

المملكة المغربية

†. مَلْكُوتِ مَرْوُقَاتِ | مَلْكُوتِ مَرْوُقَاتِ

Kingdom of Morocco



IMPLEMENTING THE FIRST NATIONALLY DETERMINED CONTRIBUTION (NDC) OF THE KINGDOM OF MOROCCO



Making Ambition for Sustainable Transformation a Tangible Reality



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« The Kingdom of Morocco has spared no effort to increase its contributions, as part of the international momentum seeking to curb greenhouse warming effects. Morocco, which was among the first countries to announce their intended Nationally Determined Contribution, has pledged recently to reduce the rate of emissions. In addition, it has taken concrete steps to ensure that 52% of the national energy supply comes from clean sources by the year 2030. »

*His Majesty the King Mohammed VI, King of Morocco
November 15th, 2016*

HIGH LEVEL OPENING MESSAGE

Following the major royal orientations that have given rise to major structuring projects in the field of renewable energies, road, port and airport infrastructure, agricultural development, industry ... and human development, a National Strategy for Sustainable Development (SNDD), was adopted by the Council of Ministers on 25 June 2017, with the aim of achieving a vision of a green and inclusive economy in Morocco by 2030. This strategy, which aims to strengthen the pillars of sustainable development, is divided into 31 strategic axes and 137 objectives with precise indicators, making it a tool for reference and convergence of different public policies aimed at the sustainable development of the country.

Morocco has put in place the major foundations to put its development on the path of the green economy in line with the new constitution which advocates sustainable development as a wise option to ensure economic prosperity, social progress, and a clean environment for all citizens.

Today, the fight against the harmful effects of climate change concerns us all, both the developed countries, responsible for global warming and the developing countries that are suffering the negative impacts of these global changes. Developing countries, including the Kingdom of Morocco, are called upon more than ever to make enormous efforts, including financial ones, to adapt and also set themselves on the trajectory of green growth by adopting low-carbon development strategies.

The Kingdom's national contribution, which was submitted on 2 June 2015, follows the decision taken at the 19th Climate Conference held in December 2013 in Warsaw, Poland, asking all countries to prepare and submit their proposals. national contributions in the fight against climate change, was prepared through a broad process of consultation with stakeholders. A process that has made it possible to review the policies and programs set up by Morocco to fight against global warming and to define the level of ambition that our country wishes to adopt as part of its national contribution.

This contribution includes about 50 climate change mitigation and adaptation measures, including the energy, agriculture, waste, industry and forestry sectors.

The validated national contribution was formally presented to the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC) at the COP21 Conference of the Parties in Paris, France in December 2015.

Under these contributions, and in application of the Paris Agreement, Morocco committed to reduce its greenhouse gas (GHG) emissions by 42% in 2030 compared to projected emissions in the same year the «normal course of business» scenario.

This objective corresponds to a cumulative reduction of more than 400 Mt eq-CO₂ over the period 2020-2030, requiring an overall investment of around \$ 50 billion by 2030, of which about \$ 40 billion dollars would be mobilized through international support as part of the Kingdom's conditional commitments.



On the initiative of Morocco and Germany, a new coalition was launched Tuesday in Marrakesh on the sidelines of COP22. This high-level partnership aims to launch concrete collaboration to facilitate the support and operationalization of the Nationally Determined Contributions (NDCs) and the Sustainable Development Goals (SDGs), bringing together developing and developed countries, as well as international institutions promoting long-term international climate action through better implementation of national climate action plans (NDCs) and strengthening the integration of NDCs into national planning.

Through this NDC partnership platform, 42 developed and developing countries (including Morocco, Ivory Coast, South Africa, Congo, Maldives, Marshall Islands, Seychelles Islands, Chile or Colombia, as well as several international institutions, will work together to ensure that countries receive the technical and financial support they need to achieve their climate and sustainable development goals as quickly and efficiently as possible.

In this regard, Morocco's commitment to support South-South cooperation in environmental protection and the fight against global warming, through, in particular, the various initiatives of the Moroccan Climate Change Competence Center 4C. Triangular cooperation in the area of climate change could strengthen and consolidate North-South-South relations in this direction, notably through the mobilization of green financing and the exchange of good practices.

