienitific recommendations into political action and forge a post-Kyoto deal.

Source : http://www.tyndall.ac.uk/publications/working_papers/twp122.pdf

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-SIEMENS, 2008. ***Sustainable Urban Infrastructure London Edition – a view to 2025,*** 2008. A research project sponsored by Siemens, 72 pages. The Economist Intelligence Unit conducted a programme of interviews and wrote this report, based primarily on research conducted by McKinsey & Company.

-First comprehensive analysis of costs and potentials of greenhouse gas abatement technologies in a city,
-Identified reduction potential for London in 2025: ~20 megatonnes CO2 (~44 percent reduction compared to 1990),
-Additional investments required annually: less than 1 percent of London's total economic output until 2025,
-About two-thirds of the necessary investments would pay for themselves.

London can meet international greenhouse gas reduction targets without a dramatic shift in its citizens' lifestyle. This is a central finding of the study "Sustainable Urban Infrastructure" presented today in London at the Siemens Media Summit. Adopting currently available technologies could reduce annual CO2emissions in the British metropolis by nearly 44 percent – almost 20 megatonnes (Mt) – by 2025 compared to 1990. Working with Siemens, the international management consultants McKinsey & Company analysed more than 200 technological levers that reduce greenhouse gas emissions, water usage and waste disposal in the city. The study shows that the adoption of many technologies for reducing greenhouse gases also makes good economic sense. Almost 70 percent of the potential abatement could be achieved with the help of technologies that would pay for themselves, largely by reducing energy costs.

Source :
http://w1.siemens.com/press/pool/de/events/media_summit_2008/sustainable_urban_infrastructure-study_london.pdf

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-SIEMENS, 2009. ***Sustainable Urban Infrastructure - Ausgabe München – Wege in eine CO2-freie Zukunft.*** Dieser Bericht basiert auf Forschungsergebnissen des Wuppertal Institut für Klima, Umwelt, Energie GmbH und wurde von der Siemens AG unterstützt, 76 pages, en allemand.

Source : http://w1.siemens.com/entry/cc/features/sustainablecities/all/en/pdf/munich_en.pdf

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-The Mayor's Climate Change Action Plan*,* Action Today to Protect Tomorrow, Greater London Autority, 232 pages.

The Mayor's Climate Change Action Plan sets out a path for London to tackle this challenge and to deliver London's CO2 targets. The core message of the Climate Change Action Plan is that Londoners do not have to reduce their standard of living for London to play its part in tackling climate change, but we do all have to change the way we live. We have to move from a high energy-use, wasteful economic model to one that conserves energy and minimises waste. In other words we have to be more efficient. As our focus is on efficiency, many of the measures advocated in this plan will deliver net financial benefits over a relatively short period of time, as well as cutting emissions. And as the government's comprehensive 'Stern Review' of

the economics of climate change demonstrated, it will be far cheaper to invest now to reduce carbon emissions, rather than ignore the problem and face far higher costs in the future.

Source : http://www.london.gov.uk/mayor/environment/climate-change/docs/ccap_fullreport.pdf

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-POTF, 2007. ***Descending the Oil Peak: Navigating the Transition from Oil and Natural Gas,*** Report of the City of Portland Peak Oil Task Force, 86 pages.

This report assesses Portland's vulnerabilities in the face of wide-ranging changes in global energy markets and provides an initial set of recommendations to reduce oil use and strengthen the community's ability to respond to social and economic stress.

A number of the recommendations imply the need for a central program to coordinate goal setting, tracking and communications. Other recommendations are policies, programs or projects to be implemented by specific bureaus or groups of bureaus. The Task Force proposes that a team of city staff be appointed to translate these recommendations into a funded, operational course of action.
Acting on this report, however, does not need to await further study or analysis. City bureaus can immediately look for ways to incorporate these energy concerns and impacts into ongoing planning activities and educational programs around sustainable development. City Council can challenge bureaus to align their investments and activities with the recommendations outlined in this report. Finally, the Task Force members would like to express their willingness to continue assisting the City of Portland as it engages City staff and the public about peak oil and Portland's energy future.

Source : http://www.portlandonline.com/osd/index.cfm?c=42894&a=145732

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-The Oil Depletion Analysis Centre and Post Carbon Institute, 2008. ***Preparing for Peak Oil: Local Authorities and the Energy Crisis***, 48 pages.

The purpose of this report is to summarize which local authorities are doing what, and to draw together the most promising policies for tackling peak oil, so that all British local authorities can benefit from best practices being developed both at home and abroad. Almost every area of policy is affected, from transportation to land use planning to social services. The report is especially relevant for councils affected by the planned expansion of Britain's airports: mass air travel is likely to be an early casualty of peak oil.
The policies suggested to mitigate peak oil are usually complementary to those required to combat global warming, but there are also important distinctions that may affect the decisions made by local authorities. This is particularly true of natural gas, where supply difficulties are also expected soon. Whatever the motivation of a particular council – climate change or peak oil – many of the suggested policies can also reduce expenditure almost immediately simply by saving energy.

Source : http://www.odac-info.org/sites/odac.postcarbon.org/files/Preparing_for_Peak_Oil.pdf

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- *Annales de la Recherche Urbaine*, n°103 , septembre 2007, **Les villes dans la transition énergétique**.

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-Energie Cités, 2009. ***Actions énergie-climat en Suède*,** Energie Cités, 59 pages.

La dynamique de réseau tissée en Suède, notamment dans les villes de Kristianstad, Växjö, Malmö et Lund.
Kristianstad : l'approche typiquement suédoise de la filière biocarburants locale dans la stratégie de lutte contre le réchauffement climatique.
Växjö : le concept de Fossil Fuel Free City. Ville dans laquelle de nombreux projets ont été menés en partenariat avec Energie-Cités, exemple emblématique de réussite à travers l'engagement des acteurs locaux régulièrement cité en exemple en Europe et au delà.
Malmö, une des grandes métropoles suédoises : zoom sur la communication et la stratégie liées à la mobilité urbaine afin d'éclairer l'approche transversale que la ville adopte dans le cadre de sa politique énergie-climat.
Lund : rôle important au sein de plusieurs réseaux de villes et participation à de nombreux échanges d'expérience. En outre, elle a adopté une politique de mobilité ambitieuse et a mis en place un système de management environnemental au sein de l'administration territoriale.

Dossier réalisé avec le soutien de l'ADEME.

Source : http://www.energie-cites.org/IMG/pdf/dossier_suede_COMPLET_fr.pdf

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-Energie Cités, 2005. ***Un Plan Climat à l'échelle de mon territoire,*** Guide ADEME, 36 pages.

Source: http://www2.ademe.fr/servlet/getDoc?cid=96&m=3&id=39672&p1=01&p2=04&ref=17597

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-Etd, 2006. **Les politiques énergétiques territoriales**, Etd, 44 pages.

Effet de mode ou prise de conscience ? De plus en plus de pays et d'agglomérations mettent en place des actions en matière d'énergie. ETD vient d'analyser 15 cas de territoires de projet (7 pays et 8 agglomérations) afin de rédiger une note. Celle-ci montre la grande diversité des actions mises en oeuvre ainsi que la nécessité d'informer et de sensibiliser les acteurs et d'inscrire ces actions dans la durée pour parvenir à élaborer des politiques énergétiques territoriales.
Source : http://www.projetdeterritoire.com/index.php/plain_site/Publications/Notes-d-ETD/(selection)/840

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-Lacassagne S., Maurer C., 2004. ***Energie et territoires : 24 exemples de bonnes pratiques***, Etude Energie-Cités pour le compte de l'ADEME, 126 pages.

Ce document a pour objectif principal d'illustrer, au travers de 24 exemples, la manière dont est prise en compte la dimension énergie dans des territoires français. Il n'a pas vocation à être exhaustif mais à donner des pistes de réflexion à partir d'actions entreprises à l'échelon local. Certaines d'entre elles sont récentes alors que d'autres sont issues d'un processus d'apprentissage plus long. Cette approche, complémentaire de celle par secteurs consommateurs d'énergie permet d'élargir et d'enrichir le champ d'action dans des domaines liés à l'énergie, lesquels domaines ne sont pas toujours considérés comme tels par les acteurs locaux : urbanisme, mobilité et transports, ressources locales, gestion des flux, etc. Elle offre aux acteurs locaux de nouvelles perspectives d'action et de développement.

Les politiques énergétiques à l'échelle d'un territoire sont mises en place grâce à une concertation entre différents acteurs locaux : les communes, les groupements de communes, les nouveaux territoires de projets, les agences locales de l'énergie et les syndicats d'énergie. Les actions ainsi mises en oeuvre peuvent relever d'une approche globale (bilan énergétique et effet de serre de l'agglomération grenobloise, plan d'action et organisation interne à la Communauté Urbaine de Dunkerque, élaboration d'un Agenda 21 à Echirolles, mise en place d'un Plan municipal pour maîtriser les gaz à effet de serre à Chalon-sur-Saône, Charte du cadre de vie à Loos-en-Gohelle …) ou sectorielle (intégration des énergies renouvelables dans les quartiers urbains de Mulhouse, conseil énergie dans le patrimoine des communes du Pays Rochefortais, éolien dans le Haut- Vivarais, développement de l'énergie solaire à Illkirch-Graffenstaden, politique volontariste d'efficacité énergétique à Besançon, gestion des déplacements urbains à Nantes Métropole…). Ces actions peuvent aussi traduire une adaptation au contexte réglementaire : c'est particulièrement vrai pour le SIEL, le SIGEIF et le SIPERREC, trois syndicats d'énergies qui ont su moderniser leur activité traditionnelle. Ces actions peuvent aussi réunir sur un périmètre « original » l'intérêt des acteurs publics et privés (PNR du Pilat et PNR du Luberon, par exemple).
Le travail en réseau se révèle très utile pour fédérer des initiatives (réseau Alphéo en Auvergne, réseaux thématiques tels que AITF, AMORCE, FLAME ou ASCOMADE). En effet, il est crucial que les collectivités locales puissent partager leurs expériences et leur savoir-faire autour de bonnes pratiques, faire connaître leurs avis aux autres institutions et afin qu'ils soient reconnus et pris en compte dans la législation.

Source : http://energie-cites.eu/IMG/pdf/eda_energie_territoires_24bp-2.pdf

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-MIES, 2007. ***Plans Climats Territoriaux : des territoires en action,*** 21 collectivités en action dans la relève du défi climatique, 1er recueil d'expériences, 68 pages

Source : http://www.ecologie.gouv.fr/IMG/pdf/Recueil_MIES.pdf

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Service cantonal de l'énergie – ScanE, 2008. ***Plan directeur cantonal de l'énergie 2005-2009,*** République et Canton de Genève, Département du territoire, Département du territoire, 102 pages.

La première, consacrée aux aspects légaux et à la description des contextes international et national, résume les grandes orientations de la politique cantonale de l'énergie. Elle rappelle notamment les principes-clés de la Conception générale de l'énergie 2005-2009, qui sous-tend le Plan directeur. La seconde partie concerne le Plan directeur proprement dit. Elle décrit la mise en oeuvre des mesures liées à une meilleure gestion des ressources, principalement à travers l'utilisation rationnelle de l'énergie et le développement des énergies renouvelables. Ces mesures sont regroupées en 13 programmes d'action qui précisent les objectifs, les étapes et les moyens nécessaires ainsi que les partenaires concernés par leur mise en oeuvre.

Source :
http://etat.geneve.ch/dt/SilverpeasWebFileServer/PDE_f%C3%A9vrier_final_2.pdf?ComponentId=kmelia304&SourceFile=1208416487599.pdf&MimeType=application/pdf&Directory=Attachment/Images/&logicalName=PDE_f%E9vrier_final%202.pdf

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Urbanisme durable, morphologies urbaines

-Ahern J., 2007. ***Green infrastructure for cities: The spatial dimension,*** University of Massachusetts, USA, 17 pages.

Planning for sustainable cities is a complex process addressing the fundamental areas of economic, environmental and socially-equitable sustainability. This chapter focuses on the environmental area, with theories, models, and applications illustrating possible spatial configurations of a green infrastructure to support ecological and physical processes in the built environment including: hydrology, biodiversity, and cultural/human activities. Green infrastructure is an emerging planning and design concept that is principally structured by a hybrid hydrological/drainage network, complementing and linking relict green areas with built infrastructure that provides ecological functions. Green infrastructure plans apply key principles of landscape ecology to urban environments, specifically: a multi-scale approach with explicit attention to pattern:process relationships, and an emphasis on connectivity. The chapter provides theoretical models and guidelines for understanding and comparing green infrastructure approaches. International examples at multiple scales are discussed to illustrate the concepts and principles introduced.

Source : http://people.umass.edu/jfa/pdf/Chapter17_Ahern2%20copy.pdf

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-Bertaud A., 2004. ***The spatial organization of cities: Deliberate outcome or unforeseen consequence***?, 27 pages.

The raison d'être of large cities is the increasing return to scale inherent to large labor markets. Cities' economic efficiency requires, therefore, avoiding any spatial fragmentation of labor markets. In simpler terms, it means that all the locations where jobs are offered should – at least potentially – be physically accessible from the place of residence of all households within about an hour travel time. This requirement should be borne in mind when evaluating alternative urban shapes. Any type of spatial organization implying that residence and jobs should be matched individually – i.e. that workers need to have a good access only to their current job location – contradicts our premises that large competitive labor markets are efficient and that this efficiency alone justifies the complexity and high operating costs of large cities. Spatial indicators allow to compare cities' structures and to monitor the evolution in time of individual cities spatial organization. Urban spatial structures can be defined and compared by using a number of indicators related to average land consumption, to the spatial distribution of population and to the pattern of daily trips. Comparing the value of these indicators among cities shows amazingly resilient common features – such as the negatively sloped density and land price gradient – but also variations of several orders of magnitude – such as the land consumption per person between Asian and North American cities. Some spatial structures are more compatible than others with environmental and social objectives.
It is possible to establish linkages between spatial structure and city performance in various sectors? In this paper we look more particularly at the link between city shape and (i) transit use and motorization, (ii) air pollution due to transport and (iii) poverty. We found that dense contiguously urbanized and dominantly monocentric cities are favorable to transit and may significantly reduce trip length and as a consequence the total amount of pollutant emitted by transport. However, in the absence of adequate traffic management in the central parts of cities, the concentration of pollution might be higher in dense dominantly monocentric cities.
Dense monocentric cities have typically higher land prices and therefore tend to reduce the housing floor space and land consumption of the poor while they tend to provide better and cheaper access to most of the jobs. Can urban planners influence a city spatial structure? Should they? Should urban planners attempt to change a city's spatial structure in order to improve a city's performance in particular sector such as transport, environment or access to jobs by the poor? The chances to do so are rather limited and they are long range, but they nevertheless exist. A planner disposes of three tools to influence city shape: land use regulations, infrastructure investments and taxation. However, to be able to use these tools coherently, clearly established objectives must have been formulated by elected officials. Because there is no optimum city shape per se, a city shape can be "improved" only in relations to priority objectives. Priorities, however, may change with time, while cities shapes are very resilient.
Inadvertent changes in city shape caused by poorly conceived regulations or infrastructure investments are much more common than voluntary shape changes. Planners should conduct an audit of existing regulations to find if their combined effects on city shape are consistent with the municipal priorities. Do cities' shape tend to converge toward a standard spatial organization? Is there a global trend in the evolution of urban spatial structures? From the available empirical evidence it seems that large cities tend to become less monocentric and that as a consequence the share of transit is eroding in most cities of the world, in spite of heavy investments and subsidies. On the other hand, in cities of Europe and Asia, which have a deliberate

policy to provide adequate services in high density core and to invest in urban amenities – urban design, new theaters, museums, pedestrian streets, etc. – land prices in the city center tend to increase. This would indicate that the monocentric model is not dead or even dying and that the center of large cities can provide attractions which cannot be matched in the suburbs. However, city centers of large cities, however prestigious or attractive, contain only a fraction of the total number of jobs.
Telecommuting, which theoretically will do away with the need of face to face contact for a large variety of urban activities like jobs, shopping, education, and entertainment, has not yet had a marked effect on the structure of any city. It is all the more important to monitor the evolution of city shapes and the spatial aspects of the land market to detect any changes in locational demand due the information revolution.

Source : http://alain-bertaud.com/images/AB_The_spatial_organization_of_cities_Version_3.pdf

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-Bertaud A., 2001. ***Metropolis : A Measure of the Spatial Organization of 7 Large Cities,*** 22 pages.

A city is a very complex object. Its complexity is compounded by its constantly evolving shape and structure. To try to understand a city's inner mechanisms we have to develop models that are simple enough to be easily understandable but accurate enough to be operationally useful. This paper attempts to present this type of simplification. Our objective is to provide a tool that planners can use to implement municipal development strategies. These strategies may concern the quality of the environment, the efficiency of infrastructure network, the growth of employment, or housing affordability. The job of the urban planner is to identify the type of spatial organization that is compatible with the municipal strategy, and the regulatory tools and infrastructure investments that will allow a city to evolve from its current spatial organization to the one implied by the strategy.
The complex economic and social relations that gave rise to the emergence of large cities produce a physical outcome – the urban built-up space – which can be mapped and measured. While we may never know with precision the nature of the forces that produced the built-up space we are at least able to measure the end result. The new technology developed during the last 30 years – satellite imagery, digital mapping and geographical information systems – allow us to have a much better knowledge of the urban shape than was the case in the past. At the same time, because the number of megacities in the world is increasing rapidly, monitoring and managing their spatial expansion is much more complex than in the past.

Source: http://alain-bertaud.com/images/AB_Metropolis_Spatial_Organization.pdf

Site Internet de A. Bertaud : http://alain-bertaud.com/

-Chen Y., Deines M., Fleischmann H., Reed S., Swick I. 2007. ***Transforming Urban Environments for a post-peak oil future : A vision plan for the city of San Buenaventura,*** Department of Lanscape Architecture, California State Polytechnic University, Pomona, 281 pages.

This document can inform planning decisions at the regional, city, community, and household levels. The City of San Buenaventura and Ventura County can use this document as a reference tool for planning efforts, including General Plan updates and plans for new projects. The framework presented here can be adapted by other municipal governments to guide strategic conversations about a future without oil. This document also identifies guidelines that developers, entrepreneurs, and community members can use to assist in the transition from energy-intensive developments to post- Peak Oil communities.
PART I introduces the reader to the project goal, scope and context, and provides background information on the city of San Buenaventura and surrounding region.
PART II provides an in-depth analysis of eight critical community support systems, revealing their strengths and vulnerabilities in a post-Peak Oil context. Goals and objectives are generated for each system, which will be further explored in PART III. A scenario illustrates a probable future for the city and region based on information derived from the analysis, from feedback from a questionnaire sent to community members, and from assumptions gathered from current trends, projections, and historical and probable events.
PART III explores the project's conceptual overview and overarching strategies for design, demonstrates planning and design at the regional and city scales, and provides detailed guidelines for how to meet systems objectives for a post-Peak Oil community.
PART IV demonstrates transformative planning and design at the site scale, and provides a pictorial manifestation of a day in the life in San Buenaventura in the year 2050.
The APPENDICES offer additional resources that further explain the context and process of the Post-Peak Oil Vision Plan. These resources include a literature review of post- Peak Oil plans and additional readings that provide in-depth discussions of critical topics for post-Peak Oil planning.

Source:
http://www.cityofventura.net/files/public_works/maintenance_services/environmental_services/resources/post-peakoil.pdf

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-Cities and Climate Change adaptation - UN-Habitat Donors meeting Seville, 15-16 October 2008, 4 pages.

Source :
http://www.unhabitat.org/downloads/docs/5883_19704_Cities%20and%20Climate%20Change%20Adaptation.pdf

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-Clifton K., Ewing R., Knaap G.-J., Song Y.. ***Quantitative analysis of urban form: a multidisciplinary review*** Journal of Urbanism: International Research on Placemaking and Urban Sustainability, Volume 1, Issue 1 March 2008, pages 17 – 45.

