

96/01153 The super-efficient passive building frontier

Lovins, A. *ASHRAE J.*, Jun. 1995, 37, (76), 79-81.
The author argues that integrated building design can yield superior comfort with about three to thirty times less mechanical energy and often with lower capital costs. Reports that in the US there has been misallocated around two hundred million tons of cooling capacity and 200 peak gigawatts of power supply to run it, at a total marginal cost of \$1 trillion, through failure to optimise the buildings that this capacity was installed in.

96/01154 Sustainable development and technology transfer: business as usual?

Flanders, L. L. *Natural Resources Forum*, Aug. 1995, 19, (3), 249-252.
The primary role of the Commission on Sustainable Development is to monitor progress in the implementation of Agenda 21 of the United Nations Conference on Environment and Development (UNCED, Rio de Janeiro, June 1992) and to suggest steps that governments and sectors of civil society can take to move forward on its implementation. The CSD is to consider information provided by governments and to make appropriate recommendations to the General Assembly keeping in mind that national governments have the main responsibility for implementing Agenda 21.

96/01155 Technical efficiency, production functions and conservation supply curves

Blumstein, C. and Stoft, S. E. *Energy Policy*, Sep. 1995, 23, (9), 765-768.
In a recent paper Huntington lays some of the groundwork for more meaningful discussions between economists and technologists on the apparent underinvestment in energy efficiency. In a discussion illustrated by a production function, he points out that the technical efficiency of economic actors should be treated as an empirical question. Huntington's groundwork can be further extended by observing that there is a close relationship between production functions and conservation supply curves, an analytical tool routinely used by technologists. The authors show that a conservation supply curve can be obtained from a production function by a simple transformation.

96/01156 THERMIE activities in Central and Eastern Europe

Cooper, D. *Energy World*, Sep. 1995, (231), 14-16.
The article provides an overview of the THERMIE programme, and reports on its progress in Central and Eastern Europe.

96/01157 Who is afraid of European Tendering?

Thorborg, L. *Gas (Netherlands)*, Nov. 1995, 115, (11), 12-15. (In Flemish)
The Directive on European Tendering, which also applies to the energy sector, stipulates that, from a specified quantity, the companies involved must tender the purchase of products, services and work at a European level. In the Netherlands, this directive has apparently not been met optimally yet, especially compared to the UK and Germany. Experiences in the UK and meanwhile also in the Netherlands show, however, that European tendering can save considerable costs. Disadvantages of European Tendering include the need for more inspections during work and the accompanying red tape.

18 ENERGY CONVERSION AND RECYCLING

96/01158 About the low parameters steam power recovery

Cardu, M. *Energy Convers. Mgmt.*, Oct. 1995, 36, (10), 963-967.
The paper shows the results of the research and designing activity in the Research and Designing Institute for Thermo-Power Equipment (ICPET-SA), to build steam turbine plants meant to convert the low parameters steam thermal power resulting from various technological processes into electrical power. Describes 25, 6 and 2 MW steam turbine plants built to recover the low parameters steam power which result from the technological processes in ferro-alloys, steel and iron, and glass industries.

96/01159 Adding coal ash to the composting mix

Beaver, T. *BioCycle*, 1995, 36, (3), 88-89.
Describes how the addition of coal ash to composting mix does not inhibit biological activity in composting and enhances the nutrient value of the final product and subsequently enhances crop production and soil fertility.

96/01160 The application of artificial zeolite (alkali-treated coal ash) to hydroponics. I. Effects of Ca and Na artificial zeolite addition to the nutrient solution on the growth and nutrients uptake of tomato plant

Jang, H. G. *et al.*, *Shokubutsu Kojo Gakkaishi*, 1995, 7, (2), 97-102. (In Japanese)
The research examined the effect of Ca and Na artificial zeolites obtained from industrial waste coal ash on the amounts of nutrients taken up from nutrient solution by tomato plants. The nutrients solution was varied in 9 treatments of different nutrient concentrations with and without zeolite. The coal ash was made useful for hydroponics by zeolite conversion.