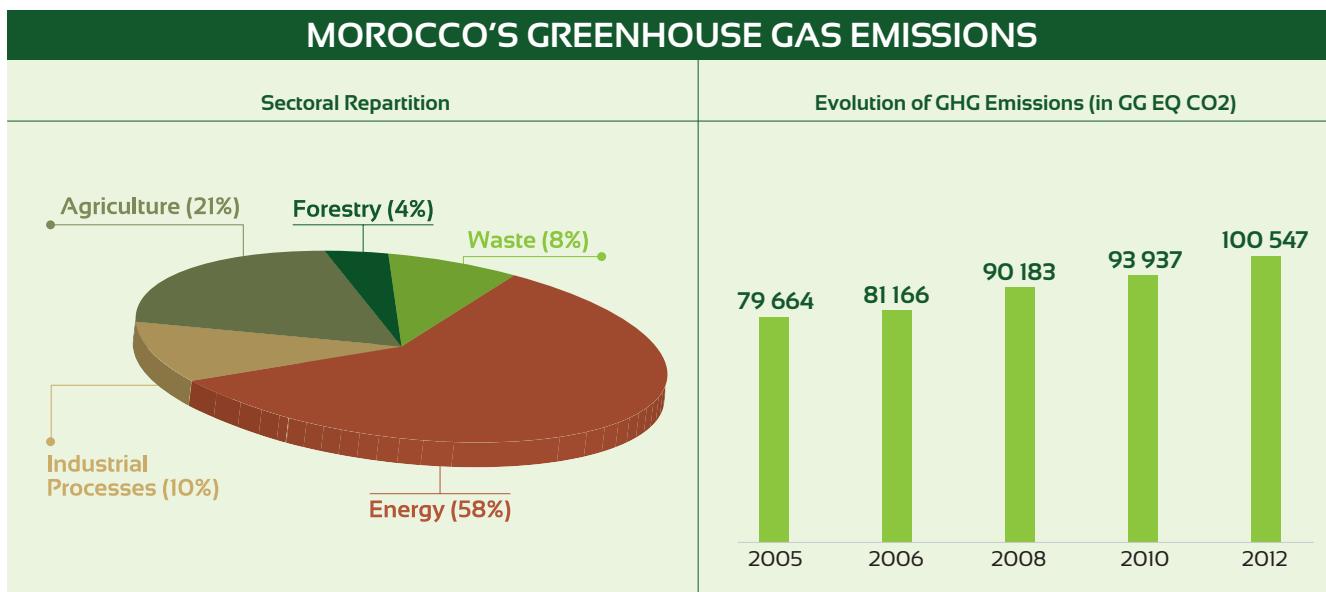
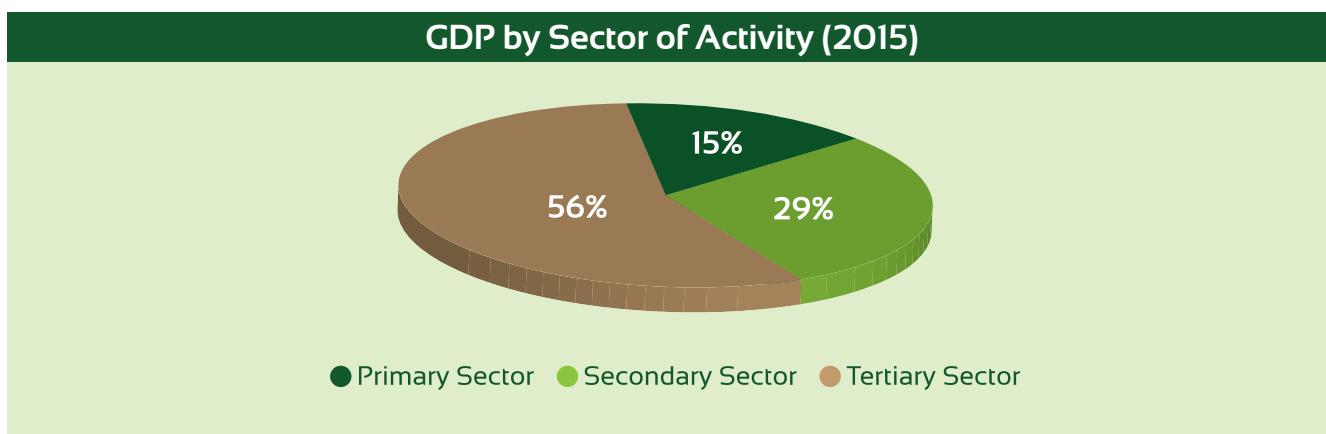
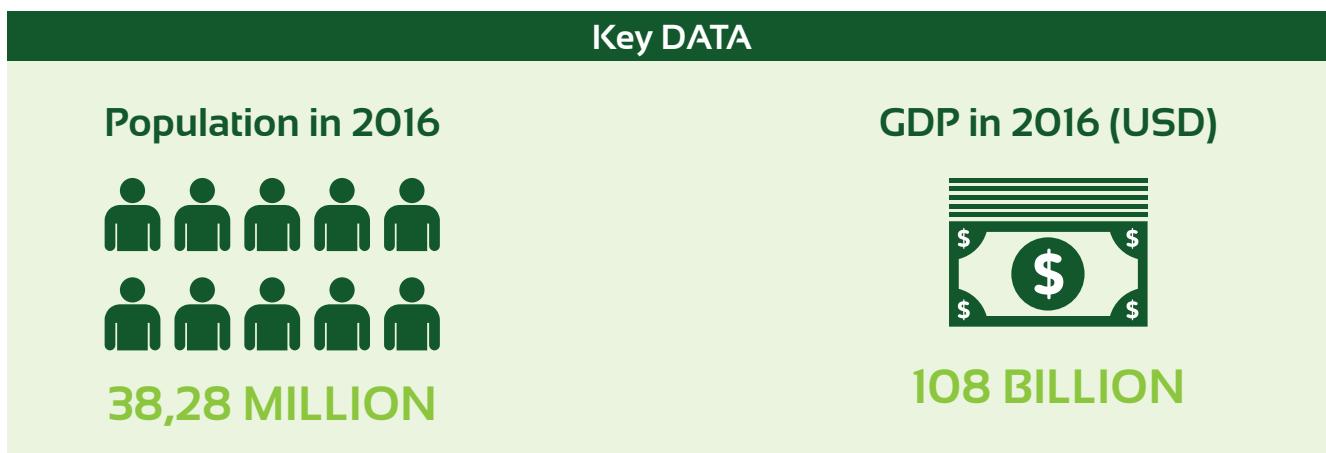
Currently, we are moving from a multilateral negotiations logic to a national implementation logic of the NDC, with a very ambitious timetable, since by 2018 we will have to start demonstrating the first results in terms of reducing our carbon emissions and the trajectory of achieving the objectives we have committed to.