This paper characterizes and reviews multidisciplinary approaches to urban form. It begins by classifying quantitative approaches to analyzing urban form into five classes: landscape ecology, economic structure, surface transportation, community design, and urban design. It then reviews quantitative measures in each class. Based on the review, four conclusions are drawn. First, over the last two decades substantial progress has been made in the ability to measure and analyze spatial patterns that help characterize urban form. Second, at multiples scales and for a variety of reasons, there are advantages to development that is mixed and compact. Third, normative principles and policies for addressing urban form need to be crafted at multiple scales and carefully designed to address the disparate issues that arise at each scale. Fourth, with so many disparate measures now used to operationalize the same constructs, it would advance urban form research to have some standardization in operational definitions and measurement protocols.

Source :
http://www.informaworld.com/smpp/section~content=a791742175~fulltext=713240928~db=all~start=791742605

-Coaffee J., 2008. ***Risk, resilience and environmentally sustainable cities,*** **School of Environment and Development, Faculty of Humanities, University of Manchester, UK**

In recent years, ideas of security and resilience have become increasingly embedded in urban planning and design practice, and in national security and energy policy, as attempts have been made to make the built environment and critical energy infrastructure more resistant to disruptive challenges. This has taken place with particular regard to the threat of climate change and to the security challenges faced by many cities as a result of the threat of terrorism. In this context, this paper explores the possible synergies between security and environmental issues, and policies connected to the planning, design, and engineering of the built environment. As the paper illustrates, there may be opportunities for further integration between these areas of concern.

Source : http://www.foresight.gov.uk/Energy/EnergyFinal/Coaffee%20paper-section%2010.pdf

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-Crawford J., French W. ***A low-carbon future: Spatial planning's role in enhancing technological innovation in the built environment,*** Royal Town Planning Institute, 5 pages.

The scope of spatial planning ctivity includes issues of governance, corporate organisation, policy integration, statutory and regulatory frameworks, and technical analysis and design. The nature of its potential contribution to achieving low-carbon built environments will vary according to there solution of tensions between pressures for leadership, consistent decision making and speed of change and the value placed on diversity, flexibility and innovation. A planning system that can support technological innovation will be characterised by high levels of organisational and institutional capacity and high-quality knowledge systems that support a focus on delivering place based objectives. The paper reflects on further aspects of such a system and the issues that spatial planning needs to address in delivering low-carbon energy systems.

Source : http://www.foresight.gov.uk/Energy/EnergyFinal/Crawford%20paper-scetion%208.pdf

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-Global Environment Centre Foundation, 2005. ***Eco-Towns in Japan - Implications and Lessons for Developing Countries and Cities,*** 84 pages.

Eco-Towns in Japan were developed in the last seven years by utilizing regional technologies and industries in Japan. Eco-Towns have a number of key features such as (a) strong legislation, shifting the market towards a sound material-cycle society, (b) national and local governments are spearheading the drive to bring together industry clusters to be more sustainable, (c) increasing product research and development – in both public and private sectors, including universities, (d) large and rapidly expanding eco-business market, domestically and internationally, (e) strong focus on environmental technologies and ESTs, and innovative/cutting-edge solutions to solve environmental problems, and (f) focus on energy conservation, material development and integrated waste management are also features of Eco-Towns.
Eco-Town concepts have recently expanded to include the 3R (Reduce, Reuse and Recycling) concepts and building an economy based on the life-cycle approach as well as accumulation of recycling facilities. The target of the 3R concept is to achieve sustainable consumption and production by means of information access, market creation and networking, policy and strategy development, application and implementation of ESTs, regional corporation, and building sustainable commitment (fig. 1-1). In addition to the 3R, Eco-Town concepts also involve green procurement, green consumerism, industrial ecology, extended producer responsibility, socially responsible investment, integrated waste management, green labeling, global reporting initiative, corporate social responsibility, EMS and ISO 14001. “Eco-Town” therefore becomes a defined area, a laboratory, where various different eco-concepts can be developed and implemented.

Source : http://www.unep.or.jp/Ietc/Publications/spc/Eco_Towns_in_Japan.pdf

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-Großmann K*. Declining cities – rising futures?* The future prospects for declining cities in relation to development paradigms (Germany), presented at “City Futures”, Chicago 07/2004, 28 pages.

Part of contemporary ideology and practice in many cities is the dominance of the growth paradigm and growth coalition in setting economic development policies. Nonetheless, many cities have lost population in recent decades, and more are projected to do so in the future. Changes in the global economy have altered regional economies. Urban sprawl left behind vast vacancies and distressed neighbourhoods in inner cities, while demographic shifts are changing population composition and population size. At present the growth paradigm is being questioned in different contexts.
This paper compares decline and shrinking in two cities, Pittsburgh in North America, and Chemnitz in Germany. Pittsburgh is long known for its economic restructuring in the face of the loss of its economic base in manufacturing and steel, meanwhile East Germany and parts of West Germany are new areas of decline, and for this paper, a focus on Chemnitz. Chemnitz was a manufacturing center of Germany, with specialties in tools and textiles and grew into the 1980s, with constant shortage of housing units. In 2000 the statistics show significant population decline and housing vacancies of 25 percent caused by suburbanization, declining birth rates, and net outmigration.

Source : http://www.eukn.org/binaries/eukn/eukn/research/2006/3/eukove004-tm-uic5-uz-060320.pdf

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-Hamin E.M., Gurran N., 2008**. *Urban form and climate change: Balancing adaptation and mitigation in the U.S. and Australia,*** 8 pages.

References and further reading may be available for this article. To view references and further reading you must purchase this article.

The science of climate change is now well established. Predicted weather-related events like sea level rise, increased storm events, and extreme heat waves imply an urgent need for new approaches to settlement design to enable human and non-human species to adapt to these increased risks. A wide variety of policy responses are emerging at local and regional levels – from sustainable urban form, to alternative energy production and new approaches to biodiversity conservation. However, little attempt has been made to

ensure that strategies to *adapt* to the inevitable impacts of enhanced climate change (such as additional open space to enable water inundation) support ongoing policies intended to *mitigate* local contributions to climate change (such as attempts to increase urban densities to reduce car dependency). In some cases mitigation and adaptation are complementary but in other cases these policy goals may conflict. This research examined leading case examples of land-use plans and policies designed to address climate change. Focusing predominantly on cases from the United States and Australia, we identified whether the policies address adaptation, mitigation or both and whether the practices put mitigation and adaptation in potential conflict with each other. We found that half of the actions identified contain potential conflicts to achieving adaptation and mitigation simultaneously.

Source: http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6V9H-4TY8W15-1&_user=10&_rdoc=1&_fmt=&_orig=search&_sort=d&view=c&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=33b3c2c9656d9015090d07047b519545

-Krawczyk E., Ratcliffe J., 2005. ***'Predict and Provide' vs. 'Explore, Envision and Plan': transforming the urban planning approach towards the future,*** The future Academy, Dublin Institute of Technology, 18 pages.

Thinking about the future of humanity cannot be separated from thinking about the future of cities. Today, half of the world's population lives in cities and the number of urban dwellers is constantly growing. On one hand, cities play a key role in generating economic growth; they are cores of human activity and frontiers of technological and cultural progress. On the other, urban areas are a source of a broad range of social and environmental problems and are especially vulnerable to the threats posed by factors such as climate change, terrorism, pandemic, social and cultural clashes. Considering the role and situation of cities today, it becomes evident that a change in ways of thinking and acting about the future of cities is required in order to ensure their prosperous and sustainable development in the future.
This paper argues that futures methodologies can stimulate that change by providing a fresh, systematic, imaginative and innovative approach for the examination of possible, probable and desirable urban futures. On the outset, the paper explores the reasons behind the recent growth of interest in the application of futures methodologies in urban planning. It discusses the shortcomings of the current planning approach towards the future and outlines in which way futures methodologies can assist communities and decision-makers in envisioning and creating the desired future. Finally, the authors present the Prospective methodology model that can be used to promote and facilitate the shift in ways of thinking and acting about the future of cities.

Source : http://www.thefuturesacademy.ie/sites/default/files/Predict-and-Provide-vs-Explore-Envision-and-Plan.pdf

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-LR, LEP, 2006. ***Towards Zero Carbon Developments: Supportive Information for Boroughs*****,** London Renewables, London Energy Partnership, 108 pages.

The main project aims were to develop a robust, broadly accepted working definition of zero carbon developments and, if possible, low carbon developments and to produce supportive information for London boroughs to aid them in the identification of suitable sites. Another main aim was to encourage use of the boroughs' powers as landowners and in forming partnerships with others to bring about zero carbon development. The study involved a stakeholder consultation exercise followed by a peer review meeting to further discuss the scope and content of the supportive information.
A general overview is given of the characteristics of a development or site which may be suited to zero carbon developments. These include locational characteristics such as areas with specific planning designation and certain geographical variables relating to renewable energy resources. The scale, type and land-use of a development are also assessed and how these relate to low carbon measures.
A discussion around choice of technology is included and covers general issues relating to community energy networks, combined heat and power, energy efficiency and renewables. A list of relevant case studies and a summary of the key characteristics of each is included in Appendix B. The supportive information suggests that, through new planning guidance and policy development, there exists a significant opportunity to set new standards for built
There is a need for a coordinated approach across borough departments in enabling zero carbon developments and officers from a variety of departments can contribute to the process. Opportunities available to boroughs include the facilitation of multisector partnerships to oversee projects and the potential to apply conditions to the sale of public land to ensure zero carbon development.

Source : http://www.london.gov.uk/mayor/environment/energy/partnership-steering-group/docs/LEP_towards_zero_carbon_developments.pdf

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-Metro Vancouver 2040, Shaping our future, **Regional Growth Strategy, Draft February 2009, 58 pages.**

Source:
http://www.metrovancouver.org/planning/development/LRSPreview/LRSPDocs/DraftRGSFeb2009.pdf

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-Ratcliffe J., Krawczyk E., 2004. ***Imagineering cities – creating liveable urban futures in the 21st century,*** The future Academy, Dublin Institute of Technology, 12 pages.

The 21st century is fast being recognised as the 'century of cities'. More than half of the world's population lives in cities now, and the importance of efficient urban land use and 'smart' development has become ever greater over recent decades. Cities are the key centres of human activity and the engines of economic growth in the world today. A world which has been drastically transformed by rapid technological change, expanding globalisation, profound cultural shifts and new economic perspectives. One, moreover, bring a whole range of fresh opportunities and challenges. Traditional ways in which cities were planned and managed increasingly turn out to be less relevant and less sustainable in such times of accelerating change and greater complexity in the global environment. The central thrust of this paper is around the adage: "Imagine ahead – plan backwards". The paper explores the challenges facing 21st century cities, their municipal governments and constituent planning agencies. It examines the role of different 'futures' approaches applied in order to assist urban planners and municipal decision-makers in dealing with the issues that lie ahead. It presents examples of different ways in which cities reposition themselves, envision their futures and deal with challenges and opportunities brought about by global and local change.

Source : http://www.thefuturesacademy.ie/sites/default/files/Imagineering-Cities.pdf

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-Ratcliffe J., Lorcan Sirr, 2003. ***Futures Thinking for the Built and Human Environment. The Prospective Process Through Scenario Thinking for the Built and Human Environment: a tool for exploring urban futures,*** Faculty of the Built Environment, The future Academy, Dublin Institute of Technology, 14 pages.

We are currently living through an era where we can, and need to, create exciting new possibilities in the way we think about, plan, design and build new places and spaces for working and living. At the same time, two irresistible forces – change and complexity – face decision-makers charged with framing and executing future policy and practice for the built and human environment. This paper generally argues the case for employing a 'prospective' process through scenario thinking for strategic planning and management in the urban arena. It does not attempt to identify or explore the advances made in planning for built and human environment over recent years or the promise of those to come. Rather, it describes and promotes a methodology which helps organisations, such as those involved in the formation of the urban environment, to learn their way into the future in a complex and changing world of uncertainty and ambiguity.

Source : http://www.thefuturesacademy.ie/sites/default/files/Futures-thinking-for-the-built-environment-and-human-environment.pdf

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-Ruth M. 2006. ***Smart growth and climate change: regional development, infrastructure and adaptation,*** publié par Edward Elgar Publishing, ISBN 184542509X, 9781845425098, 403 pages

This innovative volume systematically brings together two strands of applied research that, to date, have been carried out separately - `smart growth' research and climate change adaptability research. By providing theory, models, and case studies from North America, Oceania and Europe, the book creates synergies between the two strands, reconciles differences, and provides insights for decision-makers at national and local levels. The contributors to the volume draw on modeling tools complementary to both camps as they explore the issues surrounding: water and energy use, health, transportation, urbanization and regional development. Examples from around the world illustrate the relationships between regional land use, infrastructure development, quality of life and climate change. The contributors take special care to develop theory and models in real-world contexts as they emphasize both the science of climate change and its land

use management, policy and investment implications. In addition, they pay special attention to bridging the gaps that may exist among science and engineering, stakeholder interests, and policy implementation. Students, scholars and practitioners in the areas of geography, planning, land use, civil and environmental engineering, environmental economics, and policy will find the approaches and strategies in this volume of great interest.

Source: : http://books.google.fr/books?id=HDuLiNFtm7QC&printsec=frontcover&dq=%22Ruth%22+%22Smart+growth+and+climate+change:+regional+development,+...%22+&lr=

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-Shaw, R., Colley, M., and Connell, R., 2007.***Climate change adaptation by design : a guide for sustainable communities*****,** TCPA, London, 52 pages.

Created through a collaboration between the UK's Commission for Architecture and the Built Environment and the Town and County Planning Association, *Climate change adaptation by design* outlines how built environment professionals can adapt our towns and cities to the effects of climate change at the conurbation, neighbourhood and building scale.

Source : http://www.tcpa.org.uk/downloads/20070523_CCA_lowres.pdf

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-Smith C., Levermore G., 2008. ***Designing urban spaces and buildings to improve sustainability and quality of life in a warmer world,*** Built Environment Research Group, University of Manchester, UK, 5 pages.

It is in cities that the negative impacts of a warming climate will be felt most strongly. The summer time comfort and well-being of the urban population will become in creasingly compromised under future scenarios for climate change and urbanisation. In contrast to rural areas, where night-time relief from high day time temperatures occurs as heat is lost to the sky, the city environment stores and traps heat and offers little respite from high temperatures. This urban heat island effect is responsible for temperature differences of up to 7℃ between cities and the country in the UK. We already have experience of the potential hazards of these higher temperatures. The majority of heat-related fatalities during the summer of 2003 were in urban areas. This means that the cooling of the urban environment is a high priority for urban planners and designers. Proven ways of doing this include altering the urban micro climate by modifying its heat absorption and emission, for example through urban greening, the use of high-reflectivity materials, and by increasing openness to allow cooling winds. Buildings themselves can also deliver improved comfort and higher levels of sustainability by taking advantage of exemplary fac-ade, glazing and ventilation designs. In addition, changed behaviour by building occupants can help keep urban areas cool. The technology to reduce the future vulnerability of city dwellers to thermal discomfort is already largely inexistence. But there is a need for complementary policy and planning commitments to manage its implementation, especially inexisting buildings and urban areas.

Source : http://www.foresight.gov.uk/Energy/EnergyFinal/Smith%20paper-section%207.pdf

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-2030 Sustainable Sydney, 2008.

The City of Sydney needs a new strategic plan, underpinned by a visionary approach and focused on sustainability. The challenges facing the City mean that a dramatic and rapid shift in thinking and action is needed to secure the City's liveability and prosperity for current and future generations. The unacceptably high risk of global warming is fundamental to the need for bold and visionary action. National and international reports on climate change have reinforced that 'business as usual' is not an option. The world is moving towards dangerous climate change more rapidly than generally understood. Combined with other big picture forces—such as oil price rises associated with 'peak oil', a shifting global economic balance toward China and India, an ageing population and declining housing affordability—it is beyond doubt that incremental and ad hoc responses will not be sufficient.
A comprehensive and holistic plan for the City also requires a focus on the wider Sydney Region. The City is an employment and cultural focus for metropolitan Sydney and its sustainability is critical for Australia's prosperity. A strategic plan for the City has inevitable implications beyond the local government area.
Sustainable Sydney 2030 builds on current regional and state planning, including the state government's State Plan and Metropolitan Strategy, while responding to the evidence that more urgent and wide–ranging action is essential for sustainability. Effective implementation will depend on new systems of governance,

including partnerships with state and federal government, other local councils, education institutions and business organisations. It will require new ways to involve and empower the community.

Sources:
http://www.cityofsydney.nsw.gov.au/2030/documents/strategy/00_A_CITY_VISION1.pdf
http://www.cityofsydney.nsw.gov.au/2030/documents/strategy/00_C_CITY_FUTURES.pdf
http://www.cityofsydney.nsw.gov.au/2030/documents/strategy/01_COMPETITIVE.pdf
http://www.cityofsydney.nsw.gov.au/2030/documents/strategy/02_ENVIRONMENTAL_PERFORMER.pdf
http://www.cityofsydney.nsw.gov.au/2030/documents/strategy/03_TRANSPORT.pdf
http://www.cityofsydney.nsw.gov.au/2030/documents/strategy/04_WALK_CYCLE.pdf
http://www.cityofsydney.nsw.gov.au/2030/documents/strategy/05_CITY_CENTRE.pdf
http://www.cityofsydney.nsw.gov.au/2030/documents/strategy/06_LOCAL_COMMUNITIES.pdf
http://www.cityofsydney.nsw.gov.au/2030/documents/strategy/07_CULTURAL_CREATIVE.pdf
http://www.cityofsydney.nsw.gov.au/2030/documents/strategy/08_HOUSING.pdf
http://www.cityofsydney.nsw.gov.au/2030/documents/strategy/09_DEVELOPMENT_RENEWAL_DESIGN.pdf
http://www.cityofsydney.nsw.gov.au/2030/documents/strategy/10_GOVERNANCE.pdf
http://www.cityofsydney.nsw.gov.au/2030/documents/strategy/2030_draftdoc_Appendices.pdf

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-Turner & Townsend, Arup, 2006/2008. ***Feasibility study to examine making the Thames Gateway a low carbon/zero carbon development area***. Interim report - 19 pages and final report – 166 pages , Community and local Government Department, UK.

An interim report of an ongoing study to understand the magnitude of greenhouse gas emissions in the Thames Gateway and what changes are required to reduce them. This is a report on the first stage of a feasibility study commissioned to examine the changes that would be necessary to reduce greenhouse gas emissions arising from, or as a result of activities in the Thames Gateway. The report reviews definitions used in the existing literature such as “carbon neutral”, “zero carbon” and “low carbon”, to understand the basis for these definitions and how applicable they are to the study. It then sets out the scope of the feasibility study, and reviews local policies and the technical evidence needed to identify metrics, standards and targets likely to impact on the determination of a baseline and scenarios for an Integrated Resource Management model. The final section identifies the next steps in the study. Communities and Local Government commissioned Turner & Townsend and Arup to undertake a feasibility study to examine the changes that would be necessary to reduce greenhouse gas emissions arising from, or as a result of activities in the Thames Gateway. The Thames Gateway stretches for 40 miles along the Thames Estuary, with large areas of brownfield land. The government's targets for the Gateway include 120,000 new homes and 180,000 new jobs by 2016.
The research for this stage involved a review of the literature to identify definitions of the terms used. There was also a review of local policies and technical evidence to identify metrics, standards and targets. The policy documents examined included: regional spatial strategies; saved structure plans; saved local plans; draft local development frameworks; non statutory frameworks; national planning policy statements; national policy guides; and technical evidence related to these documents.
The term carbon neutral is found to describe offsetting of carbon emissions through renewable energy projects, but it has also been used to describe developments where carbon emissions are reduced through sustainable practices on site. Zero and low carbon definitions typically refer to buildings only. ‘Zero carbon’ is used when there are no net greenhouse gas emissions, whereas ‘Low carbon’ developments achieve at least a 50 per cent reduction in emissions. Since the study extends beyond energy use in buildings, to include waste, water, transport and logistics, it is concluded that the use of these existing definitions is not appropriate.