96/01161 Automobile recycle in the United States: Energy impacts and waste generation

Das, S. *et al.*, *Resources, Conservation & Recycling*, Oct. 1995, 14, (3), 265-284.
Changes in the trends in the material composition of domestic and imported automobiles and the increasing cost of landfilling the non-recyclable portion of automobiles pose questions about the future of automobile recycling in the US. In response to these challenges, new and innovative approaches to automobile recycling are being developed. The paper presents the findings of a recent study to examine the impacts of these changes on the life cycle energy consumption of automobiles and on the quantity of waste that must be disposed of.

96/01162 Availability analysis of combustion flue gases—A case study

Abu-Arabi, M. and Tamimi, A. *Energy Convers. Mgmt.*, Dec. 1995, 36, (12), 1133-1137.
The thermodynamic availability of combustion flue gases was analysed and modelled. The results were correlated in a polynomial of third degree with a high degree of accuracy. It was found, for combustion processes, that the availability losses may reach up to 55% due to draft and dew point limitations in most fired heaters.

96/01163 Characteristics of two-phase closed thermosiphons for medium-temperature heat recovery applications

Sauciuc, I. *et al.*, *Heat Recovery Sys. CHP*, Oct. 1995, 15, (7), 631-640.
An investigation of thermosiphons at medium temperatures is described. Two-phase closed thermosiphons working under various conditions have been tested and their thermal performance has been measured for mean evaporator wall temperatures between 100°C and 250°C.

96/01164 Durable products recycling: Stakeholder perspectives and directions for public policy

Nash, J. *Resources, Conservation & Recycling*, Oct. 1995, 15, (1), 41-50.
A recent MIT conference on durable products recycling highlights different challenges facing suppliers, manufacturers, and recyclers. These challenges include uncertainty about the environmental benefits of recycling, unstable markets for recycled materials, variable quality, and lack of support from citizens and government. Conference discussions suggest directions for public and private policy in the US Government should focus upon strengthening market opportunities for recycling, for example, by eliminating federal subsidies for virgin materials extraction. Industry should work to improve product recyclability. While European countries are developing policies to require producers to take responsibility for products after they become obsolete, it appears that such policy approaches fail to address challenges identified at the conference.

96/01165 Energy conservation

Dauge, J. *et al.*, *Chauff. Vent. Condit.*, Jun.-Jul. 1995, (6), 33-44. (In French)
Four short articles dealing with energy-conserving technology.

96/01166 Environmental impacts by disposal of plastic from municipal solid waste

Molgaard, C. *Resources, Conservation & Recycling*, Oct. 1995, 15, (1), 51-63.
A steadily increasing demand for recycling of polymers has resulted in a demand for methods making it possible to compare different disposal processes' influence on the environment and on the resources. 'Ecoprofiles' can be used for ranking of different disposal processes in an environmentally and resource compatible way. An ecoprofile is an assessment of the environmental and resource impacts for a given disposal process, and those processes influenced by the disposal process. The following disposal processes are studied: Two different material recycling process that include separation of the plastic waste; material recycling without separation of the plastic waste; pyrolysis; incineration with heat recovery; and landfill.

96/01167 InRec process for recovering materials from solid waste incineration residues

Simon, F. G. and Andersson, K. H. *ABB Review*, 1995, (9), 15-20.
InRec is a new process offering an answer to the increasingly urgent question of what to do with the residues left over from solid waste incineration. State-of-the-art incineration grate technology is the starting point for InRec. Dry bottom ash is discharged from the furnace by the DryEx system and sorted by DryRec – a dry process for separating the iron, other metals and the mineral fraction. The untreated coarse fraction can be used direct in road construction or landfill.

96/01168 The jet-pump cycle – A low cost refrigerator option powered by waste heat

Eames, I. W. *et al.*, *Heat Recovery Sys. CHP*, Nov. 1995, 15, (8), 711-721.
Describes and evaluates the potential of the jet-pump cycle as a low-capital cost option for providing refrigeration using low-grade waste heat. Gives a short literature review.