To do this, the Kingdom's commitments under its NDC are based on three main axes: the establishment of an institutional framework; an operational framework and a financial framework. Today, we now have a clear roadmap for implementing the NDC of Morocco, articulated around 52 structuring projects for the realization of our 50-billion-dollar mitigation and adaptation effort. must chart the critical path of the Kingdom's commitment under the Paris Agreement.

Nezha El Ouafi
*State Secretary for Sustainable Development,
Kingdom of Morocco*

MOROCCO, AN EMERGING ECONOMY

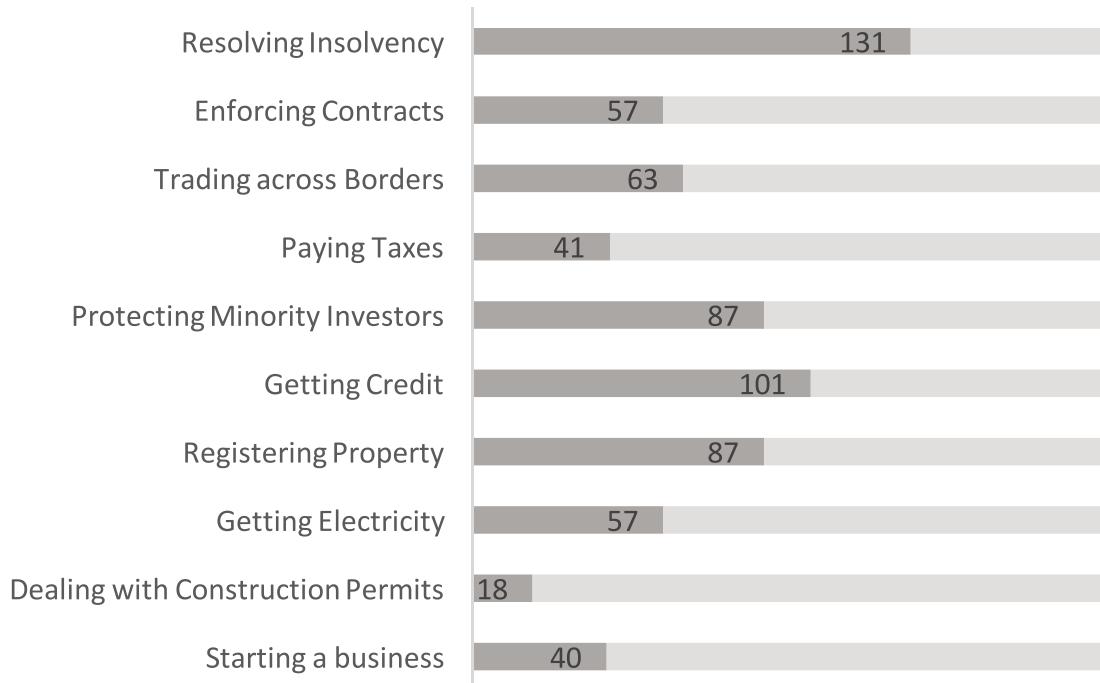
Key figures



Doing Business

Morocco has been the first ranked country in North Africa and third in Africa in the World Bank Doing Business Ranking for several years in a row

At A Glance



Such a ranking is an important element in the depiction of the broader picture of readiness and implementation of the NDC. Investment in both renewable energy and adaptation actions require a broader enabling environment that is contextualized to the national context. Benefiting from its solid experience in Public and Private partnerships, the Kingdom of Morocco is strongly positioned to access to and capitalize on the increase in Climate Finance flows.

(*) For more information on Distance to Frontier and Ease of Doing Business Ranking, please refer to the relevant section in the 2018 Doing Business Report.

MOROCCO, AN EMERGING ECONOMY

Climate Change in Morocco

The increase in yearly average temperature from 1961-2008 is clearly observable across 14 meteorological stations in Morocco. This increase varies from 0.1 to 0.4 °C per decade.