Source, interim report :
http://www.eukn.org/binaries/greatbritain/bulk/research/2008/4/feasibilitystudyexamine.pdf
Source, final report :
http://www.communities.gov.uk/documents/thamesgateway/pdf/1074136.pdf
Source, technical appendices :
http://www.communities.gov.uk/documents/thamesgateway/pdf/1074305.pdf

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-Urban Policy Support Team of the ODPM, 2006. ***Sustainable Communities European Evidence Review Papers,*** UK Presidency EU Ministerial Informal on March 2006, Office of the Deputy Prime Minister: London, 158 pages.

From the mid 1990s the Greater Helsinki Region has experienced an exponential growth both in its GDP and population, driven largely by the growth in the ICT sector and the rise of the knowledge economy. In order to deal with this growth, the region began to construct major urban and residential areas that contain well-designed workplaces and are well-served by infrastructure. After a period of deep recession, Finland had to deal with a fast growing economy and population, a housing shortage and energy conservation. These new urban areas are providing places for people to live in an ecologically friendly way. They provide a quality and natural environment whilst maintaining a flourishing and diverse local economy. This is exemplified by the district of Viikki, situated close to Helsinki. The area comprises the Science Park, a fast growing campus of the University of Helsinki, office blocks and residential units.
This case study was highlighted during the British presidency of the EU. It was specifically mentioned during the EU informal ministerial meeting at Bristol.
Overall, the Finnish planning system emphasises spatial and physical planning. The integration with regional development, economic and innovation policies is not an easy challenge. The Land Use and Building Act (1999) tries to address this co-ordination challenge. It attaches strong importance to ecological concerns and strongly encourages implementation of international environmental conventions regarding climate change, biodiversity and protection of cultural environment.
Results: A good example of the creation of an urban and residential area which has been planned as a response to the growth of population and the knowledge economy in the Helsinki region is the Viikki district:
-abstract terms like innovation and the knowledge economy can be a fruitful basis for developing attractive places where people want to live and work;
-the key principles for building in the area are ecological criteria relating emissions, natural resources and health factors;
-residents identified that communal saunas, allotments and gardens gave a sense of community and encourage interaction between residents;
-good environmental practices were introduced.

Source : http://www.eukn.org/binaries/eukn/eukn/practice/2006/6/bristol-case-studies.pdf

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-World Watch Institute, 2001. ***City Limits : Putting the Brakes on Sprawl,*** World Watch Report n° 156, 43 pages.

Today, every world region suffers from sprawling, car-choked urban areas. Accidents and pollution-related illness take lives, while traffic delays sap human productivity and waste fuel. Part of the reason that Americans now guzzle 43 percent of the world's gasoline is to wheel around expansive metropolises. Transportation, spurred by road traffic, is now the fastest-growing contributor to climate change.

Source : http://www.worldwatch.org/system/files/EWP156.pdf

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-CES, 2006. ***Les politiques de l'urbanisme et de l'habitat face aux changements climatiques,*** Avis et rapports du Conseil Economique et Social présenté par Mr Paul de Viguerie, 108 pages

La présente saisine gouvernementale nous demande de centrer notre analyse sur l'urbanisme et l'habitat et d'explorer les voies et moyens susceptibles de limiter les émissions de gaz à effet de serre dans ces secteurs. Cette diminution des émissions ne se fera pas sans un changement important des politiques publiques, des modes de production, de consommation et des comportements. Les Français sont-ils prêts à cette sobriété énergétique qui risquerait de changer leur perception de confort et de liberté individuelle s'agissant par exemple des déplacements en automobile ? C'est aussi à cette préparation de changement de culture que notre assemblée doit s'attacher.

Source : http://www.conseil-economique-et-social.fr/rapport/doclon/06050206.PDF
Source, Synthèse de 2 pages:
http://www.region-limousin.fr/2027/docs/politiques_urbanisme_habitat.pdf

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Chalon C., Clerc D., Magnin G., Vouillot H., 2008. **Pour un nouvel urbanisme : La ville au coeur du développement durable**, Yves Michel, Paris.

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-Energie Cités, 2008. ***Urbanisme - énergie : les éco-quartiers en Europe***, 36 pages.

Les exemples pratiques existants présentés dans ce dossier sont destinés aux autorités locales afin qu'elles puissent s'en inspirer pour construire des quartiers durables attrayants, sains et auto-suffisants. Le but de ce guide est donc d'identifier et de présenter des développements de projets éco-communautaires pionniers en Europe.
Interdépendants pendant longtemps, le développement territorial et l'approvisionnement énergétique sont dernièrement devenus étrangers l'un à l'autre, creusant un fossé significatif entre les tendances actuelles de l'urbanisme et ce qui serait souhaitable à l'avenir en matière d'énergie durable. Et si la solution résidait dans la réconciliation des développements local et régional dans le cadre d'un nouveau paradigme énergétique ? Il est certain que les autorités locales ont à jouer ici un rôle stratégique important.
Les exemples décrits dans ce dossier montrent le chemin. Les nouveaux quartiers qui se sont constitués ces dernières années dans des villes comme Hanovre, Freiburg, Helsinki, Londres et ailleurs sont tous des laboratoires pour notre futur. Tous conjuguent un processus de planification intégré avec des taux (très) bas de consommation énergétique et des niveaux élevés d'approvisionnement en énergies renouvelables et décentralisées. De plus, tous se sont attachés à faire valoir l'importance qu'ils accordent à la qualité de vie. Comment les autorités locales peuvent-elles s'inspirer de ces exemples et les appliquer à leurs propres territoires ?
Nous estimons que les divers exemples décrits – bien que complexes – sont tous adaptables et reproductibles par n'importe quelle autorité locale européenne.

Source : http://www.energie-cites.eu/IMG/pdf/ademe_eco_quartiers_fr.pdf

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-**Laigle L.,** 2009. ***Vers des villes durables. Les trajectoires de quatre agglomérations européennes***, Editions PUCA, Paris, 278 pages.

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-Maïzia M., 2002, ***Modélisation et systèmes urbains : une construction difficile*****,** 10 pages.

Les obstacles méthodologiques rencontrés dans le champ de la formalisation (et qui apparaissent de manière plus flagrante vu la rigidité du langage employé) ne peuvent être franchis en l'absence de consensus sur la définition de la durabilté (définition essentiellement d'ordre idéologique). Seule la formalisation fine mais raisonnable de l'ensemble de l'écosystème urbain peut mettre en évidence la multitude d'articulations entre les systèmes sectoriels et découler sur une appréhension globalisante. Les connections entre les différents thèmes abordés dans ce que l'on a choisi de baptiser l'écosystémique urbaine ne se font pas aisément. Il est actuellement impossible de proposer un modèle de système urbain intégré qui reconstituerait l'ensemble des articulations existant entre toutes les phénoménologies concernant l'environnement et entre toutes les caractéristiques physiques et socio-économiques de l'urbain. Or, la demande en matière de recherche sur le développement durable accélère ce processus d'intégration au risque d'employer des méthodes scientifiquement discutable.

Source : http://halshs.archives-ouvertes.fr/docs/00/12/92/79/PDF/modlisation_urbains_une_construction_difficiele.pdf

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-PUCA, 2007. ***Comment le PUCA se saisit de l'énergie? -*** Premier plan dossier Le journal d'informations du puca plan | urbanisme | construction | architecture n°15 octobre-décembre 2007, PUCA, PREBAT, 12 pages.

L'objectif du Plan Climat – assorti des nouvelles mesures découlant du Grenelle de l'environnement - est de ramener d'ici 2010 les émissions de gaz à effet de serre à leur niveau de 1990 et de les diviser par 4 à l'horizon 2050. Au-delà de nouvelles mesures réglementaires, les avancées passent aussi par un effort important, durable et finalisé de recherche, d'expérimentation et de diffusion de solutions nouvelles améliorant l'efficacité énergétique des bâtiments neufs et existants, résidentiels et tertiaires. C'est la mission du programme de
Recherche sur l'Energie dans le Bâtiment : le PREBAT. L'enjeu énergétique touche aussi bien les questions de conception, de construction, de renouvellement, d'entretien et de gestion énergétique. Il concerne les bâtiments, objet strict du PREBAT, mais aussi des îlots de bâtiments, des quartiers et des territoires, objet de l'action du PUCA. Constante des programmes de recherche et d'expérimentation du PUCA depuis de nombreuses années, cette approche à toutes les échelles du cadre de vie bâti vient d'être confortée par les

propositions issues du Grenelle de l'environnement : efficacité des bâtiments, villes et territoires durables y sont en effet abordés de front.

Source : http://rp.urbanisme.equipement.gouv.fr/puca/edito/PPlan15_Prebat.pdf

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-PUCA. *A la recherche de nouvelles formes d'habitat,* Atelier national, Villa urbaine durable, 12 pages.

Dans le sillage des ateliers de Paris, le 21 mars, et Rennes, les 12 et 13 juin, le troisième atelier «Villa Urbaine Durable » s'est tenu à Chalon-sur-Saône autour du thème suivant : comment renouveler l'habitat à l'heure du développement urbain durable ? C'était aussi l'heure du bilan pour la première phase du programme VUD2, lancé en 2006 et dont plusieurs projets de quartiers durables en sont déjà au stade du concours de maîtrise d'oeuvre. Autant de raisons pour évoquer les enjeux de la démarche de développement durable dans le domaine de l'urbanisme et de la construction, et dégager les lignes de force des actions à venir. Un exercice auquel l'ensemble des intervenants et des participants s'est livré avec rigueur et exigence.

Source : http://rp.urbanisme.equipement.gouv.fr/puca/edito/actes_Chalon2007.pdf

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-PUCA, 2007. ***Villes durables en Europe Entre enjeux de territoires et objectifs de développement durable,*** Premier plan dossier Le journal d'informations du puca plan | urbanisme | construction | architecture n°15 octobre–décembre 2007, 28 pages.

Le colloque « Villes durables en Europe », organisé par le PUCA et le CSTB, a eu lieu le 27 avril 2007. Il constitue un point d'étape de la recherche menée par le CSTB «Vers une planification urbaine de territoires durables », dans le cadre du programme exploratoire de recherche prospective en Europe lancé par le PUCA en 2004. Ce sujet d'actualité qui interpelle nombre de chercheurs et d'acteurs institutionnels a attiré environ 250 personnes venues du monde de la recherche, de collectivités territoriales et d'entreprises. La recherche «Vers une planification urbaine de territoires durables » sera publiée dans la collection PUCA-CERTU d'ici le printemps 2008.

Source : http://rp.urbanisme.equipement.gouv.fr/puca/edito/PPlan15_Villes_durables.pdf

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-Ville et recherche urbaine. *Densifier les périphéries*, Supplément premier plan n°15 novembre 2007 - Rennes - 12 et 13 juin 2007, 20 pages.

La 4ème édition des rencontres ville et recherche urbaine organisée par le Puca, en partenariat avec Rennes Métropole, a voulu favoriser l'échange entre chercheurs et acteurs autour du thème de la périurbanisation. A l'heure du développement durable, la question de l'avenir des périphéries est d'autant plus stratégique qu'il faut assumer la réalité de ces espaces périurbains comme de nouvelles figures de la ville, et s'interroger sur leur impact et leur coût environnemental. La seconde journée, un atelier a porté sur le programme «Villa urbaine durable » avec au coeur du sujet: l'acceptabilité de la densité par les habitants, l'émergence de projets de quartiers, l'économie du renouvellement urbain ou encore l'innovation architecturale

Source : http://rp.urbanisme.equipement.gouv.fr/puca/deuxjours/actes_rennes2007.pdf

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-Ville et recherche urbaine, *Quartiers durables, vers une ville viable*, supplément premier plan juin 2007, 28 pages.

Dans le même esprit que les premières rencontres de Rouen, consacrées à la ville en renouvellement, la deuxième édition des rencontres Ville et recherche urbaine, organisé par le PUCA et la ville de Grenoble, a favorisé l'échange autour des concepts émergents « d'éco-quartier » et de « quartier durable », en essayant d'aller au delà des mots pour comprendre ce qui motive aujourd'hui les villes dans la mise en oeuvre de ces opérations, pourquoi elles cherchent à les faire comprendre à leurs habitants et comment elles les font connaître aux autres villes.

Source : http://rp.urbanisme.equipement.gouv.fr/puca/deuxjours/actes_Grenoble2006.pdf

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-*Villa Urbaine Durable Premiers enseignements et perspectives*, Actes du colloque du 13 octobre 2005, 49 pages

Source : http://rp.urbanisme.equipement.gouv.fr/puca/agenda/colloque_vud_2005.pdf

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-Rumming K., *Developpement urbain durable – L'éco-quartier exemplaire de Hanovre-Kronsberg,* Ville de Hanovre, Allemagne, 12 pages.

Source :
http://www.hannover.de/data/download/umwelt_bauen/m/Hannover_Kronsberg_franz_bilder_6_061.pdf

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-Rumming K., 2003. ***Guide "Hannover Kronsberg – un modèle à vivre, un modèle à suivre",*** Altener DG TREN, Projet SIBART, 121 pages.

Dans ce guide, la procédure spécifique de planification mise en oeuvre à Kronsberg est présentée en détail. L'éclairage est mis sur l'explication des différents instruments d'urbanisme utilisés pour mettre en oeuvre des objectifs ambitieux. La mise en oeuvre de ces instruments a depuis été totalement justifiée, comme le démontre la qualité de vie élevée du quartier aujourd'hui. L'expérience acquise et la procédure mise en oeuvre à Kronsberg sont transférables à d'autres projets de développement, no seulement en Allemagne mais aussi à travers l'Europe.

Source : http://www.hannover.de/data/download/umwelt_bauen/g/Guide_du_quartier_de_Hanovre-Kronsberg.pdf

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-Unil - *Des quartiers durables pour une société à 2000 watts*, Vue sur la Ville, Mai 2008, n°20, 8 pages.

Source : http://www.crem.ch/publication/document/Vues%20sur%20la%20Ville%20n20-%20Dossier%20CREM.pdf

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-Urbia, n°4 : ***« Eco-quartiers et urbanisme durable »,*** juin, Lausanne, p 11-30.

Source : www.unil.ch/igul/page16470.html#2

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Bâtiments

-Foresight Sustainable Energy Management and the Built Environment Project : *Powering our Lives: Sustainable Energy Management and the Built Environment,* Government office for science, UK Government's Foresight Project - Future Report, 60 pages | Final Project Report, 213 pages.

The role of Foresight is to strengthen strategic policy making by embedding a futures approach across government. It analyses complex issues that cut across government departments, combining robust science with well-informed futures thinking, to inform policy development in government and elsewhere. The *Powering our Lives: Sustainable Energy Management and the Built Environment* project aims to explore how the UK built environment could evolve to help manage the transition over the next five decades to secure, sustainable, low carbon energy systems that meet the needs of society, the requirements of the economy, and the expectation of individuals. As part of this project, four scenarios were developed around the future of sustainable energy management and the built environment, outlining some major areas of future uncertainty as well as potential future challenges and opportunities.
This futures technical report is designed to provide information and insight into the *Powering our Lives* project development processes. The report covers the development of both the 'technology roadmapping' phase of the project (completed with the assistance of Cambridge University's Institute for Manufacturing) as well as the development of the scenario narratives, produced by Henley Centre HeadlightVision.
The Office for Public Management contributed initial research on the drivers of change influencing energy management and the built environment. This report is designed to provide an overview for non-experts in scenario planning and technology roadmapping processes.
This document focuses on the development of the scenarios. It also contains a mixture of tools, techniques and guidance to help policymakers, stakeholders and other interested parties interpret the scenarios and use them as part of a strategy or policy development process. It does not contain the full and final set of outputs from the project, which are covered in the final project report.

Source : http://www.dius.gov.uk/~/media/publications/F/futures_report
http://www.dius.gov.uk/~/media/publications/F/final_project_report

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-Oliveira L. A., Maïzia M.; Oliveira C.T, Melhado, Burrattino S., *« The integrated design process of building facade renovation: a French case study »,* Gestao & tecnologia de Projeto no Ambiente Construido, Vol.3. N°1, mai 2008, pp 14-25.

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-Wright A., 2008. ***What is the relationship between built form and energy use in dwellings ?*** - IESD, De Montfort University, 4 pages.

Energy is used in dwellings to provide four services: space heating, hotwater, lighting and to power appliances. This paper describes how the usage of energy in a UK home results from a complex interaction between built form, location, energy-using equipment, occupants and the affordability of fuel. Current models with standard occupancy predict that energy use will be strongly related to size and built form, but surveys of real homes show only weak correlations, across all types of dwelling. Recent research has given us insights into occupancy factors including preferred comfort, 'take-back' from the rmalefficiency improvements, and patterns of electricity use. Space heating is on a downward trend and is low in new dwellings. Energy use for lights and appliances, which is only weakly related to built form, is increasing. Strong legislation, combined with low-carbon technologies, will be needed to counteract this trend. Future challenges discussed include increases in real energy prices and climate change mitigation efforts, which are likely to improve the existing stock. Challenging targets are now in place for new housing to move towards low or zero energy and carbon standards. In the longer term, dwellings will demand less energy. Alternatives to gas for space heating will be increasingly common, including ground source heat and local combined heat and power (CHP) from biomass,while electricity could come from a more decarbonised electricity system. However, these improvements must be set alongside a demand for many new homes, demographic trends towards smaller households, and a more holistic approach to overall carbon use including personal transport.

Source : http://www.foresight.gov.uk/Energy/EnergyFinal/wright%20paper%20-section%207.pdf

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-IAURIF, 2008. ***Contraintes énergétiques et mutations urbaines.*** Cahiers de l'IAURIF n°147, 285 pages.

Contrairement aux idées reçues, c'est le bâtiment (habitat et tertiaire confondus) qui représente la plus grosse part des consommations énergétiques en Île-de-France (hors trafic aérien), soit plus de 60 % : deux tiers pour l'habitat et un tiers pour le tertiaire. C'est également le secteur où la consommation énergétique progresse le plus rapidement. La France s'étant engagée à réduire par 4 les émissions de gaz à effet de serre d'ici 2050, cela suppose que les collectivités locales soient sensibilisées et aient une bonne connaissance de la situation, des marges de progrès et des scénarios d'évolution. Le n°147 des Cahiers «Contraintes énergétiques et mutations urbaines» répond à ce besoin de bilan et de prospective. Il reprend les réflexions et conclusions des sept ateliers de prospective organisés en 2007 par l'IAU île-de-France et l'ARENE sur la problématique énergétique de l'habitat et des bureaux, des transports, des activités économiques, de la gestion de l'espace (formes et densités urbaines), de la production locale d'énergies renouvelables, en analysant aussi l'évolution des comportements. Ces travaux permettent aujourd'hui d'appréhender de manière plus pertinente le risque énergétique et les enjeux liés au changement climatique au niveau de l'aménagement d'une métropole comme l'Île-de-France.

Source : http://www.iaurif.org/fileadmin/Etudes/etude_385/cahier_147_01.pdf

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-Laurent M-H., 2007. ***Les besoins énergétiques des bâtiments. Les leviers d'action pour une meilleure maîtrise de la demande en énergie dans les bâtiments.*** Futuribles N°327, 02/2007, pp. 39-62, 23 pages.

Les politiques énergétiques européennes et nationales affichent toutes aujourd'hui un triple objectif de limitation des émissions de gaz à effet de serre, de performance économique des marchés de l'énergie et d'amélioration de l'indépendance énergétique. Pour atteindre ces objectifs, il convient d'agir à la fois sur l'offre et sur la demande, d'essayer sur ce second aspect particulièrement complexe d'améliorer l'efficacité énergétique, assurément des transports mais aussi des bâtiments. Et c'est de ceux-ci dont traite le présent article.
Ses auteurs commencent par rendre compte des principaux facteurs déterminant la consommation d'énergie des bâtiments (chauffage, production d'eau chaude, cuisson et électricité spécifique) en montrant comment ils ont évolué au cours des dernières décennies, puis quel est le potentiel d'économies réalisables à l'avenir.
Tout en présentant ainsi les progrès possibles, elles soulignent toutefois l'inertie du bâti, particulièrement du logement, et la faible vitesse de son renouvellement. Aussi explorentelles, en définitive, quelles sont les modalités qui permettraient, tout en les rénovant, d'améliorer l'efficacité énergétique des bâtiments existants.