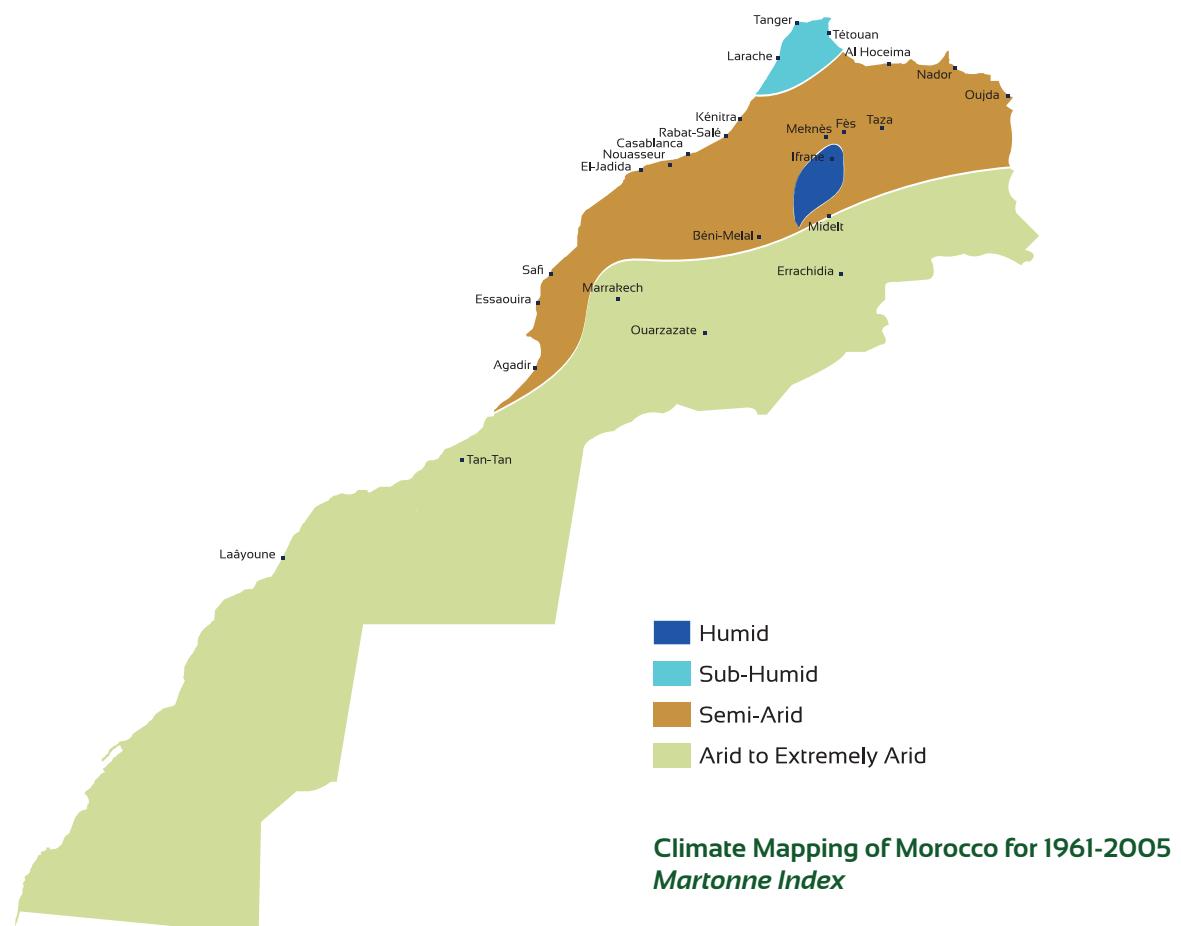
The Kingdom of Morocco is a country in North-West Africa. Located at a crossroads of civilisations, bridging Africa and the European coast located 14 km away, the Kingdom of Morocco benefits from a high level of diversity in cultures, beliefs, and landscapes.

Reflecting and fueling that diversity, the Climate in Morocco can be divided in four subcategories.

It is said that in Morocco, one can ski and swim on the same day thanks to the high-mountain ranges and the many beaches that pepper the 3,500 km of coastline of the country.

Such geographic and climatic diversity also implies a wide array of vulnerability when it comes to the Impacts of Climate Change: sea-level rise, droughts, floods, ocean acidification, etc.

Water Availability per capita is three times lower today than it was in 1960, it is projected to further deteriorate by an additional 30 % and reach 500 cubic meters per person per year by 2050, i.e. half the water scarcity threshold of 1000 cubic metres per person per year, due to the impacts of climate change, population and economic activity growth.



THE NDC

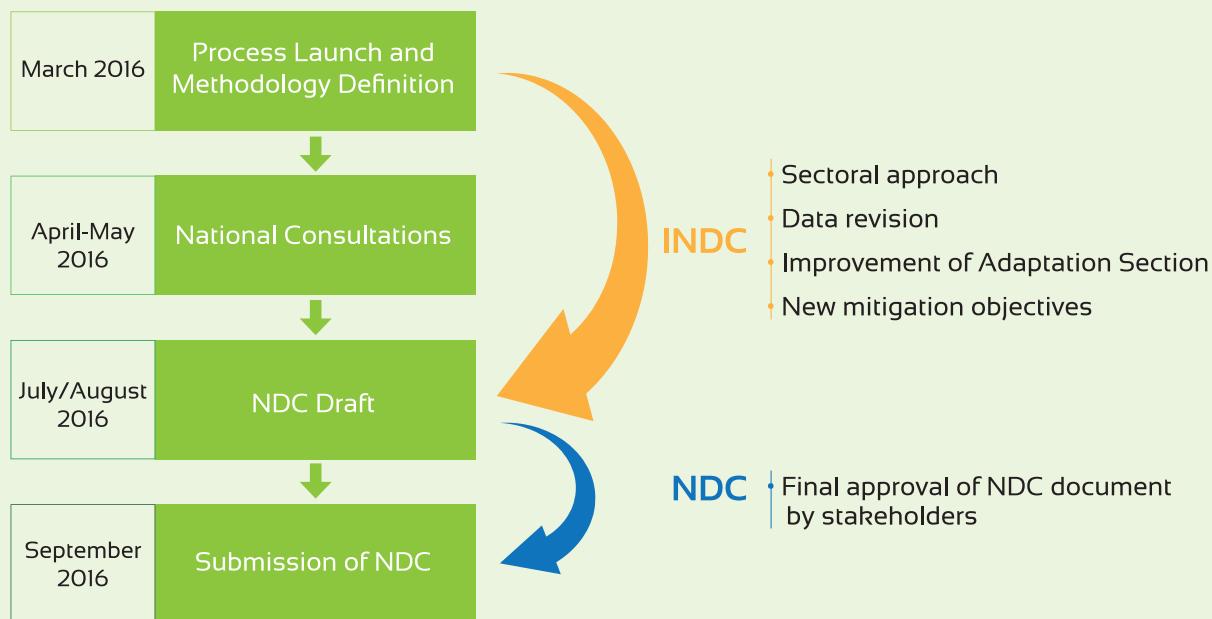
Highlights

While Morocco is only minimally responsible for the issue of Climate Change, its NDC was designed with the conviction that all countries must contribute to Global Ambition and Implementation. As a result, Morocco is a global leader for Climate Action:

- According to Germanwatch's Climate Change Performance Index 2017, the Climate Protection Performance of Morocco is "good" and ranked 3rd worldwide.
- According to Climate Analytics, Ecofys, the New Climate Institute, and the Potsdam Institute for Climate Impact Research, Morocco's NDC is the only 1.5° C Paris Agreement compatible NDC in the world.

From the Intended NDC to the NDC:

The revision of the Moroccan INDC towards a more ambitious NDC was managed through four participatory phases:



THE NDC

Key elements: Mitigation

17 %
unconditional

25 %
conditional

42% reduction compared
to Business As Usual. This
reduction represents a
mitigation of 527 MtCO2e
over the period
2020-2030

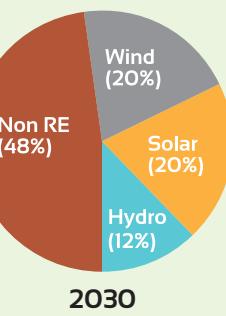
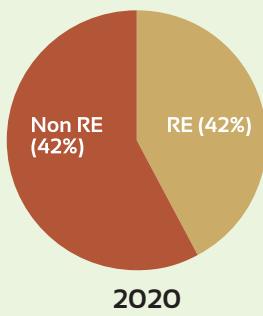
Financing Needs

Estimated total investment of 50 billion USD between 2010 and 2030:

- *Unconditional: 26 billion USD*
- *Conditional: 24 billion USD*

Energy Transformation

Installed Electricity Production Capacity



On top of the objectives in
terms of electricity production
outlined to the left, the energy
transition will also be supported
by a 15 % reduction in energy
consumption by 2030.

Key elements: Adaptation

Morocco is particularly vulnerable to the impacts of climate change:

- Regardless of the emission scenario considered, there will be a sizeable reduction in water availability by 2020 and water shortages between 2020 and 2050. According to projections, the decrease in rainfall will be in the order of 20% by 2050 with greater impacts in semi-arid plains.
- Crop yields will be impacted by climate change due to an increase in temperature and decrease in rainfall, starting from 2030.
- Morocco has 3,500 km of coastlines alongside the Atlantic and the Mediterranean and is exposed to severe erosion and significant assets at risk from increased flooding given the high concentration of urban and tourist around coastal cities.

Financing Needs

At minimum 35 billion USD for 2020-2030 for the most vulnerable sectors: water, forestry and agriculture.

Action Areas (2020 and 2030)

- Agriculture (Switch to localized irrigation systems, Extension and Modernisation of Irrigation Systems, Delegation of Irrigation services through Public-Private Partnerships, Hydro-Agricultural Infrastructure, Multi Risk Insurance...).
- Water (Reduction of overexploitation of groundwater, Water Treatment, Wastewater Treatment, Desalination, Improvement of Efficiency of Drinking Water Network...).
- Forests (replenishment, protection and afforestation...).
- Fisheries and Aquaculture (Sustainable Management, Reduction of Discharges, Establishment of marine protected areas...).