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-Laurent M-H, Marchand C., 2008. ***Le bâtiment sans énergies fossiles ? Les bâtiments pourront-ils se passer des énergies fossiles en France à l'horizon 2050 ?*** Futuribles, N°343, 07/2008, pp. 79-100, 21 pages.

L'ère du pétrole bon marché semble toucher à sa fin et l'épuisement des ressources fossiles fait partie des scénarios possibles, pour ne pas dire probables, à l'horizon d'un demi-siècle, comme l'a montré le numéro spécial de Futuribles « Perspectives énergétiques et effet de serre » en janvier 2006. Si l'on ajoute à cela la nécessité de réduire les émissions de dioxyde de carbone dans un contexte de réchauffement climatique, il est grand temps, dans les pays développés, de réfléchir aux alternatives possibles aux énergies fossiles.
En France, une équipe d'EDF-R&D s'est penchée sérieusement sur cette question et a construit un scénario d'évolution vers des bâtiments (des secteurs résidentiel et tertiaire) ne faisant pas appel aux énergies fossiles, à l'horizon 2050. Ils présentent ici leur scénario, les hypothèses retenues (et les raisons de ces choix) et la stratégie requise pour y parvenir.
Après un état des lieux de la situation actuelle des bâtiments en France, dans le domaine énergétique, les auteurs détaillent leurs recommandations visant à améliorer l'isolation, l'efficacité énergétique, et le recours aux énergies renouvelables dans le bâti neuf et en rénovation. Ils montrent ainsi qu'en mettant en oeuvre les actions qu'ils préconisent, la France pourrait ne plus recourir aux énergies fossiles dans le bâtiment sans augmenter de façon significative la demande d'électricité, en réduisant, de surcroît, ses émissions de CO2 de 90 millions de tonnes par an. Ils soulignent enfin qu'une telle mutation est crédible à l'horizon 2050 : le secteur du bâtiment pourrait techniquement se passer des combustibles fossiles grâce à des économies d'énergie, un peu d'électricité et de biomasse supplémentaires, mais à condition de proposer des instruments financiers adaptés (pour inciter les ménages à investir davantage en ce sens).

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-Maïzia M., Traisnel J.P. ***« Prospectives à l'horizon 2030 et 2050 des consommations d'énergie dans le secteur résidentiel français/***Energy consumption in housing sector. Scenario 2030 and 2050 in France » in BARLES, S., MAÏZIA, M., SOUAMI, T., TRAISNEL, J. P. (eds.). Énergies et matières dans la ville : Les nouveaux enjeux de l'environnement urbain. Publication en cours (première version en cours de lecture par l'éditeur).

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-Maïzia, M., 2007. ***Prospective des consommations d'énergie et des émissions de CO2 dans l'habitat : les gisements offerts par les pompes à chaleur,*** Cahier du CLIP N°19 (entièrement consacré à cette contribution), Iddri, 50 pages.

Le logement ancien représente le principal poste de consommation d'énergie, notamment de chauffage, dans le secteur de l'habitat. Face aux enjeux de réduction par quatre des émissions de gaz à effet de serre (GES), la contribution des logements neufs pourtant de plus en plus performants reste faible du fait du renouvellement lent du parc ancien. On considère généralement la réhabilitation de l'habitat ancien comme le principal levier qui permettrait de réduire la facture énergétique du secteur résidentiel et son impact en termes d'émissions. Mais cette option n'est pas toujours possible, tout au moins, pas toujours suffisante. L'amélioration des équipements de chauffage, ou leur substitution, peut participer substantiellement à cette économie : les technologies de pompe à chaleur (PAC) font partie de ces leviers supplémentaires.
Les PAC constituent une alternative en matière d'équipement encore marginale au regard des parts de marché des autres types de systèmes de chauffage, notamment du gaz de réseau, de l'électricité et du fioul. Mais la croissance de ce secteur est spectaculaire, surtout en France, où l'on est passé de quelques centaines de PAC vendues annuellement il y a dix ans à plus de 37 000 en 2005, principalement dans la maison individuelle neuve. Mais ce dernier segment n'est pas le seul à pouvoir profiter de ce nouvel intérêt. L'étude présentée ici cherche à mettre en évidence les divers gisements de maîtrise des consommations d'énergie et d'émissions de CO2 que les PAC pourraient exploiter. Cette quantification tente de tenir compte le mieux possible des spécificités du parc de logement français dans sa constitution comme dans sa dynamique.

Source : http://halshs.archives-ouvertes.fr/docs/00/13/35/56/PDF/pompechaleur.pdf

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-Traisnel J.-P., Maïzia M., Roditi, D., ***« Habitat et développement durable, les perspectives offertes par le solaire thermique »***, Cahier du CLIP N°16, Sept. 2004, 48 pages.

Cette étude s'inscrit dans le courant des réflexions cherchant à préciser les priorités et les modalités d'une stratégie de réduction substantielle des émissions de CO2 à long terme, de type « facteur 4 » à l'horizon 2050.
Dans une étude précédente, l'auteur traite de la réhabilitation du parc des logements existants, qui doit devenir une priorité des politiques publiques si l'on souhaite réduire significativement les émissions de CO2 du secteur résidentiel. Dans cette seconde étude, sont évaluées les réductions d'émissions que pourrait apporter un développement ambitieux du solaire thermique, grâce aux apports solaires passifs, aux planchers solaires directs et aux chauffe-eau solaires

Source : http://halshs.archives-ouvertes.fr/docs/00/09/74/79/PDF/habitatperspectives.pdf

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-Maugard A., Visier J-C, Quénard D., 2005. ***Le bâtiment à énergie positive*****,** *Futuribles*, n°304, 01/2005, pp. 39-55, 16 pages.

Le réchauffement climatique et les risques de pénurie d'énergies fossiles sont deux des enjeux majeurs auxquels les sociétés modernes, et la planète dans son ensemble, auront à faire face au cours du XXIe siècle. Outre les nécessaires efforts à faire en termes de consommation individuelle, de transports ou de techniques de production industrielle, un secteur conserve encore d'importantes marges d'amélioration de ses capacités en matière énergétique : celui de l'habitat.
Comme le montrent, dans cet article, trois acteurs du secteur travaillant pour le CSTB (Centre scientifique et technique du bâtiment), de nombreuses techniques existent déjà et pourraient encore progresser concernant d'une part le renforcement des économies d'énergie, d'autre part le développement de capacités autonomes de production d'énergies renouvelables, dans les habitations.

L'utilisation de matériaux spécifiques (capteurs solaires, doubles vitrages, isolants...), le développement des « bâtiments à énergie positive » : autant de pistes techniques proposées par ces spécialistes de la question, qui montrent combien le secteur de l'habitat est sousexploité pour l'amélioration du bilan énergétique, en France en particulier (l'Allemagne et la Suisse étant très en avance en ce domaine). D'où un certain nombre de propositions, ici formulées, visant à encourager les pouvoirs publics à mettre en place divers dispositifs d'incitation des citoyens à opter pour un habitat « intelligent » du point de vue énergétique.

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-PREBAT, 2007. ***Comparaison internationale Bâtiment et Energie,*** ADEME, PUCA, CSTB.

Le projet **Comparaison Internationale PREBAT** correspond à l'état de l'art jugé prioritaire par le protocole. Il a pour objectif de tirer des enseignements pour la France de l'analyse de bonnes pratiques étrangères de recherche et opérationnelles pour des bâtiments neufs et rénovés à forte performance énergétique.

Ce benchmark de bonnes pratiques internationales porte sur :
-**des programmes d'opérations performantes en Allemagne** («Passivhaus», «Maisons 3 litres», «EnSan», «Maisons basse énergie dans l'existant»)**, en Suisse** («Minergie®»)**, aux Etats-unis** (programmes «Building America», «Zero Energy Homes», label « Leadership in Energy and Environmental Design (LEED™) »)**, au Japon** (maisons photovoltaïques à basse consommation)**, en Espagne** (ordonnance solaire thermique) **et au Danemark** (éco quartier rénové de Vesterbro à Copenhague).
-**des composants et équipements innovants relatifs à l'optimisation de l'enveloppe** (systèmes constructifs, parois opaques et transparentes performantes)**, au développement du solaire** (photovoltaïque intégré, systèmes solaires combinés chauffage eau chaude, stockage de chaleur)**, à l'utilisation efficace des énergies fossiles** (ventilation double flux avec récupération de chaleur, systèmes compacts ventilation-chauffage-eau chaude sanitaire, climatisation et rafraîchissement basse consommation, micro-cogénération)**, aux micro-réseaux de chaleur, à l'éclairage performant,** et au-delà de chacune de ces techniques, **l'approche intégrée des technologies**.
-**les programmes de recherche développement autrichien, hollandais et finlandais.**
Il met aussi en évidence **le foisonnement d'initiatives françaises** qui ont vu le jour depuis deux ans sur des bâtiments -neufs ou rénovés- à basse consommation d'énergie. Pilotée par le CSTB, élaborée sur la base **d'une méthode d'analyse socio-éco-technique**, par 55 ingénieurs, économistes, sociologues de 12 pays différents, cette comparaison internationale est un document de référence du PREBAT pour la mise en oeuvre du **Grenelle de l'Environnement** dans le domaine du bâtiment.

Source : http://www.prebat.net/benchmark/benchmark.html

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-PUCA, 2008. ***L'habitat existant dans la lutte contre l'effet de serre, évaluer et faire progresser les performances énergétiques et environnementales des OPAH***

La recherche-action/expérimentation : «évaluer et faire progresser les performances énergétiques et environnementales des OPAH » menée conjointement par le PUCA et l'Anah a pour objectif de cerner les freins à la performance énergétique des logements, de construire un argumentaire dont les animateurs d'OPAH pourront se servir pour encourager les propriétaires à effectuer des travaux relatifs à la maîtrise de l'énergie et de promouvoir les outils susceptibles de surmonter ces blocages. Pour répondre aux objectifs visés, une expérimentation a été mise en oeuvre en s'appuyant sur trois réseaux d'opérateurs d'OPAH : Habitat et Développement, Pact-Arim et Urbanis. A partir des OPAH déjà réalisées ou en cours, ces réseaux ont organisé avec le concours de Tribu Energie une remontée des informations utiles à une analyse énergétique des travaux réalisés ou envisagés. Ce travail de recueil d'informations a été structuré par la procédure du Diagnostic de Performance Energétique [DPE] afin d'une part, de fournir aux opérateurs-terrains un outil et une méthode assez facilement maîtrisable, et d'autre part, d'utiliser une échelle de performances énergétiques existante et reconnue. télécharger le rapport intermédiaire Phases 1 et 2 (document PDF - 2 142 Ko). D'autre part la dynamique et les résultats de l'évaluation énergétique des OPAH ont d'ores et déjà permis à l'ANAH de travailler sur la modélisation des performances thermiques du parc de logements existants et d'en discuter les hypothèses et les principaux résultats au travers une publication commandée par l'ANAH à Julien Marchal de l'E.N.P.C. : Quelles hypothèses et quels résultats du modèle sur les performances thermiques du parc de logements en 2008 ?

Source :
www.anah.fr/nos-publications/etudes/pdf/synthese_performances_energetiques.pdf
www.anah.fr/nos-publications/etudes/pdf/rapport_performances_energetiques.pdf
www.anah.fr/nos-publications/etudes/pdf/modelisation_performances_energetiques.xls

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-Sidler O., 2007. ***Renovation à basse consommation d'énergie des logements en France*****,** Projet « RENAISSANCE », Programme européen CONCERTO, Enertech, 81 pages.

Cette étude est une proposition d'action fondée sur une très bonne connaissance du monde du bâtiment, sur la réalité de ce monde (ses atouts mais aussi ses limites), sur le portage depuis 2003 de ce programme d'action auprès des cabinets ministériels, des fédérations professionnelles, des industriels, des organismes bancaires, sur la présentation de ce programme au cours d'innombrables conférences et formations. Ces rencontres multiples ont évidemment favorisé le débat et les échanges. Mais ce programme est aussi fondé sur une présence concrète sur le terrain au travers de nombreuses réalisations très performantes, sur une très bonne connaissance pratique de la maîtrise de l'énergie.

Source:
http://www.negawatt.org/telechargement/Docs/Sidler%20Renovation%20final%201107.pdf

Mobilité durable/Transports

-DfT, 2005. ***Home Zones – Challenging the futur of our street, Department for Transport,*** 100 pages.

Home Zones are residential streets designed as places for people, not just vehicles. Restoring the balance between traffic and communities can help make streets safer, more sociable, and better places to live in. Where successfully implemented, Home Zones have led to stronger, more vibrant and diverse communities, fewer empty properties and even reduced crime. One notable example is in Morice Town in Plymouth. Here residents say that their Home Zone has generated a new feeling of community and is improving the quality of life, making local journeys safer and contributing to the well being of the local population. The Department's Home Zones Challenge programme has demonstrated what benefits can be delivered and highlighted issues to be considered when developing Home Zones. In Home Zones: Challenging the future of our streets we have drawn together these lessons. It aims to disseminate good practice in Home Zone design and scheme development complementing design guidance already published. It is not intended to be a design manual that provides a blueprint for Home Zones. Every scheme will, and should, be different. This document aims to disseminate good practice in Home Zone design and scheme development, drawing on experience from the Home Zones Challenge. It complements design guidance already published.

Source : http://www.dft.gov.uk/pgr/sustainable/homezones/cfos/zoneschallengingthefutur5739.pdf

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-Ministère des Affaires municipales et des Régions (MAMR), 2005. ***Reduction of Greenhouse Gas Emissions and Land Use Planning – Best Practices Guide,*** Québec, Canada, 77 pages.

Greenhouse gas emissions can be reduced through a form of urbanization that makes it possible to reduce automobile trips. In order to reduce the number of trips, a new urbanization model for Québec, Canada, is proposed. The guide focuses on urbanization models that are likely to reduce pollutants produced by the transportation sector, the leading source of greenhouse gas emissions of human origin in Québec. In this perspective, it emphasizes urbanization management strategies that can have an impact on the choice of transportation mode, the distances travelled and the number of automobile trips in urban areas. The guide also defines complementary development strategies pertaining to transportation infrastructure, urban forests and green spaces. The guide is intended specifically to:
-review the issues related to climate change and the need to reduce greenhouse gas emissions;
-promote strategies that help to reduce greenhouse gas emissions;
-show how planning, regulatory and other tools of land use planning and development can be used to implement such strategies;
-present case studies of Québec municipalities where land use planning strategy initiatives contribute to the reduction of greenhouse gas emissions.

Source : http://www.eukn.org/binaries/eukn/eukn/research/2006/3/greenhouse-gas-quebec.pdf

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-URBACT programme, 2005. ***Building Sustainable Urban Communities,*** European Regional Development Fund, 69 pages.

The study focuses on the mobility and diversification of population in three large urban areas of the EU (Berlin, Brussels and London) and their impact on the provision and delivery of services by local authorities. The aim of the research is to improve understanding of the patterns of mobility in three large EU cities and analyse the implications of residential turnover for the effectiveness and responsiveness of services provided at local level. This study also aims to identify and address the factors contributing to the balanced and sustainable development of urban communities and to the successful tapping of the potential of deprived city neighbourhoods. It does so by looking at the services local authorities provide to their populations and at how changing local demands are influencing provision and its cost. This report is based on the research carried out by Berlin, Brussels and London under the URBACT funded study "Building Sustainable Urban Communities".
Conclusions:
-Working transnationally has contributed towards joint reflections on the issue of population mobility and on

the role that European, national and local regeneration initiatives can play, by drawing on concrete local experience.
-The study facilitated an exchange of ideas and experience on specific topics related to the issue of population mobility in the three partner countries.
-The study aims to lead to improved policy delivery and local service provision in the partner cities, as well as to the identification of transferable best practice.

Source : http://www.eukn.org/binaries/eukn/eukn/research/2006/3/building_sustainable_communities_-_final_report.pdf

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-Aguilera-Belanger A., Bloy D., Buisson M-A, Cusset J-M, Mignot D., 1999. ***Localisation des activités et Mobilité,*** Laboratoire d'Economie des Transports, 275 pages.

Dans une première partie est présenté le tissu économique de la région lyonnaise et son évolution à partir d'une analyse basée principalement sur la localisation des établissements. Cette analyse est à la fois sectorielle, spatiale et temporelle. Elle permet d'identifier les principales tendances de l'évolution des localisations des entreprises sur le territoire étudié. Elle est complétée par une étude de l'impact sur le territoire de l'évolution organisationnelle des firmes. Dans un système économique en pleine restructuration, les reconfigurations des entreprises se traduisentelles par des stratégies de localisation ou de relocalisation spécifiques ? Enfin à partir de cette analyse générale il est possible d'avancer quelques éléments de réponses par rapport aux questions initialement posées et d'exposer les bases à partir desquelles un approfondissement par enquête semble nécessaire.
Dans une seconde partie sont présentées, à partir de l'enquête, les stratégies de localisation des entreprises. L'enquête elle-même et ses principaux résultats sont analysés, ensuite ces résultats sont plus précisément étudiés par secteurs en tenant compte aussi bien des stratégies de localisation que des stratégies de délocalisation, puis pour les différents pôles de la zone d'étude.

Source : http://portail.documentation.equipement.gouv.fr/documents/dri/RMT99-005.pdf

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-Carré J-R, Mignot C., 2003. ***Écomobilité : Les déplacements non motorisés : marche, vélo, roller..., éléments clés pour une alternative en matière de mobilité urbaine,*** Transport recherche innovation, Résultats des recherches menées dans le cadre du PREDIT II (1996-2002), INRETS, 77 pages.

Sur le sujet de la mobilité « non motorisée », la France souffrait d'un certain retard (tant dans l'étude que dans la réalisation) par rapport à ses voisins et notamment ceux de l'Europe du Nord. Si ce retard n'est pas totalement comblé, il est aujourd'hui largement réduit grâce justement à ces travaux entrepris dans le cadre du PREDIT. Ces travaux qui ont su tirer parti de ce qui a été réalisé à l'étranger, ont également mis en évidence les spécificités de la situation française et l'originalité de certaines solutions adoptées en France.
Toutefois, on a pu constater que les résultats des travaux des recherches PREDIT menées pendant cinq ans sur le thème de la mobilité non-motorisée étaient totalement méconnus en dehors de notre pays. Cette publication bilingue est destinée à faire connaître au-delà de nos frontières les résultats obtenus par ce programme de recherches.

Source : http://www.innovations-transports.fr/IMG/pdf/RMT03-035VF.pdf

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-Clément P., (ss dir.) 2001. ***Transports et Architecture du Territoire, Etat des lieux et Perspectives de Recherche,*** Rapport de recherche, DRAST, PREDIT 1996-2000, IPRAUS, 175 pages.

Le rapport comprend la synthèse et le compte rendu des quatre séminaires de recherche. La synthèse articule deux parties: la première concerne l'organisation des territoires et comprend trois chapitres qui portent respectivement sur les liens entre mobilité et territoire, sur les rapports entre infrastructures de transport et territoires et sur les lieux de la mobilité. La seconde partie traite des questions de politique et d'aménagement du territoire.
La lecture des tendances de l'urbanisation contemporaine distingue deux aspects. Les relations entre trafic, mobilité et distribution des activités font l'objet du premier chapitre. Le second chapitre précise les relations entre infrastructures et territoires de trois points de vue: sous l'angle des liens entre développement et infrastructures, sous l'angle des liens entre grands équipements de transports et réorganisations territoriales en cours et, enfin, la voirie est envisagée comme interface entre réseau et territoire. Ce troisième chapitre est consacré aux lieux du transport insiste sur la notion d'espace public au centre d'une réflexion sur les équipement contemporains.