A STRONG NATIONAL FRAMEWORK FOR READINESS AND IMPLEMENTATION

The Constitution of Morocco, a Bedrock of Sustainability

The 2011 Constitution of the Kingdom of Morocco provides a high-level framing for the meaningful integration of sustainability in the mandate of governmental actors:

- Article 31 enshrines the enjoyment of all citizens to a set of rights, which include the **right to sustainable development**.

Article 31 of the Moroccan Constitution:

« The State, the public establishments and the territorial collectivities work for the mobilization of all the means available to facilitate the equal access of citizens to conditions that allow their enjoyment of the right to:

- (...)
- the access to water and a healthy environment
- sustainable development ».

- Article 35 puts sustainable development at the center of the State's action.
- Article 71 specified that the legislator (the Parliament) may draft laws regarding a whole array of topics, including sustainable development.
- Article 136 promotes public participation and puts forward the contribution that civil society may have on sustainable development.
- Article 152 identifies the Economic, Social and Environmental Council of Morocco as a body that may offer its opinion on the general orientations of the national economy and of sustainable development.
- Article 163 calls for the involvement of Moroccan Citizens living abroad in the Sustainable Development of the country.

A strong legal framework to support impactful Sustainability Measures: Excerpts

• Sustainable Development:

- > Framework Law 99-12 on the Environment and Sustainable Development (2014):
 - Article 2 recalls a series of important principles to guide the spirit of the law;
 - Article 3 highlights the importance of public participation in the environmental decision-making process and access to environmental data;
 - Article 4 sets the obligation for public or private, natural or legal persons to abstain from harming the environment;
 - Article 5 sets the obligation for public or private, natural or legal persons to contribute to individual and collective efforts;
 - Article 10 states that sustainable development is a course of action that is required from all actors of Moroccan Society.
- > Law 111-14 relative to the regions (2015) to catalyze regional actors.

• Renewable Energy:

- > Law 37-17 (2016) to ensure better governance and focus among the various stakeholders on renewable energy in Morocco;
- > Law 48-15 (2016) focuses on the regulation of the electricity sector;
- > Law 58-15 (2015) modifies and completes Law 13-09 on Renewable Energy (2010) to enable further liberalization of the energy market in Morocco.

• Energy Efficiency:

- > Law 47-09 (2011) to seek mechanisms to reduce energy usage;
- > Decree No 2-13-874 (2014) for low power consumption in Mosques.

• Adaptation:

- > Law 36-15 on Water (2016) to facilitate integrated water management, provide more coherence in the management of used and rain water, etc.;
- > Law 81-12 on Coastlines (2015) to enhance the legal framework for the protection of the coastlines, integrate the private sector and civil society in decision-making for coastal management, etc.

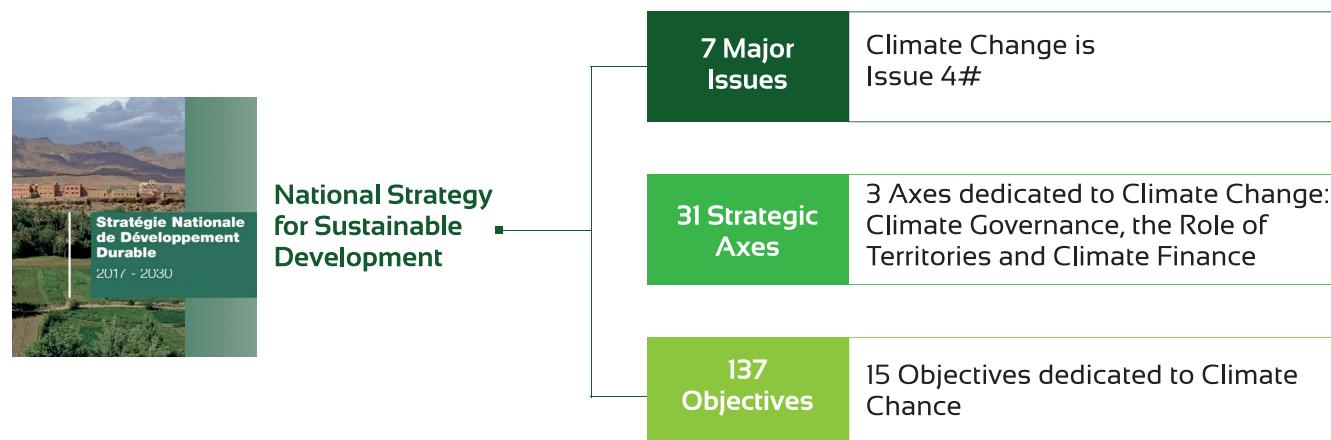
• Gender through efforts since 2002 to integrate gender elements in budgets.