La seconde partie du travail concerne l'urbanisme et la planification. L'investissement important des villes et de l'Etat en faveur des transports collectifs n'enraye pas le développement du parc automobile, ni l'usage de la voiture individuelle. L'exigence d'une domestication du système automobile et l'étude des conditions d'un report modal, appellent à réfléchir sur les conditions favorables à ce report au niveau des politiques, des processus de décision et des outils. Cette interrogation oriente la réflexion sur les possibilités d'une urbanisation différente. Le dépassement observé des logiques sectorielles et technocratiques qui ont guidé les planifications des transports déplace aussi le questionnement sur la nature politique du processus de planification, y compris celui des transports.
Ce texte est le résultat d'une démarche qui vise à ouvrir le champ de questionnement dans une perspective de projet de territoire. Les questions centrales de la recherche urbaine et architecturale et le renouvellement de la question des transports proposée par d'autres disciplines ont permis de structurer la recherche et de préciser la spécificité d'une approche architecturale des transports.

Source : http://portail.documentation.equipement.gouv.fr/documents/dri/RMT01-056.pdf

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-ENET.DOLOWY, Architecture et Urbanisme, *Impact de la mobilité sur les formes urbaines et architecturales,* Ministère de l'Equipement, du Logement et des Transports, PREDIT 2.

Dans un monde de mobilité généralisée, de grande vitesse, des phénomènes inédits dans l'histoire humaine se produisent, en court et long termes, sur le développement des villes et même du construit. Le premier chapitre rappelle les grandes théories ou utopies urbaines ayant ponctué le développement de la mobilité. S'appuyant sur un important fond littéraire, de Cerdà à Koolhaas en passant par Haussmann, Le Corbusier ou Archigram, ce volet permet de brosser l'état de l'art en matière d'urbanisme, en fonction des progrès de la mobilité. Le second chapitre se propose, à travers l'analyse des secteurs des entrées de ville et de la gare de Nantes et de Rennes, de déterminer quels impacts les formes récentes du déplacement, depuis l'introduction du chemin de fer au XIXème siècle jusqu'à nos jours, ont produit sur la forme de nos villes et agglomérations. La dernière partie se penche enfin sur l'impact de la mobilité sur la forme bâtie, c'est-à-dire à quels niveaux, s'il en existe, se traduit la présence de flux, de mouvements, voire de nuisances liées aux déplacements urbains, sur la production architecturale.

Source : http://developpementdurable.documentation.developpement-durable.gouv.fr/documents/Urbamet/0254/Urbamet-0254627/CETTEXST005041_1.pdf
http://developpementdurable.documentation.developpement-durable.gouv.fr/documents/Urbamet/0254/Urbamet-0254627/CETTEXST005041_2.pdf
http://developpementdurable.documentation.developpement-durable.gouv.fr/documents/Urbamet/0254/Urbamet-0254627/CETTEXST005041_3.pdf

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-Genre-Grandpierre C., Foltête J-C., Morphologie urbaine et mobilité en marche à pied - 3ème colloque du Groupe de Travail Mobilités spatiales et fluidité sociale (GT23) : Offre urbaine et expériences de la mobilité, Strasbourg, France 20-21 et 22 mars 2003, Cybergéo, 21 pages.

L'objectif de ce travail est de mieux comprendre les déterminants de la mobilité quotidienne en marche à pied. Il est fondé sur l'hypothèse selon laquelle la morphologie urbaine conditionne partiellement les comportements de mobilité piétonnière en définissant la qualité de l'accessibilité à pied. La vérification de cette hypothèse s'appuie sur des données originales portant sur les déplacements pédestres quotidiens à Besançon et à Lille. Ces données décrivant les pratiques en marche à pied, y compris les parcours empruntés, ont été collectées grâce à deux enquêtes téléphoniques, puis implémentées dans un Système d'Information Géographique. Conformément à l'hypothèse de travail, il s'avère qu'une bonne qualité d'accessibilité pour le mode piétonnier au départ du domicile a tendance à favoriser quantitativement la pratique de la marche à pied. L'analyse des trajets possibles à réaliser à pied mais effectués par un autre mode conforte ce rôle de la structure, en montrant notamment que l'efficacité du réseau de voirie influence les pratiques piétonnières, en particulier le choix modal. Par ailleurs, l'intensité du trafic pédestre (qu'il soit local ou de transit) s'avère dépendre partiellement de la qualité de l'accessibilité piétonnière locale et ce d'autant plus que la structure urbaine s'organise autour d'un centre unique. Enfin, parmi les descripteurs de l'occupation du sol susceptibles d'expliquer la fréquentation des marcheurs, la fragmentation spatiale se révèle jouer un rôle important comme incitateur à l'usage de la marche.

Source : http://www.cybergeo.eu/index3925.html

-Groupe d'études des représentations de la mobilité et de l'espace, 1996. ***Comportements de mobilité***

et évolution de l'organisation urbaine, Ministère de l'équipement, des transports et du logement, DRAST, 115 pages.

A l'origine de cette recherche se trouvait la préoccupation de savoir ce que l'allongement des déplacements devait à la politique d'aménagement, afin d'articuler les temporalités de l'aménagement et celles des déplacements. Il a été montré que l'accroissement localisé du trafic provient, non d'un surcroît de génération des déplacements, mais d'un allongement des trajets. L'importance et les modalités de réalisation de ces déplacements résultent pour une part de l'organisation urbaine existante et pour une autre part, du fait que les ménages ont de bonnes raisons de déroger à la règle qui voudrait qu'ils minimisent ces déplacements courants. Ils ne le font que dans une certaine mesure et pour appréhender cet écart, la notion d'« aire de choix » a été retenue, incluant des motivations psychosociales (travail, vie privée, habitat, consommation, loisirs, etc.) et des motivations liées à l'offre urbaine

Source : http://cat.inist.fr/?aModele=afficheN&cpsidt=104862

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-Huntzinguer H., 1998. **Prospective de la mobilité en Europe : Allemagne, Grande-Bretagne, Pays-Bas, Suisse**, 55 pages.

La croissance de la mobilité est un des phénomènes majeurs des sociétés modernes : aujourd'hui chaque français consacre près d'un sixième de son budget et plus d'une heure par jour de son temps aux déplacements - dont la distance, pour les seuls déplacements locaux, a plus que doublé en un quart de siècle. Il n'est donc pas étonnant qu'une telle évolution puisse susciter le débat et la réflexion prospective - et ceci à toutes les échelles, locale, régionale, nationale ou internationale.
Au moment où, en France, se mettent en place les plans de déplacement urbains et la loi sur l'aménagement du Territoire ; où se discutent les suites de la conférence de Kyoto sur l'effet de serre; où se mettent en place de nouvelles politiques de transport collectif (urbain et interurbain), il nous a semblé utile de faire un état des lieux des travaux de prospective fait récemment sur le thème de la mobilité dans quelques pays européens : ceux-ci sont, en effet, confrontés, comme la France, à la même difficulté de concilier développement économique et environnement, liberté des usagers et intérêts collectifs, droit au transport et augmentation des coûts.
En contrepoint de ces travaux européens synthétisés par Hervé Huntzinger, nous présentons, en annexe, les scénarios élaborés récemment par le service des études et statistiques du ministère de l'Equipement (DAEI), (à la suite des études déjà réalisées pour le Commissariat Général au
Plan). Comme on pourra le voir les résultats ne sont pas significativement différents de ceux de nos voisins, sauf, peut-être, dans le domaine du déplacement de personnes. Les évolutions récentes de la politique des transports (décentralisation des réseaux régionaux de la SNCF, attention accrue portée aux problèmes environnementaux, etc.) témoignent d'ailleurs d'une certaine convergence avec les préoccupations qui émergent en Europe

Source : http://www.recherche-innovation.equipement.gouv.fr/IMG/pdf/Chantiers_2001_n_45_cle0eae49.pdf

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-Kaufmann V., 1999. **Mobilité et Vie Quotidienne : Synthèse et questions de recherche,** n°48 de « 2001Plus », 55 pages.

Le texte que nous vous présentons pour ouvrir cette série, est extrait d'une recherche exploratoire de l'INRETS, commandée par la “Mission Transports" de la DRAST, intitulée
“Mobilité urbaine et déplacements non motorisés : situation actuelle, évolution, pratiques et choix modal“. Consacré au thème de la mobilité dans la vie quotidienne, le document tente de faire un point aussi synthétique que possible de cette question et propose quelques axes de recherche pour le futur. S'ouvrant sur une définition claire des différents types de mobilité, il insiste sur la nécessité, pour la compréhension des mécanismes qui régissent les usages des différents modes de transport au quotidien, d'une approche transversale qui prenne en compte la morphologie urbaine, la sociologie de la famille, les inégalités sociales et les rapports entre la science et la société. A travers une analyse de ces quatre dimensions, l'auteur réussit à nous convaincre, d'une part du caractère essentiel du système de mobilité dans la constitution des modes de vie, et, d'autre part de leur importance centrale dans la définition des politiques de transports à l'échelle des déplacements quotidiens.
Constatant le relatif échec des politiques mises en œuvre pour pallier les conséquences d'une croissance non contrôlée du trafic automobile, il remarque que les savoirs théoriques sont, finalement, encore peu développés en matière de mobilité urbaine. Il propose donc de mettre l'accent sur “l'étude de la constitution spatiale des modes de vie en liaison avec les inégalités sociales, le parcours de vie familial, et le rapport aux

techniques de la vie quotidienne afin de mesurer la place et l'importance de l'automobile dans les modes de vie et de mettre en relief les pistes d'action possibles pour infléchir les tendances lourdes de la mobilité urbaine“.

Source : http://www.recherche-innovation.equipement.gouv.fr/IMG/pdf/Chantiers_2001_n_48_cle034ea1.pdf

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-Orfeuil J-P, Massot M-H, Bellanger F., 2000. ***Eléments pour une prospective de la mobilité,*** Centre de recherche ETEIL, 65 pages.

Depuis la "mise en ordre des faits et des idées" opérée par Alan Voorhes il y a 50 ans s'est développée une pratique d'analyse fondée sur des enquêtes (locales ou nationales) recensant les déplacements effectués par les personnes au cours d'une période donnée (en France, le plus souvent, le jour ouvrable). On a ainsi constitué un corpus cohérent d'observations qui permet de comparer dans le temps et dans l'espace, et d'objectiver à rythme régulier, des situations, de confronter des observations réelles aux discours dominants. Cette pratique a aussi des inconvénients. De façon implicite et peu consciente, le passage par les individus, qui n'est qu'une facilité méthodologique, les transforme en décideurs, comme si la mobilité n'était pas aussi socialement produite par les acteurs de l'offre de déplacements et d'activités. La mobilité est pensée par elle même et pour elle même, alors qu'elle résulte d'arbitrages impliquant un univers décisionnel plus large que celui des seuls déplacements, des seules personnes et des seules périodes d'enquête.
On rappellera néanmoins le schéma classique développé par Voorhes, car il est encore au fondement des raisonnements et des pratiques professionnelles) aujourd'hui:
La distribution des résidences et des activités dans l'espace est exogène. Les individus ont besoin de réaliser des activités différentes selon leur position dans le cycle de vie et selon leur niveau de vie (fonction de génération).Les lieux de réalisation de ces activités dans l'espace urbain dépendent de l'attractivité des zones pour ces activités et de la "résistance" qu'oppose l'espace (fonction de distribution). La résistance peur s'exprimer en distance ou en temps de parcours. Une fois le lieu choisi, on choisit le mode et l'itinéraire (phases de choix modal et d'affectation) les moins coûteux (en temps, en argent, en confort, etc.). Encore faut-il que ces modes soient disponibles, et à ce stade la disposition d'automobile et la possession du permis (elles-mêmes fonction du niveau de vie et du capital culturel) jouent un rôle crucial Les paramètres du modèle ayant été ajustés sur une situation donnée, alors la prévision des lieux de résidence et d'activités (dont la dynamique est supposée exogène) à long terme permet de déterminer le niveau et la structure des flux futurs sur un territoire et ainsi de prévoir et dimensionner les besoins d'infrastructures..
Trois points apparaissent essentiels à ce stade :
• 1. Le fait que les niveaux de mobilité (et d'accès aux modes) dépendent de la position dans le cycle de vie et du niveau de vie légitime que l'approche soit désagrégée, que les caractéristiques des personnes soient un élément à part entière de l'interrogation
• 2. En revanche, le fait que le résultat recherché soit une structure de flux pendant une période donnée légitime qu'on n'approche pas les logiques individuelles sur une période de temps long. La journée est une "tranche de vie" suffisante pour les besoins de prévision des flux, alors même qu'elle est de moins en moins suffisante pour la compréhension des pratiques personnelles.
• 3. Enfin, le modèle ne présente pas de boucle de rétroaction, de retour de l'offre (qu'on se propose de dimensionner) sur la demande. C'est une faiblesse qu'avait entrevue Voorhes lui-même, faiblesse que Zahavi contribuera à éclairer. A ce stade introductif, on retiendra simplement que la stabilité des budgets-temps de transport observée par Zahavi et transformée par lui en loi universelle invite à considérer qu'il y a bien rétroaction de l'offre sur la demande et que tout se passe comme si les progrès de vitesse offerts par le développement des systèmes de transport étaient surtout transformés par la société et les individus en gains d'accessibilité, en territoires de vie plus étendus.

Source : http://urbanisme.univ-paris12.fr/adminsite/objetspartages/liste_fichiergw.jsp?OBJET=DOCUMENT&CODE=1136568824056&LANGUE=0

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-Wachter S., 2003. ***La forme et le flux – Figures Urbaines et Architecturales de la Mobilité,*** Note du CPVS, n°18, 68 pages.

Réussir à articuler les politiques urbaines et celles des transports est devenu depuis au moins une dizaine d'années un “leitmotiv” récurrent des responsables de l'aménagement.C'est une préoccupation que l'on retrouve ainsi aussi bien dans la loi SRU en France, que dans la majorité des pays européens (politiques “ABC” aux Pays-Bas, “PP6 13” en Angleterre, “Ville des courtes distances” en Allemagne…)1 – ou dans un nombre impressionnant de programmes de recherche communautaires (“Transland”, “Transplan”, “Cost

332", …). Beaucoup de collectivités locales s'en sont en effet donné l'objectif, même si dans les pratiques quotidiennes, les logiques de "séparation" et de cloisonnement restent encore extrêmement fortes2. Impliqué à la fois dans le champ de la ville et dans celui des transports, le Centre de Prospective et de Veille Scientifique s'est lui aussi efforcé, depuis plusieurs années, de contribuer à cette articulation. En témoignent le colloque organisé en 1998 à Nantes sur "les vitesses de la ville"3, la place donnée à la dimension urbaine dans les scénarios, récemment publiés, sur la "mobilité locale"4 – ou, symétriquement, l'attention très forte portée aux transports dans les travaux, un peu plus anciens, de prospective urbaine – Colloque de La Rochelle "Villes du XXIème siècle"5 ou Séminaire sur la "diversité citadine" et les grandes mégapoles du Sud. La présente note de Serge Wachter intitulée La Forme et le flux fait plus que s'inscrire dans cette perspective d'articulation. D'une certaine manière, elle la radicalise en montrant qu'il n'y a pas de conception de la ville qui puisse s'abstraire d'une conception de la mobilité – et inversement. Mais surtout, elle révèle à quel point cette articulation a été depuis longtemps au coeur de la pensée architecturale – ce qui suggère sans doute implicitement que c'est peut-être aujourd'hui encore vers les architectes qu'il faut se tourner pour penser simultanément ce qui pourrait être la ville et la mobilité de demain.

Source : http://www.recherche-innovation.equipement.gouv.fr/IMG/pdf/Note_CPVS_n_18_sansImage_cle5163e7.pdf

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ARTICLES

-Bouf B., Péguy P-Y, Souche S., Routhier J-L., Ovtracht N., Le Kama A. A., 2008. ***Quelle mobilité en Chine en 2050 ?,*** Notes de synthèse du SESP, N°spécial (2008) pp. 25 -34, 25 pages.

En 2050, la Chine sera un pays développé, le PIB par habitant se situera entre celui du Japon et celui de la France de 2000. Quelle sera alors la mobilité des personnes et des marchandises ?
D'après les simulations et des projections réalisées par le LET, et sous réserve des limites méthodologiques et de disponibilité des données statistiques, les quatre principales tendances sont les suivantes :
•en interurbain, malgré de lourds investissements en infrastructures routières et une forte motorisation, les limites de capacité contraindront la mobilité des personnes ;
•en urbain, même dans les scénarios les plus élevés, la mobilité d'une ville chinoise théorique se situerait en dessous des trois déplacements par jour et per capita. La part modale des transports collectifs atteindrait entre 25 % et 30 % ;
•dans le domaine du transport aérien, il existera vraisemblablement un grand nombre de très grands aéroports, desservis par un chemin de fer suburbain et des trains rapides interurbains ;
•pour poursuivre le développement de l'activité portuaire, la qualité de service ainsi que les infrastructures de transport pour les relations avec les zones d'approvisionnement et de desserte seront déterminantes.

Source : http://halshs.archives-ouvertes.fr/docs/00/32/27/92/PDF/article_Notes_synthese_SESP_NS_2008.pdf

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-Crozet Y., 2008. ***Transports, mobilité et climat : l'impératif du "Facteur 4" ! Vers une "tyranie climatique",*** Pouvoirs locaux II, 77, pp. 21-29, 8 pages.

« La mobilité des personnes et des marchandises va-t-elle se trouver contrainte par une « tyrannie des grandes décisions », une « tyrannie climatique » remettant en cause nos modes de vie ? ». La réponse va sans dire eu égard à l'objectif fixé à l'horizon 2050 de diviser par quatre les émissions de gaz à effet de serre par rapport au niveau de 1990. De telles ambitions semblent a priori démesurées compte tenu de la progression prévisible de la mobilité des biens et des personnes à l'horizon 2050. Est-il réaliste de se donner de telles contraintes ? Le prix à payer sous forme de remise en cause des comportements de mobilité ne sera-t-il pas trop élevé ? Sans prétendre à clore le débat, les lignes qui suivent cherchent à donner, dans le secteur des transports, un contenu concret à l'objectif général de division par quatre des émissions de CO2. Cette contrainte globale peut-elle être satisfaite par les seuls progrès techniques que nous annoncent les ingénieurs? Ou serons-nous obligés de modifier nos comportements de mobilité ? Et si oui, dans quelle proportion ?

Source :
http://halshs.archives-ouvertes.fr/docs/00/30/25/52/PDF/Pouvoirs_Locaux_Yves_Crozet.pdf

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-Lopez-Ruiz H. G., 2008. ***Facteur 4 et mobilité des personnes et des marchandises,*** Laboratoire

d'économie des transports (LET), CNRS : UMR5593 – Université Lumière - Lyon II – Ecole Nationale des Travaux Publics de l'Etat, 18 pages.

Afin de limiter les impacts du changement climatique sur la planète, les experts du GIEC préconisent une division par deux des émissions mondiales de gaz à effet de serre à l'horizon 2050. Cet objectif impose une division par quatre (i.e. facteur 4) des émissions de gaz à effet de serre des pays industrialisés comme la France. Le secteur des transports peut-il se plier à cette exigence ?
A l'aide du modèle TILT (Transport Issues in the Long Term), centré sur les relations macroéconomiques entre croissance économique, technologies, mobilité et émissions de C02, ce papier recherche les conditions à réunir pour que soit atteint, en France, le « facteur 4 ». Si les progrès techniques annoncés par les ingénieurs sont au rendez-vous, nous pouvons atteindre un facteur 2. L'autre moitié du chemin doit donc être réalisée par une modification des comportements des individus et des entreprises. Trois familles de scénarios sont proposées pour en illustrer le contenu de ces évolutions qui, pour certaines, constituent de véritables bouleversements.

Source : http://halshs.archives-ouvertes.fr/docs/00/27/78/06/PDF/scenarios2050_LET-ENERDATA_HGLR.pdf

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-Massot M-H, Orfeuil J-P, 2003. ***La Mobilité individuelle dans 20 ans,*** Centre de recherche ETEIL, Séminaire au Sénat, 9 pages.

L'exercice auquel nous nous livrons dans les quelques lignes qui suivent se veut humble : quelques lignes ou minutes pour esquisser ce que sera ou **ce que pourrait être la mobilité des urbains dans 20 ans**, définie ici par leurs pratiques de déplacements dans le cadre de leurs activités les plus habituelles et récurrentes, **impose d'aller à l'essentiel** : on le sait la mobilité individuelle ne se résume pas à une seule impulsion individuelle à se déplacer, elle est aussi une production sociale. Pratiques de mobilité individuelle et formes de développement spatial des villes sont indiscutablement liées ; elles sont aussi co-produites par des contextes économiques, organisationnels et culturels, par des contraintes et des formes de régulation propres à chaque société, formes de régulation qui renvoient à l'exercice du droit à la liberté et notamment celle de circuler dont il ne faut pas nier ni la force ni la valeur dans certains pays dont le nôtre.

Source : http://urbanisme.univ-paris12.fr/adminsite/objetspartages/liste_fichiergw.jsp?OBJET=DOCUMENT&CODE=1136568785298&LANGUE=0

-Orfeuil J.-P., 2005. ***Déplacements, Energie consommée et Formes urbaines,*** Université Paris XII, Centre de recherche ETEIL, 11 pages.

Source : http://urbanisme.univ-paris12.fr/adminsite/objetspartages/liste_fichiergw.jsp?OBJET=DOCUMENT&CODE=1136545502123&LANGUE=0

-Orfeuil J-P, 2007. ***Déplacements, contrainte énergétique et effet de serre : quelques repères pour un débat****,* C.R.E.T.E.I.L., Université Paris XII, 9 pages.

Les individus aspirent aujourd'hui à plus d'autonomie, le champ de leurs interactions s'étend du village au monde, les sociétés exigent de leurs membres plus de réactivité, ce qui a des conséquences dans des domaines multiples, et, pour ce qui concerne les transports, par une mobilité croissante et un recours accru à l'automobile. Dans le même temps, la dépendance des transports à un pétrole qui ne sera pas inépuisable, la contribution du secteur à des émissions de gaz à effet de serre qu'il serait souhaitable de diviser par quatre rendent moins que probable la poursuite de la croissance des consommations de carburant pour les transports. Comment concilier cette double exigence ? Cette question est le plus souvent abordée en entrant par les transports et les différences qui résulteraient d'usages différents, d'inflexions de parts modales par exemple. Nous faisons le choix d'une entrée directe par les questions énergétiques. Les éléments qui suivent n'ont d'autres prétentions que de proposer des repères, de dimensionner des ordres de grandeur, pour des débats qui resteront controversés. Nous n'avons qu'une certitude : la réflexion doit articuler des perspectives mondiales et des perspectives plus locales, des perspectives technologiques, des analyses des potentiels de substitution entre moyens de transport et des considérations sur l'évolution des modes de vie et la mobilité, donc faire appel à des cultures professionnelles diverses. Parce que la France ne représente que 1 % de la population mondiale et de l'ordre de 2 % des consommations pétrolières et des

émissions de gaz à effet de serre (Ges dans la suite), il faut d'abord qualifier le contexte international. Il nous faut ensuite mesurer les capacités de réponse déployées dans le passé et examiner nos capacités d'adaptation futures, dans un contexte international qui sera plus contraignant.

Source : http://urbanisme.univ-paris12.fr/servlet/com.univ.collaboratif.utils.LectureFichiergw?CODE_FICHIER=1187960341137&ID_FICHE=139964

-Orfeuil J-P, 2004. ***A quoi ressemblera la mobilité quotidienne en 2030 en France ?,*** Revue Urbanisme n°334, 7 pages.

En guise de conclusion : Les prospectives de la mobilité ont souvent été fondées sur l'anticipation de catastrophes à déjouer dans une perspective mobilisatrice : se doter de marges de manoeuvre, de nouveaux outils de pilotage et de gestion de la demande. Notre vision des choses est assez différente. La palette des outils d'orientation est vaste et diversifiée, et les capacités d'adaptations des individus sont elles-mêmes très vastes. Les images qu'on peut former de la mobilité dans trente ans dépendent moins de logiques d'évitement de crise que de logiques de révélation des désirs, de tricotage collectif, et à une échelle convenable, des capacités et des volontés d'arbitrages de chacun, ce qui suppose une plus grande transparence dans les moyens affectés et les enjeux des politiques. L'heure est peut-être moins aux grands élans mobilisateurs nationaux qu' à la mise à plat des données de base préalable à la recherche, dans chaque agglomération, de la participation de tous à la construction d'un projet partagé.

Source : http://urbanisme.univ-paris12.fr/adminsite/objetspartages/liste_fichiergw.jsp?OBJET=DOCUMENT&CODE=1136568744778&LANGUE=0

-Orfeuil J.-P., Massot M.-H., 2005. ***Penser les mobilités de demain, Essai de clairvoyance prospective,*** Centre de Recherche ETEIL, 16 pages.

C'est sur une logique d'allers et retours entre les exigences de l'hypermodernité, l'identification des rationalités comportementales et l'observation des stratégies mises en oeuvre par les acteurs que nous construirons notre propos sur l'avenir de la mobilité et des modes de vie. Nous l'introduirons par un retour sur la deuxième moitié du vingtième siècle, qui nous permettra de prendre la mesure des transformations et d'en comprendre les rationalités sous-jacentes. Nous caractériserons ensuite les tensions principales qui se manifestent aujourd'hui. Nous déboucherons enfin sur les thèmes qui nous paraissent incontournables pour une prospective des modes de vie.

Source : http://urbanisme.univ-paris12.fr/adminsite/objetspartages/liste_fichiergw.jsp?OBJET=DOCUMENT&CODE=1136545746330&LANGUE=0

-Vanco F., 2008. ***Formes urbaines et coûts de la mobilité urbaine des ménages,*** ASRDLF, CRDT. Territoires et action publique territoriale : nouvelles ressources pour le développement régional - 45e colloque de l'ASRDLF, 25, 26 et 27 août 2008, Rimouski (UQAR), Canada, 15 pages.

Le débat sur la ville durable a jusqu'à aujourd'hui essentiellement porté sur le lien entre la densité et la mobilité des personnes, notamment les distances parcourues, la consommation d'énergie dans les transports et les émissions de gaz à effet de serre. Il a également porté sur les relations que peut entretenir une forme urbaine avec la mobilité des personnes, notamment les distances domiciles travail. L'ensemble de ces réflexions mérite d'être prolongé sur la dimension sociale du développement durable en s'interrogeant sur le poids que la mobilité locale fait peser sur le revenu des ménages, notamment les plus modestes. Il s'agit ainsi d'analyser quel type de ville favorise la mobilité la plus économe pour les ménages. C'est ce que nous proposons de faire en comparant deux aires urbaines à caractéristiques très différentes, Marseille et Lille. L'étude de l'agglomération lyonnaise complétera notre réflexion même si les données utilisées ne sont disponibles que sur un périmètre plus restreint. Cette étude portera donc sur la mobilité, mais également sur certains aspects de la dimension sociale (NICOLAS et alii, 2001) de la mobilité durable, c'est à dire le coût économique de la mobilité supportée par les ménages et la part qu'ils y consacrent dans leur budget. Nous dégagerons ainsi quelques facteurs relatifs à la forme urbaine la mieux susceptible de produire de la mobilité durable.

Source : http://halshs.archives-ouvertes.fr/docs/00/33/05/35/PDF/Vanco_ASRDLF_2008.pdf

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-Vilhelmson B., *Urbanisation et mobilité quotidienne. Changements à long terme des déplacements dans les zones urbanisées en Suède,* Department of Human and Economic Geography, Göteborg University, Cybergeo : Revue européenne de géographie, N°302, 17 février 2005, 14 pages

Cet article examine les changements à long terme des déplacements dans les zones urbanisées et les zones en partie urbanisées en Suède. Des données d'enquête sur les déplacements révèlent qu'il existe un rapport entre la taille/densité des zones habitées et la distance parcourue. Cette relation n'est pas linéaire. Dans les villes de taille moyenne, les habitants parcourent au quotidien la distance la plus courte. Cela contredit l'idée qu'une augmentation de la densité de population en ville – la stratégie des villes compactes – entraînerait une réduction du nombre de voyages. Depuis 1978, les habitants des villes de taille moyenne ont réduit l'usage de la voiture et augmenté l'usage du vélo. Ce résultat fait apparaître une potentialité de changement des comportements dans les structures spatiales existantes.

Source : http://www.cybergeo.eu/index3536.html

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-Vrain P., *Ville durable et transports : automobile, environnement et comportements individuels,* Innovations, 2003/2, n°18, p. 91-112.

Le monde est désormais entré dans l'ère de l'urbain. En 1950, la planète comptait 29% de citadins. Aujourd'hui, 47% des hommes sont concentrés dans les villes et les prévisions démographiques estiment qu'en 2035 cette proportion sera supérieure à 80% dans la plupart des pays, à l'exception de l'Afrique et de l'Asie (Domenach, Picouet, 2002).
Dans les pays du Sud, cette croissance urbaine s'opère dans des conditions sociales, sanitaires et écologiques de plus en plus perturbées, avec, notamment, la constitution de très grandes conurbations. De plus, dans ces pays, l'urbanisation relève moins du développement économique que de la pauvreté des campagnes et d'une émigration rurale impulsée par des crises agricoles récurrentes.
Parallèlement, le monde connaît une accélération des échanges commerciaux et une explosion de la mobilité. Il s'agit d'une révolution – François Perroux avait le premier souligné l'ampleur de la révolution urbaine en Occident – qui affecte désormais l'ensemble de la planète, mais qui se réfère au modèle occidental de mobilité fondé sur la priorité accordée aux transports routiers et à l'usage de l'automobile. Dans les pays du Sud, les investissements routiers mobilisent l'essentiel des ressources consacrées aux infrastructures de transport terrestre et contribuent à aggraver les atteintes à l'environnement générées par l'urbanisation galopante.
Quant aux pays occidentaux, les orientations suivies depuis les années cinquante en matière d'aménagement urbain soulèvent des problèmes sociaux et environnementaux dont la maîtrise apparaît de plus en plus difficile et complexe.
Source :
http://www.cairn.info/article.php?ID_REVUE=INNO&ID_NUMPUBLIE=INNO_018&ID_ARTICLE=INNO_018_0091

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-Wiel M., 1998, ***Comment gérer la transition urbaine***, ADEUPA, Recherche - Transports - Sécurité Volume 58, Pages 3-20.

Par analogie avec la transition démographique, la transition urbaine désigne la transformation de l'organisation urbaine, son changement d'état sous l'effet de la facilité accrue à se déplacer, conséquence de la diffusion de l'automobile et de l'équipement en infrastructures routières qui l'accompagne. Les règles de l'économie urbaine, auxquelles obeit le marché foncier, déterminent sur le long terme la recomposition des éléments constitutifs de la ville à une nouvelle échelle géographie, suivant un processus estimé de l'ordre du siècle. L'auteur s'attache à montrer le caractère structurel du processus quand les explications les plus répandues s'attachent à des interpr tations conjoncturelles. Ces dernières oblitèrent l'aptitude à oser une prospective à laquelle il se rísque et qui conclut à l'inaptitude des institutions locales en place, héritières d'un âge révolu de la mobilité, à jouer la fonction de régulation socio-politique permettant de canaliser les forces spontanées du marché. La maîtres des formes du développement urbaín concerne donc les responsables de la forme présente du système institutionnel et ne saurait être de ce fait une question purement locale.

Source : http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6VSP-462BND8-K&_user=10&_rdoc=1&_fmt=&_orig=search&_sort=d&view=c&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=4f965e05bdd189e9be075a2b6a640862

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TRANSPORT

-Crozet Y., Lopez-Ruiz H. G., Chateau B., Bagard V., 2008. ***Comment satisfaire les objectifs internationaux de la France en termes d'émissions de gaz à effet de serre et de pollution transfrontières ?*** Programme de recherche consacré à la construction de scénarios de mobilité durable. Rapport final, 237 pages.

Cette recherche vise à construire des scénarios sur les trafics et les émissions de C02 qui, à la fois, respectent l'objectif du facteur 4, et souscrivent à des conditions générales de soutenabilité sous l'angle économique, social et environnemental en précisant de quelle façon on obtient les différents résultats (contexte macroéconomique, organisation de la production et de la distribution, état des technologies, évolution des modes de vie, contenu des politiques publiques). Ces scénarios concernent les transports en France métropolitaine, mais en les inscrivant dans les flux internationaux de voyageurs et de marchandises.

Source : http://halshs.archives-ouvertes.fr/docs/00/29/37/25/PDF/Mobilite_durable_rapport_final_Avril_2008.pdf

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-Démarche Prospective Transport 2050 – Eléments de réflexion, Ministère des Transports, de l'Équipement, du Tourisme et de la Mer Conseil Général des Ponts et Chaussées, Mars 2006, 54 pages

La démarche prospective Transports 2050 a été initiée et conduite par le Conseil Général des Ponts et Chaussées en vue d'engager un débat sur le devenir à long terme du système des transports. Exclusivement centrée sur les flux de transport concernant le territoire français métropolitain, elle prend en compte des hypothèses mondiales et européennes (notamment dans les domaines de l'énergie, du développement technologique, de la démographie et de la croissance économique) dans la mesure où ces variables ont des impacts directs sur ces flux de transport.
Elle ne s'est pas fixé au départ des objectifs ou des contraintes politiques, tels que la limitation des gaz à effet de serre ou les budgets publics affectés aux transports, et est volontairement restée ouverte dans son approche.
À partir de la construction de plusieurs scénarios marquant des inflexions plus ou moins fortes en matière énergétique, démographique et économique, cette démarche évalue en ordre de grandeur l'évolution à l'horizon 2050 des différents flux de transport concernant le territoire national.
Limitée aux transports et à leurs déterminants, elle apporte des premiers éléments de problématique et de débat sur les enjeux et priorités des politiques de transport à long terme :
• les tendances d'évolution des différents flux de transport ;
• les potentialités de développement des modes complémentaires à la route ;
• les besoins d'infrastructures, au-delà de la réalisation des projets du CIADT de décembre 2003 ;
• et les perspectives de réduction significative des émissions de CO2 (moyennant des régulations économiques appropriées et le développement de technologies "accessibles" – telles que le véhicule hybride rechargeable et le carburant issu de la biomasse) dans une perspective de développement durable.

Source : http://www-rocq.inria.Porspectivefr/imara/rapport/CGPC_2050_mars%202006.pdf

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-Direction Générale des Transports et de l'Energie, 2006. ***European energy and transport – Trends to 2030,*** Bruxelles, Commission européenne, 148 pages.

Ce rapport est à la fois un outil de suivi et un bilan des politiques européennes dans les domaines de l'énergie et du transport. Il met en avant les difficultés actuelles et à venir de l'Union européenne à respecter ses différents engagements, notamment ceux concernant les énergies renouvelables et le Protocole de Kyoto. Le rapport s'appuie sur des données principalement publiées à fin 2004 mais les conclusions sont là :
- L'objectif de 12 % d'énergie renouvelable dans la consommation finale européenne ne serait pas atteint. Les projections actuelles estiment ce chiffre à 8% d'ici 2010 ;
- L'objectif de 5,75 % de biocarburants dans la consommation totale de carburant ne devrait finalement être que de 4 % ;

- L'objectif d'une réduction de 20 % de la consommation énergétique d'ici 2020 aboutirait finalement à une situation inverse avec une augmentation de la consommation énergétique de 15 % par rapport à 2000. Point positif, cette augmentation profiterait aux énergies renouvelables et au gaz naturel ;
- Les émissions de CO2 ne seraient pas stabilisées ni réduites d'ici 2010. Le rapport indique une progression, de 3 % en 2010 et de 5 % en 2030 par rapport à 1990 pour l'UE25 (les chiffres sont de + 7% en 2010 et +8% en 2030 pour l'UE15).
Il reste ainsi à l'Europe un long chemin à parcourir pour atteindre ses objectifs et inciter chacun des Etats Membres à respecter ses engagements avant de redoubler d'efforts. Du fait de l'utilisation de données désormais un peu anciennes, les conclusions du rapport peuvent être relativisées. Les bons résultats des énergies renouvelables en Europe, pour certaines au-delà des objectifs, la volonté de la Commission européenne d'exercer un pouvoir plus important en matière de contrôle des plans nationaux d'affectation des quotas d'émission et les projets actuellement à l'étude laissent prévoir que la tendance pourrait encore s'inverser.

Source : http://ec.europa.eu/dgs/energy_transport/figures/trends_2030/index_en.htm

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-PREDIT, 2008. **Signal-Prix et Arbitrages de court, moyen et long termes**, Agence de l'Environnement et de la Maîtrise de l'Energie – Département Transports et Mobilité –MEEDDAT – Direction de la recherche et de l'animation scientifique et technique, Beauvais Consultants, Université F. Rabelais E.T.I.c.S., Socio-économie des transports et de l'environnement, 137 pages.

L'objectif est de mettre au point des outils utiles pour la mise en oeuvre d'une politique durable de transport et dans ce cadre, d'examiner quelle peut être la réaction des acteurs économiques, et notamment les ménages, à un signal-prix. Les travaux antérieurs mettaient plus l'accent sur l'adaptation ou l'absence d'adaptation des ménages à court terme suite à une hausse du prix du carburant que sur les arbitrages qu'ils feraient à plus long terme.

Le principal résultat attendu de cette recherche concerne la fiscalité des carburants et plus précisément la fixation du prix à la pompe, tant au niveau du prix à fixer qu'en ce qui concerne le rythme plus ou moins rapide à adopter pour appliquer cette hausse dont on attend une réduction de la consommation de carburant et donc des émissions de gaz carbonique. Des indications seront aussi données sur les possibilités plus ou moins grandes d'adaptation des ménages et sur leur le lien qu'ils font ou ne font pas entre le signal-prix et les décisions de moyen et de long terme.

Source : http://www.predit.prd.fr/predit3/synthesePublication.fo?inCde=34841

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-PREDIT, 2006. Thème 5 : *Évaluation des politiques publiques territoriales au regard des changements climatiques* (émissions de CO2 du secteur transport), Groupe opérationnel n°7 « Impacts énergétiques et environnementaux des transports » PREDIT, RAC, ADEME, 95 pages.

Les transports sont en grande partie responsables des émissions françaises de Gaz à Effet de Serre (GES) d'origine humaine (26,5 % pour l'année 2004). Pour rompre avec cette tendance, des leviers d'action aux niveaux européen et national ont été mis en place : livre blanc sur la politique européenne des transports, programme Marco Polo, directives européennes, Loi sur l'air, Plans climat, etc. Ces politiques européennes et nationales ainsi que leur mise en oeuvre s'avèrent pour le moment inefficaces aussi bien en terme de réduction de la demande de transports motorisés que de report modal : transfert de la voiture vers les transports en commun et les modes de déplacement doux (marche, vélo, etc.) pour les personnes, et de la route vers le rail et les voies d'eau pour les marchandises.
Dans un contexte de lois de décentralisation et du fait de l'impact de leurs décisions sur l'évolution des émissions de GES (notamment dans les transports), les collectivités françaises ont été amenées à se mobiliser. Mais, l'analyse des CPER et des PDU montre que la dimension « effet de serre » est très peu présente dans les documents de contractualisation ou de planification. De plus, la multiplication d'interlocuteurs (directions de la voirie, commission environnement, agence locale de l'énergie, espaces info énergie, etc.) et de plans à l'échelle locale (SCOT, PLU, PDU, PLH, etc.) tend à poser des problèmes de cohérence et de nombreux soucis organisationnels.
Les solutions pour réduire les émissions de GES sont multiples et impliquent des changements à toutes les échelles d'action et à tous les niveaux de décision. Il va de soi qu'une politique nationale volontariste pour un rééquilibrage modal doit s'instaurer. Quant aux prochains CPER, ils devront significativement prendre en compte l'effet de serre, tout comme d'ailleurs les outils de planification mis à disposition des collectivités (PDU, SCOT, PLU, etc.). Parmi les priorités, le développement du rail, des voies d'eau et du transport combiné s'impose. Les politiques urbaines doivent s'atteler à lutter contre l'étalement urbain, réduire la place

de la voiture en ville, limiter le stationnement, développer les zones 30, le vélo, etc. Il est bien évident que c'est à travers un projet de territoire initié par des décideurs motivés et la définition d'objectifs opérationnels combinant plusieurs mesures fortes (énergie, transports, habitat, urbanisme, etc.) que les politiques engagées porteront leurs fruits en terme de limitation des émissions de GES. Au final, pour les collectivités, il semble opportun de s'orienter vers des approches globales de type Agendas 21 locaux ou Plans climat territoriaux qui portent, par ailleurs, le souci d'impliquer les acteurs du territoire grâce notamment aux possibilités offertes aujourd'hui en terme de démocratie locale (conseils de quartiers, référendum décisionnel local, etc.).

Source : http://www.rac-f.org/DocuFixes/etudes/PREDIT/PREDIT_2006.pdf

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-Servant L., Meyere A., Carpentier S., Golberg J., 2006. ***Transports et Energie en Île-de-France*** - Rapport de synthèse - contribution du sous-groupe « Energie » du groupe "Mobilité et Transports", IAURIF-DREIF-STIF, IAURIF, 78 pages.

Si le phénomène du peak oil ne fait aucun doute, les opinions des spécialistes ne convergent pas pour en fournir une date approximative dont l'occurrence pourrait se situer entre 2015 et 2050. Le groupe de travail ne s'est pas senti en capacité de trancher cette question mais l'a intégrée dans ses réflexions pour s'interroger sur ses conséquences. A cet égard, on peut distinguer deux scénarios qui ont en commun de considérer que nous inaugurons une période de pénurie croissante due à l'épuisement de la ressource pétrolière et à l'augmentation de la demande mondiale. Le premier consiste à imaginer un coût de plus en plus élevé du baril de pétrole pouvant conduire, à un rythme plus ou moins rapide, à des valeurs de l'ordre de 300$ le baril forçant ainsi les individus et les agents économiques, qu'ils le veuillent ou non, à s'adapter par des comportements plus vertueux. Ce scénario, qui se traduit par une remise en cause radicale de nos modes de vie et du modèle économique dominant, fait implicitement l'hypothèse qu'il n'existe pas de réponse alternative à la contrainte pétrolière et conclut au caractère inéluctable d'adaptations dont il s'agit alors d'atténuer les conséquences en les anticipant.
Le deuxième scénario est à certains égards plus inquiétant car il ne débouche pas, bien au contraire, sur des comportements plus vertueux. Ce scénario part du même constat que le précédent mais imagine que, pour échapper à la dépendance à l'égard du pétrole et à la hausse prévisible de son prix, les agents économiques auront recours de façon accrue à des énergies de substitution dont le coût deviendra progressivement plus accessible. Dans ce scénario, et compte tenu de l'état des techniques, il est probable que, même si les prix élevés rendront compétitives les énergies non fossiles, on n'échappera pas à une utilisation massive d'énergies carbonées, qu'elles soient d'origine fossile comme le charbon ou non. Le bilan carbone pourrait alors être désastreux et les émissions de GES au niveau mondial s'amplifier en dépit des efforts de certains pays. Ces deux scénarios mettent en avant à juste titre l'influence du prix de l'énergie sur les comportements des consommateurs. Cependant, si le signal-prix laisse aux agents économiques le libre choix en matière d'ajustement de leurs comportements, les effets qui en résultent peuvent ne pas être bénéfiques et c'est ce que le deuxième scénario met en évidence. Afin de les orienter dans le sens d'une réduction nécessaire des émissions de GES, la fiscalité peut jouer un rôle essentiel pour dissuader les agents économiques de recourir de manière excessive aux énergies carbonées. Une taxe carbone, dont le niveau reste à définir, peut être à cet égard un instrument particulièrement efficace.

Source : http://www.iaurif.org/fileadmin/Etudes/etude_55/dti_Rapport_de_synthse_GST_Energie_Final_18-10-2006_.doc_1401.pdf

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ARTICLES

-CLIP. ***Habitat et développement durable, Bilan rétrospectif et prospectif, Le véhicule électrique à l'horizon 2050, Introduction du véhicule électrique dans le parc français des véhicules particuliers à l'horizon 2050***, Les Cahiers du CLIP (Club d'Ingénierie Prospective Energie et Environnement) n°13, avril 2001, 73 pages.

Le présent numéro des cahiers du CLIP présente les synthèses de deux études prospectives, l'une dans le domaine de l'habitat, l'autre dans le domaine de l'automobile. La première d'entre elles "Habitat et développement durable : bilan rétrospectif et prospectif" s'est penchée sur le problème, majeur pour la consommation énergétique de la France et ses émissions de gaz à effet de serre, des consommations de chauffage du parc de logement. Ses résultats montrent à l'évidence que les priorités actuelles d'action de maîtrise de l'énergie et de contrôle des émissions de gaz à effet de serre, principalement axées par les pouvoirs publics sur l'habitat neuf devraient être profondément recentrées vers une action volontariste vis à vis de l'habitat existant où les potentiels d'économie d'énergie resteront pour encore longtemps bien

supérieurs à ceux de l'habitat à construire. Cette étude montre aussi l'influence des structures urbaines sur les dépenses d'énergie associées aux logements dont l'importance justifie d'accorder une forte priorité aux stratégies de réhabilitation des centres villes.
La seconde étude "Introduction du véhicule électrique dans le parc français des véhicules particuliers à l'horizon 2050" vient combler la lacune que nous avions constatée dans l'étude "Automobile et développement durable", objet des cahiers du CLIP n°9.

Elle se fonde sur la méthodologie développée dans l'étude précédente et analyse les conséquences de la pénétration de divers types de véhicules électriques dans le parc automobile français, d'ici 2050. Les scénarios de pénétration des véhicules électriques dans le parc français viennent compléter, sans les remettre en cause, les conclusions de l'étude précédente qui faisait apparaître l'intérêt particulier présenté par la solution véhicule hybride du point de vue des bilans énergétiques et environnement global à long terme. Par contre du point de vue de l'environnement urbain, la solution électrique présente des avantages indéniables à l'horizon 2050. Editorial de B.Dessus.

Source : http://hal.archives-ouvertes.fr/docs/00/09/81/95/PDF/traisnelhabitatbilan.pdf

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-Crozet Y., 2007. **Les péages urbains sont-ils efficaces pour réduire la pollution automobile ?,** Laboratoire d'économie des transports (LET), CNRS : UMR5593 – Université Lumière - Lyon II – Ecole Nationale des Travaux Publics de l'Etat, Liaison Énergie-Francophonie, 74 pp. 31-34.

Après avoir longtemps été proposé, sans succès, par les économistes comme un moyen de réduire la congestion routière, le péage urbain connaît un regain d'intérêt. Des villes comme Londres et Stockholm l'ont instauré, beaucoup d'autres s'interrogent. Ce que montrent ces expériences, c'est la grande diversité des objectifs que recèle l'idée de péage urbain. Dans cet ensemble, ce n'est pas forcément la dimension environnementale qui va l'emporter, mais plutôt une logique patrimoniale qui cherche à protéger la ville des effets pervers, non pas tant de la congestion que de la vitesse automobile.

Source : http://halshs.archives-ouvertes.fr/docs/00/19/22/05/PDF/article_LEF74.pdf

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-Crozet Y., Glachant M., 2007. ***Le péage urbain : peut-être, mais comment ?*,** Laboratoire d'économie des transports (LET), CNRS : UMR5593 – Université Lumière - Lyon II – Ecole Nationale des Travaux Publics de l'Etat, Centre d'économie industrielle (CERNA), Ecole Nationale Supérieure des Mines de Paris , Infrastructures & Mobilité, 64 pp. 8-10.

Le péage urbain est dans l'air. Après les précurseurs (Singapour, Oslo, Trondheim, etc.), son lancement dans l'hyper-centre de Londres en février 2003 a fait beaucoup de bruit et semble réussi. Stockholm s'est lancée à titre expérimental en août 2005, et ses habitants ont depuis plébiscité du péage par référendum. Tandis que Londres est sur le point d'en étendre la zone, Paris résiste, préférant d'autres méthodes pour lutter contre la congestion. Pourtant, le premier ministre l'a récemment encouragé. Le péage urbain est-il juste ou injuste, comment fait-il procéder, bref quel est son avenir, voici un débat sur le sujet entre entre Yves Crozet et Matthieu Glachant.

Source : http://halshs.archives-ouvertes.fr/docs/00/32/12/72/PDF/IM64_Crozet_Glachant.pdf

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-Raux C. 2008. ***Maîtriser les émissions de CO2 dans le transport : vers des marchés de droits à consommer du carburant.*** Infrastructures & Mobilité, 75 (2008) pp. 10-14, 6 pages.

Parmi les mesures identifiées si l'on veut atteindre des objectifs ambitieux de maîtrise de la croissance des émissions du transport, les taxes sur le carbone et les carburants ont le meilleur rapport coût-efficacité, constate Charles Raux. Cependant, la « révolte fiscale » de septembre 2000 dans plusieurs pays européens montre que l'opinion est très réticente à l'augmentation de la fiscalité sur les carburants. C'est pourquoi l'auteur propose un autre instrument de régulation environnementale, les marchés de permis.

Source : http://halshs.archives-ouvertes.fr/docs/00/32/30/92/PDF/IM75_Dossier_Raux.pdf

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-Raux C., 2007. ***Des changements concevables pour le secteur des transports dans l'objectif "Facteur 4",*** Laboratoire d'économie des transports (LET), CNRS : UMR5593 – Université Lumière - Lyon II

– Ecole Nationale des Travaux Publics de l'Etat**,** *Lettre Techniques de l'Ingénieur - Energies*, 5, pp. 4-5**.**

Au niveau mondial, les transports consomment 20% de l'énergie, dont 80% dans les transports routiers et 10% dans les transports aériens, et 95% de cette énergie est à base de pétrole. Le secteur des transports est l'un des principaux émetteurs de gaz à effet de serre dans la plupart des pays, et notamment du CO2 issu de la combustion des carburants fossiles. Pour que les transports contribuent significativement à l'objectif du « Facteur 4 » en 2050, trois pistes différentes mais complémentaires peuvent être considérées : l'amélioration des technologies existantes, de nouveaux arrangements dans les services de transport, et enfin, les actions sur les comportements des usagers.

Source : http://halshs.archives-ouvertes.fr/docs/00/13/66/46/PDF/LettreTI-1-2007.pdf

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-Raux C., 2007. ***Réduire les émissions de CO2 dans le transport : un marché de permis pour les automobilistes et le frêt,*** Laboratoire d'économie des transports, CNRS : UMR5593 – Université Lumière - Lyon II – Ecole Nationale des Travaux Publics de l'Etat, Transports, 445, pp. 285-293.

Le Grenelle de l'environnement a eu le mérite d'établir un quasi consensus chez ses participants, à savoir la nécessité d'agir sur les comportements des consommateurs de transport, à travers une « taxe carbone » ou « contribution climat » qui s'appliquerait au carburant automobile. Mais les inquiétudes quant aux conséquences sociales et économiques d'un tel projet sont vives. Cet article propose un dispositif alternatif fondé sur les marchés de droits à consommer du carburant, qui s'appliquerait aux automobilistes et au transport de marchandises. Ce type d'instrument peut rendre le contingentement global du carburant acceptable aux ménages et aux entreprises, tout en leur créant de fortes incitations à réduire les consommations.

Source : http://halshs.archives-ouvertes.fr/docs/00/20/40/23/PDF/Raux_article_Transports.pdf

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Modes de vie à basse intensité énergétique

-Baedeker C, Liedtke Christa, Welfens J., 2006. ***Analysis of Existing Concepts for Measuring Sustainable Consumption in Germany and Main Features of a Development Concept,*** 12 pages.

Integrating ecological, economic and social aspects and a global implementation of international programmes for sustainable production and consumption patterns is vital for the implementation of the Johannesburg framework. The resulting proposal is a solution for assessing complex developments in the social-policy environment (Baedeker et al., 2005).

Source : http://www.wupperinst.org/uploads/tx_wibeitrag/SCORE_existing_concepts.pdf

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-Centre for Sustainable Energy, 2006. ***A rough guide to individual carbon trading***, Department for Environment, Food and Rural Affairs (DEFRA), 41 pages.

An introductory guide to the ideas and issues involved in the concept of individual carbon trading. This report provides some initial analysis of the ideas and issues involved in the concept of individual carbon trading. It assesses the range of questions that arise when such a concept emerges from academic debate and 'think tanking', to be considered seriously as a potential practical policy option. It considers what needs to be thought about, found out, modelled or tested to establish whether this concept has practical merit in the real world. The report explains how it compares with, and relates to, other tools of public policy and private persuasion designed to achieve the same objectives. The research was conducted in order to provide some initial analysis of the ideas and issues involved in the concept of individual carbon trading. Individual carbon trading is based on the idea that by giving everyone a limited allowance to cause carbon dioxide emissions, total emissions from the population can be limited. Those who need or want to emit more than their allowance have to buy allowances from those who can emit less than their allowance. The primary purpose of the study was to assess the range of questions which arise when such a concept emerges from the rarefied atmosphere of academic debate and 'think-tanking' to be considered seriously as a potentially practical policy option. The research examines a variety of schemes proposed for individual carbon trading and reviews a number of other fields of research which may be relevant for understanding the implications of introducing and operating an individual carbon trading system. The report finds that a range of questions needs to be answered to enable a reasonable assessment of individual carbon trading as a future policy tool and maps the necessary steps out over a five year period.

Source : http://www.eukn.org/binaries/greatbritain/bulk/research/2007/5/rough-guide-to-carbon-trading.pdf

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-Charter M., Tukker A. (ed.), 2006. ***Sustainable Consumption and Production : Opportunities and Challenges,*** Proceedings, Launch Conference of the Sustainable Consumption Research Exchange (SCORE), 23-25 November, Wuppertal, 210 pages.

Source : http://www.score-network.org/files/1223_SCORE-Launch-Conf_Proceedings-Refereed-Papers-II_Post-Conf.pdf

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-Darnton A., 2004. ***The Impact of Sustainable Development on Public Behaviour,*** Report 1 of Desk Research commissioned by COI on behalf of DEFRA, Andrew Darnton Research and Analysis, 23 pages.

This report represents the first set of the findings from the desk research study. As well as being shaped by the scoping objectives defined above, it was informed by the question: 'what role should SD play in a communications campaign for public behaviour change?'. Accordingly, the report presents evidence on levels of public awareness and understanding of the concept of SD before moving on to consider the factors which impact on public behaviours for sustainability, including communications campaigns. This report focuses on evidence in the sources which is relevant to the concept of SD as a whole, and its impact on behaviour change; the rich evidence in the sources relating to specific public behaviours within the SD agenda is discussed in Report 2.

The selected sources which provide the evidence cited in this report are presented in Report 3, which comprises summaries of the relevant content in all 81 sources selected for inclusion in the reporting phase of this study, along with notes on the background to, and methodologies employed by, each source.
It should be noted that the methodology employed for datagathering means that this report is not based on a definitive selection of the existing evidence on SD (so diverse is the field, and so numerous are the sources, that no study of this kind could confidently claim to be definitive). However, the methodology employed does mean that the sources included here represent those considered most relevant to the area of enquiry, by those bestplaced in the field of SD to identify them. A full list of the organisations involved in the datagathering, and of the sources identified, is given as an Appendix to Report 3.

Source : http://www.compassnetwork.org/images/upload/desk-research1.pdf

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-Darnton A., 2004. ***Driving Public Behaviours for Sustainable Lifestyles,*** Report 2 of Desk Research commissioned by COI on behalf of DEFRA, Andrew Darnton Research and Analysis, 55 pages.

This report represents the second set of the findings from the desk research study. Where the first report asked what impact communications on the concept of SD would have on public behaviour, this second report approaches that question from the other end. Thus this report asks 'what behaviours could the public undertake which would deliver the objectives of Sustainable Development?'.
In attempting to answer this question, this report builds on an understanding of the concept of SD developed in the first report, and interprets that concept into a set of everyday behaviours which the public could adopt to achieve positive impacts in terms of sustainability. This is presented as 'an exploratory framework for a sustainable lifestyle', on page 10 below.
The first report also established that many barriers apply to public behaviours in the area of sustainability, of which those barriers addressed by communications campaigns are not the most significant. In the light of that finding, this report goes on to identify some of the other barriers and drivers applying to particular public behaviours for sustainability, based on the evidence presented in the sources included in this desk research study.
The selected sources which provide the evidence cited in this report are presented in Report 3, which comprises summaries of the relevant content in all 81 sources selected for inclusion in the reporting phase of this study, along with notes on the background to, and methodologies employed by, each source. It should be noted that the methodology employed for datagathering means that this report is not based on a definitive selection of the existing evidence on SD (so diverse is the field, and so numerous are the sources, that no study of this kind could confidently claim to be definitive). However, the methodology employed does mean that the sources included represent those considered most relevant to the area of enquiry, by those best-placed in the field of SD to identify them. A full list of the individuals and organisations involved in the datagathering is given as an Appendix to Report 3.

Source : http://www.compassnetwork.org/images/upload/desk-research2.pdf

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-EEA, 2005. ***Household Consumption and the Environment,*** Copenhague, Report n°11, 72 pages.

A renewed policy focus on sustainable consumption and production (SCP) can be observed, both at the global level and in Europe. With an aim to provide input for European policy-making, this report analyses the environmental effects of household consumption in Europe. We have identified four consumption categories that form a major part of our total consumption expenditure and for which the environmental effects are either large or increasing rapidly. These are consumption of food and drink; housing; personal travel and mobility; and tourism. The negative environmental effects of our consumption do not only occur in Europe, but also in other regions of the world, mainly as a result of resource extraction, production, processing and transportation of the goods we consume in Europe, and as a result of our personal travel and tourist activities.Attaining more sustainable consumption and production patterns is a common challenge that involves all actors, including public authorities at all levels, business and consumers.

Source : http://www.eea.europa.eu/publications/eea_report_2005_11

-EEA, 2009 (sous presse). ***Ensuring Quality of Life in Europe's Cities and Towns. Tackling the Environmental Challenges driven by European and Global Change,*** Copenhague.

-Etzioni A., 2006. ***Voluntary Simplicity : Characterization, Select Psychological Implications and Societal Consequences***, Journal of Economic Psychology, No. 19, (1998), pp. 619-643, 18 pages.

Source : http://dspace.wrlc.org/bitstream/1961/446/1/A262.pdf

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-Geerken T., Tukker A., Vezzoli C., Ceschin F., 2008. ***Sustainable Consumption and Production : Framework for Action,*** Proceedings, Second Conference of the Sustainable Consumption Research Exchange (SCORE), 10-11 March, Halle des Tanneurs, Brussels, 20 pages.

Source : http://www.icspac.net/documents/Actionplan22_PDF.pdf

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-Heinberg R., Bomford M., 2009. ***The Food and Farming Transition: Toward a Post-Carbon Food System****,* Post Carbon Institute, 41 pages.

Source : http://postcarbon.org/files/PCI-food-and-farming-transition.pdf

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Heiskanen E., Rask M., Mourik R., Bauknecht D., Brohmann B., Vadovics E. ***Basic approaches to studying energy-related behavioural change,*** Reprint: Chapter 3 of Deliverable 3 Conceptual approach of the project: background paper of the EC FP7 project CHANGING BEHAVIOUR, 20 pages.

Source : http://blogs.helsinki.fi/energiakurssi/files/2009/02/heiskanen-ym-review-chapter.pdf

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-Hertwich E., Briceno T., Hofstetter P., Inaba A. (ed)., 2005. Proceedings. ***Sustainable Consumption: the Contribution of Research,*** Workshop, 10-12 February, Gabel Hus, Oslo, 339 pages.

The implementation of sustainable consumption requires research to assess the environmental impacts of different lifestyles, to develop proposals for changes in consumption patterns, to deliver insights into the factors that shape consumption, to develop and evaluate scenarios, and to study and evaluate efforts of implementation. It requires research to deliver tools and information to policy makers, industry and the interested public. Such ambitious goals can only be achieved through an international, collaborative research effort. This seminar takes stock of the current research in order to develop a common research agenda and a proposal for a research infrastructure, consisting of common classifications, protocols, databases, and assessment methods. The first part of the workshop focuses on the assessment of household environmental impacts, the understanding of consumption patterns and consumer behaviour, examples of sustainable consumption, acceptability of policy measures, and scenario analysis.
The second part of the workshop discusses the development of a common, interdisciplinary research approach and a common research agenda. This effort may include the development of common data bases, data formats, models, protocols, indicators and assessment methods so that research becomes more cumulative and results can be more easily compared. It also requires that researchers from different disciplines develop a common platform, which includes a set of core research questions and common publication channels. This workshop is a first step towards developing the proposal for such a research infrastructure, as well as charting out a plan of action to put it in place.

Source : http://www.indecol.ntnu.no/indecolwebnew/publications/reports/rapport05/rapport1_05web.pdf

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-Hertwich E., 2006. ***Accounting for Sustainable Consumption: a Review of Studies of the Environmental Impacts of Household,*** *in* : Jackson T. (ed.), *op. cit.,* p 88-108.

Source : http://www3.interscience.wiley.com/journal/120090986/abstract

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-**Hertwich E., Ornetzeder M.,** 2005. ***The Environmental Benefit of Car-free-Housing : A Case in Vienna*****,** *in* : Hertwich E. et al. (ed), *op. cit.,* p 161-170.

Source : hertwich.doc

-Jackson T. (ed.), 2006. ***The Earthscan Reader in Sustainable Consumption***, Earthscan, London.

-Jackson T., Michaelis L., 2003. ***Policies for Sustainable Consumption,*** Report to the Sustainable Development Commission, Centre for Environmental Strategy, University of Surrey, Environmental Change Institute, Oxford University, 77 pages.

The purpose of this document aims to provide a guide to the complexity of the sustainable consumption debate, an overview of the extensive literatures on consumer behaviour and lifestyle change, and an analysis of the policy opportunities suggested by these literatures. The report offers several key avenues for sustainable consumption policy, emphasising the role for government in:
• aligning vision and rhetoric with policy and practice;
• shaping the cultural context of consumption;
• supporting non-governmental initiatives for change and innovation;
• establishing programmes, agencies and networks to nurture successful initiatives and encourage their replication; and
• establishing an on-going process of review and collaborative learning.

These suggestions depart from conventional policy prescription in two specific ways. In the first place, they emphasise the vital role that government has to play in shaping the institutional, social, cultural and ethical context within which individual consumer behaviour is negotiated. Secondly, they offer a model for government policy which goes beyond the rigidity of 'control' and 'persuasion' and is based instead on the idea of government and public as collaborators and learning partners in the process of change.

Source : http://www.sd-commission.org.uk/publications/downloads/030917%20Policies%20for%20sustainable%20consumption%20_SDC%20report_.pdf

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-Martens S., Spaargaren G., 2006. ***The Politics of Sustainable Consumption : The Case of the Netherlands***, *in :* Jackson T. (ed.), *op. cit.,* p 197-221.

The environmental pressure associated with contemporary modes of material provisioning in advanced countries suggests the need to foster more sustainable consumption. Despite growing interest in sustainability, the Netherlands currently has few effective and legitimate measures in place that focus on the role of citizen-consumers. Existing policy styles and instruments have not reduced significantly the environmental impacts of consumption. An explanation for this inadequacy resides in the technocratic origins of environmental policymaking and the pronounced tendency to rely on the presumed rationality of producers situated on the supply side of prodiction-consumption chains. A central issue, therefore, becomes the organization of an overt politics of sustainable consumption. We explore here possible alternatives to facilitate sustainable consumption on the Netherlands and review the policy initiatives that non-governmental organizations and the Ductch government gave to date undertaken. The analysis evaluates these efforts through a theoretical framework designed to chart the development of a democratic vision of sustainable consumption.

Source : http://ejournal.nbii.org/archives/vol1iss1/0410-009.martens.pdf

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-Moll H., Noorman K., Kok R., Engström R., Throne-Holst H., Clark C., 2006. ***Pursuing more Sustainable Consumption by Analysing Household Metabolism in European Countries and Cities***, Massachussets Institute of Technology and Yale University, Journal of Industrial Ecology, 17 pages.

Bringing about more sustainable consumption patterns is an important challenge for society and science. In this article the concept of household metabolism is applied to analyzing consumption patterns and to identifying possibilities for the development of sustainable household consumption patterns. Household metabolism is determined in terms of total energy requirements, including both direct and indirect energy requirements, using a hybrid method. This method enables us to evaluate various determinants of the environmental load of consumption consistently at several levels—the national level, the local level, and the household level.
The average annual energy requirement of households varies considerably between theNetherlands, the United Kingdom, Norway, and Sweden, as well as within these countries.
The average expenditure level per household explains a large part of the observed variations. Differences between these countries are also related to the efficiency of the production sectors and to the energy supply system. The consumption categories of food, transport, and recreation show the largest contributions to the environmental load. A comparison of consumer groups with different household characteristics shows remarkable differences in the division of spending over the consumption categories.

Thus, analyses of different types of households are important for providing a basis for options to induce decreases of the environmental load of household consumption. At the city level, options for change are provided by an analysis of the city infrastructure, which determines a large part of the direct energy use by households (for transport and heating). At the national level, energy efficiency in production and in electricity generation is an important trigger for decreasing household energy requirements.

Source : http://ivem.eldoc.ub.rug.nl/FILES/ivempubs/publart/2005/JIndustEcolMoll/2005JIndustEcolMoll.pdf

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-Owens S., Driffill L., 2006. ***How to change attitudes and behaviours in the context of energy,*** Cambridge University, Office of Science and Innovation, UK Government, 18 pages.

It is commonly assumed that attitudes and behaviours need to be modified in order to achieve energy efficiency and secure a sustainable energy supply for the future. This paper focuses particularly on public (as opposed to corporate) attitudes and behaviours, and examines present insights and future directions within social science in this extensive field of study.
Alongside instruments such as regulation and economic measures, government campaigns within the energy and environmental fields have sought to 'educate' the public, and have often been predicated on a rationalist 'information deficit model'. However, such a model has been criticised on both pragmatic and academic grounds. Insights from the social sciences in the areas of energy consumption and facility siting demonstrate that a thorough, interdisciplinary, understanding of attitudes and behaviours is necessary.
Research demonstrates the need to take account of the physical, social, cultural and institutional contexts that shape and constrain people's choices. There are also important insights into opposition to energy facilities, which has been inadequately characterised as NIMBYism. Much recent work points to the need for more deliberation and better (not just top-down) communication between decision makers, technical experts, other stakeholders and the public.
Predicting future developments in the social sciences is more challenging but it is expected that, as our understanding of attitudes and behaviours develops and more genuinely interdisciplinary work is pursued, attention may be focused on aspects of policy learning, a more critical examination of the 'deliberative turn', and the need for a systemic approach to complex socioeconomic systems. Furthermore, the consistency of government objectives across all policy spheres is likely to provide an important avenue for future research.

Source : http://www.foresight.gov.uk/Energy/How_to_change_attitudes_and_behaviours.pdf

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-**Sanches, S.** 2005. ***Sustainable consumption à la française? Conventional, innovative, and alternative approaches to sustainability and consumption in France.*** Sustainability: Science, Practice, & Policy 1(1):43-57.

Consumption has again become the object of critical political attention in France over the last few years. Despite obvious links with the global project to promote “sustainable consumption,” this renewal of interest has had little connection with Agenda 21. Among the factors responsible for this situation, the poor integration of environmental issues in French political culture seems to be of primary importance. While the country has made some recent progress, historical analyses highlight the fragmented style of environmental management in France. These circumstances, in turn, have contributed to the slow uptake of “sustainable development” and have been a major impediment in the implementation of successful eco-consumption policies. However, if the ultimate goal of “sustainable consumption” is to transcend contemporary ways of acquiring goods and to move toward a reassessment of the values underlying them, then several developments in France become directly relevant. Indeed, if the country does not qualify as a leader in conventional eco-consumption policies, it has begun to evince self-reflexivity regarding some basic consumption practices. This article considers three especially notable developments: (1) the implementation of innovative employment policies such as the 35 hour work week; (2) the revival of the country’s anti-consumerism movement; and (3) the adoption of confrontational positions on culture and agriculture during international trade negotiations. Taken in the round, these trends suggest the emergence of a nationwide exercise in “discriminating consumerism” and a move away from an unquestioned materialism.

Source : http://ejournal.nbii.org/archives/vol1iss1/0410-010.sanches.pdf

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-SDC, NCC, 2006. **I will if you will - Towards sustainable consumption,** Sustainable Consumption roundtable, Defra, DTI, 78 pages.

People, business and government – the three groups at the corners of our ‘triangle of change’ – will play a

key part in this. This report looks at each group in turn, and then at policies that can link them: while no one of the three can lead alone, a co-ordinated approach can create the opportunities and responsibilities to accelerate change. The right policy approach will focus on positive solutions that work with the grain of people's aspirations rather than against them. And it will put consumer lifestyles, and the everyday products and services that people use, centre stage.
The illustrations we offer to achieve this do not solve all the issues of a sustainable future. But, by opening people's minds to the impacts of their actions and demonstrating alternatives, they can also help build the space for more mandatory policies to tackle the most difficult issues.
In our deliberations, we focus primarily on the environmental dimensions of sustainability, while
testing the implications of our recommendations for social justice. In part this is in recognition of the complexity of the debate and our own limitations. But more fundamentally, it is because we
recognise that living within ecological limits is the nonnegotiable basis for our social and economic development. We view the challenge of sustainable consumption as a spectrum. At the near end of this spectrum are measures that require less in terms of intervention and active change.
In the centre of the spectrum are more deep-seated changes to habits and routines, like restoring a sense of seasonality to what we eat, turning off lights and opting to walk or cycle. At the far end of the spectrum are innovations and measures that allow people to change behaviour or aspirations in a
more fundamental way. The purpose of public policy on sustainable consumption should be to enable government, business, and all of us as individuals to move progressively along this spectrum, tackling the right issues at the right points.
On the right, we set out our headline findings and principal recommendations. This report details practical solutions. While its recommendations are aimed at the UK government, they have an eye to the implications for future wider development. Rather than a rigid set of rules, we have established a Sustainable Consumption Action Framework as a guide for government policy. We see that shortterm action can also contribute to longer-term solutions on more complex issues. In our concluding chapter we examine some of these deeper challenges that we face on the path to a more sustainable future.

Source : http://www.sd-commission.org.uk/publications/downloads/I_Will_If_You_Will.pdf

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-Southerton D., Chappells H., Van Vliet B. (ed.), 2004. ***Sustainable consumption: the Implications of Changing Infrastructures of Provision,*** Edward Elgar Pub., Cheltenham, UK, Northampton, MA.

Source :
http://books.google.fr/books?id=OF4fzkVN4H4C&dq=%22+Sustainable+consumption:+the+Implications+of+Changing+Infrastructures+of+Provision%22&printsec=frontcover&source=bn&hl=fr&ei=5TwISp_OKqW6jAfS0on5BA&sa=X&oi=book_result&ct=result&resnum=4

-Thompson S., Abdallah S., Marks N., Simms A., Johnson V., 2007. ***The European Happy Planet Index: An index of carbon efficiency and well-being in the EU***, nef, 47 pages.

In an age of climate change, when it is more important than ever that we use our resources efficiently, the European Happy planet Index reveals that Europe as a whole is less carbon efficient at delivering human well-being in terms of relatively happy, long lives to its citizens than it was over 40 years ago. On current performance, Europe is not remotely close to navigating an economic course set to reach its desired location on climate policy. It needs to achieve a carbon footprint small enough to help prevent the planet warming by more than 2 degrees above pre-industrial levels. This requires cuts in emissions by industrialised nations of between 70 and 80 per cent by 2050 compared to 1990 levels according to Sir Nicholas Stern, author of the UK Treasury's influential report on the economics of climate change. Worse still, Europe is heading in the wrong direction, its carbon footprint still growing, and its level of carbon efficiency in terms of fuelling happy, long lives - lower now than it was 40 years ago. To reverse this trend, we need to look to the example of those European countries that are already the most efficient - some of the most socially progressive and technologically advanced nations anywhere in the world. Countries like Iceland, the highest scoring nation on the European Happy Planet Index clearly show that happiness doesn't have to cost the earth. Iceland's combination of strong social policies and extensive use of renewable energy demonstrate that living within our environmental means doesn't mean sacrificing human well-being - in fact, it could even make us happier. Countries that have most closely followed the Anglo-Saxon, strongly market-led economic model show up as the least efficient on the Index.

Source : http://www.neweconomics.org/gen/z_sys_PublicationDetail.aspx?pid=244

-Vermeir I., Verbeke W., 2004. ***Sustainable Food Consumption : Exploring the Consumer Attitude – Behaviour Gap,*** Working Paper, Gent University, 28 pages.

Although public interest in sustainability increases and consumer attitudes are mainly positive, behavioural patterns are not univocally consistent with attitudes. The presumed gap between favourable attitude towards sustainable behaviour and behavioural intention to purchase sustainable food products is investigated in this study. The impact of involvement, perceived availability, certainty, perceived consumer effectiveness (PCE), values, and social norms on consumers' attitudes and intentions towards sustainable food products is analysed. The empirical research builds on a survey with a sample of 456 young consumers, using questionnaire and an experimental design with manipulation of key constructs through showing advertisements for sustainable dairy. Involvement with sustainability, certainty, and PCE have a significant positive impact on attitude towards buying sustainable dairy products, which in turn correlates strongly with intention to buy. Low perceived availability of sustainable products explains why intentions to buy remain low, although attitudes might be positive. On the reverse, experiencing social pressure from peers (social norm) explains intentions to buy, despite rather negative personal attitudes. This study shows that more sustainable and ethical food consumption can be stimulated through raising involvement, PCE, certainty, social norms and perceived availability.

Source : Sustainable food consumption: exploring the consumer attitude-behaviour gap

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-ADEME 2008. ***Environnement et modernité. Nouvelles attitudes, nouvelles régulations – quelques changements comportementaux détectés.*** Stratégie et Etudes, N. spécial., 42 pages.

Source : http://ademe.co-ment.net/text/8/

-Bonini et Clavairolle, 2005. ***Changer d'espace pour vivre mieux : ethnologie des « nouveaux » habitants des Cévennes,*** *in* : Fleuret S. (coord.). *Espaces, Bien-Être et Qualité de vie*, Presses de l'Université d'Angers.

Source : http://eso.cnrs.fr/spip.php?article257

-Conseil de l'Europe, 2009. ***Repenser l'acte de consommation pour le bien-être de tous - Réflexions sur la responsabilité individuelle des consommateurs.***

Source : http://book.coe.int/FR/ficheouvrage.php?PAGEID=36&lang=FR&produit_aliasid=2369

-Dobré M., Juan S.. 2009. ***Consommation, modes de vie et environnement,*** L'Harmattan (à paraître)

-Habitat et vie urbaine, 2006. ***Changements dans les modes de vie,*** Les actes du colloque 14 et 15 mars 2006, 258 pages.

Une des préoccupations à l'origine du programme de recherche Habitat et vie urbaine était bien de développer des modes de lecture renouvelés de l'habitat et de la ville, permettant d'analyser les incidences sur les modes d'habiter et le fonctionnement urbain d'une série de mutations socio-économiques :
• la transformation des rapports au travail des groupes sociaux, sous les effets successifs d'une crise profonde (arrivée de la précarité et de la flexibilité) faisant éclater le modèle salarial des Trente glorieuses ;
• la transformation des aspirations et des besoins résidentiels, tant au niveau du logement que des formes d'insertion urbaine, en liaison avec la recomposition des structures familiales et la modification des parcours et cycles de vie ;
• la transformation des modes de vie urbains du fait de l'accroissement considérable au cours des trente dernières années des possibilités de mobilité quotidienne et l'essor considérable des déplacements intra urbains.

Source : http://rp.urbanisme.equipement.gouv.fr/puca/agenda/actes_habitat_vie_urbaine.pdf

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-Herpin N., Verger D., 2008. ***Consommation et modes de vie en France : une approche sociologique et économique sur un demi-siècle,*** Paris, La Découverte, Coll. Grands Repères.

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-Le projet Energie, Transport, Habitat, Environnement, Localisations (ETHEL) vise à :

• simuler les conséquences –au plan de la consommation d'énergie et d'émission de GES– d'hypothèses sociétales et technologiques sur l'évolution des modes de vie, des localisations d'activités, des types de logements associés, des offres de transports et des comportements de déplacements associés ;
• en produisant des indicateurs environnementaux, spatiaux, économiques et sociaux ;
• pour situer les enjeux énergétiques, principalement, mais aussi financiers, sociaux et territoriaux de telle ou telle filière technologique (existante ou prospective) ou politique d'aménagement, de réglementation, de tarification, de fiscalité...
En bref, il s'agit de déterminer les marges de manoeuvre des pouvoirs publics, les cibles ou les politiques susceptibles d'avoir le meilleur rapport coût-efficacité. Le champ d'investigation de ce projet est, en matière de transports, limité aux déplacements des personnes mais dans le cadre de leur mobilité annuelle (non limité à la mobilité quotidienne ni à l'urbain) et, en matière d'habitat, principalement consacré à l'exploitation des logements (résidences principales). L'horizon est 2020.

Source : http://ethel.ish-lyon.cnrs.fr/

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-Raux C., Traisnel J.P., Nicolas J-P., Morice N., Delvert K., Macraigne S., Pochet P., 2004. ***Etat de l'art et synthèse en matière de prospective. ETHEL,*** Rapport R1, 67 pages.

Source : http://ethel.ish-lyon.cnrs.fr/Documents/ETHEL_Rapport_R1.pdf

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-Raux C., Traisnel J.P., Nicolas J.P., Maïzia M., Delvert K., 2005. ***Bilans énergétiques Transport-Habitat et méthodologie BETEL. ETHEL,*** Rapport R2. Action Concertée CNRS Ministère de la Recherche. LET, Lyon, 148 pages.

Ce rapport est structuré en quatre parties. La première partie dresse un bilan rapide des consommations énergétiques et émissions globales liées aux déplacements à l'exploitation du bâti (chauffage et autres usages). Les deuxième et troisième parties présentent la méthodologie BETEL respectivement pour l'habitat et le transport. La quatrième partie illustre ces méthodologies en présentant les premiers résultats.

Source : http://ethel.ish-lyon.cnrs.fr/Documents/Rapport_R2_v1.pdf

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-Raux C., Traisnel J.P., Pochet P., Maïzia M., Croissant Y., Bagard V., Peguy P.-Y., 2006. ***Analyse et modélisation des comportements transports-habitat-localisations. ETHEL.*** Rapport R3. Action Concertée CNRS – Ministère de la Recherche. LET, Lyon, 159 pages.

Le rapport est structuré en trois parties :
1. Une partie consacrée aux modèles de parc de logement et des consommations d'énergie dans le secteur résidentiel.
2. Une seconde partie consacrée à l'analyse et aux modèles de mobilité à courte distance et de mobilité en avion pour les déplacements non professionnels.
3. Une troisième partie consacrée au modèle de densités communales : ce dernier est à l'articulation des modèles de logement/habitat d'une part et des modèles de mobilité d'autre part.

Source : http://ethel.ish-lyon.cnrs.fr/Documents/ETHEL-Rapport_R3_v1.pdf

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-Robert M., 2005. ***Pour en finir avec la société de l'automobile***, CarFree France, 53 pages.

Voici en téléchargement gratuit, le livre de Marcel Robert sur la fin de la société de l'automobile. Cet ouvrage, édité numériquement par CarFree France, constitue une "mise en cohérence" de tout un ensemble d'articles et d'idées développés depuis 2004. Selon Denis Cheynet, qui a réalisé la préface du livre, "Marcel Robert nous montre que le choix de vivre sans voiture peut être fait aussi bien au niveau collectif qu'individuel. Ces choix deviennent urgents au fur et à mesure que nous mesurons les conséquences de nos modes de vie sur notre environnement. La question n'est plus de savoir si ces choix doivent être pris, mais quand nous aurons enfin le courage de les prendre".

Source : http://carfree.free.fr/pour_en_finir.pdf