A STRONG NATIONAL FRAMEWORK FOR READINESS AND IMPLEMENTATION

National Strategy for Sustainable Development

A pragmatic strategy to operationalize

- The National Charter for the Environment and Sustainable Development which set general principles, values, obligations and rights.
- The Framework Law for the Environment and Sustainable Development which set the general regulatory outline to which public policies must adhere.



Current Status

- The National Strategy for Sustainable Development was shown to the Government Council on June 1st, 2017.
- The National Strategy for Sustainable Development was Shown to the Ministers Council on June 25th, 2017.
- First Meeting of the Steering Committee of the National Strategy for Sustainable Development planned on November 22nd, 2017.

Selection of Relevant Sectoral Strategies with some illustrative measures and objectives *

ENERGY

National Energy Strategy

- Electricity Production Share of Mitigation Effort: 42.1%
- Provide, by 2030, 52 % of the installed electrical power from renewable sources, comprising in 20 % from solar energy, 20% from wind energy and 12% from hydraulic energy.
- Energy savings with the following breakdown: 48 % for industry, 23 % for transport, 19 % for residential and 10% for services.
- The mitigation effort in energy production and consumption between 2020 and 2030.

TRANSPORT

National Logistics Strategy

- Transport Share of Mitigation effort: 9.5%.
- Reduce tons/km by 30%.

WASTE

National Household and Similar Waste Program

- Waste Share of Mitigation effort: 13%.
- 20% recycling by 2020.
- Rehabilitate or close illegal landfills by 2020.

SANITATION

National Liquid Sanitation and Wastewater Treatment Program

- Reach an overall urban sewerage connection rate of 100 % by 2030.
- Enhance Wastewater reuse.

AGRICULTURE

Morocco Green Plan

- Agriculture share of Mitigation effort: 9.7%.
- Food security, Climate Change and Environmental Protection

FOREST

Preservation and Sustainable Forest Management Strategy

- Forest Share of Mitigation effort: 11.6%.
- Renewal, afforestation and suckering of 50,000 ha/y.
- Protect against erosion.

TRANSPORT

Urban Public Transit Improvement Strategy

- Large Scale Public Transit powered by Renewable Energy.
- Taxi Fleet Renewal Program.

(*) Please note that the share percentage of mitigation efforts presented on this page represent a distribution of the effort between 2020 and 2030 and include Agriculture, Forestry and Other Land Use. Please also note that various measures mentioned per strategy are only selected for illustrative purposes.

A STRONG NATIONAL FRAMEWORK FOR READINESS AND IMPLEMENTATION

Governance: At the National Level

Morocco has made a conscious effort to enhance the effectiveness of its governance. This included, amongst others, reforms of the ministerial level and the creation of a department for climate change, biodiversity and green economy. The governance structure and entities created to respond to the challenges posed by climate change are inspired by the structure of the UNFCCC convention itself.

The State Secretary for Sustainable Development is leading the **development of NDC Implementation Roadmap**. Central to developing and preparing the governance system for the implementation of the NDC was a comprehensive consultation process and gap analysis. Relevant sectors and stakeholders, including the finance and private sector, local governments and non-state actors, were consulted on the NDC governance structure. In addition, coordination meetings with international agencies and implementing partners were held.

A wide range of actors are part of the governance structure to implement the NDC. A central actor is the newly created 4C Maroc (for more on 4C Maroc, see also p. 19). 4C Maroc coordinates and liaises with the different actors for implementation. This includes, in particular, the National Investment Commission, which is presided over by the head of government. Further to this, 4C Maroc liaises different relevant committees such as the committees on finance, planning and design, transparency and MRV and capacity building.

In line with its international commitments under the United Nations Framework Convention on Climate Change, notably enhancing the transparency of actions to mitigate greenhouse gas (GHG) emissions, Morocco has introduced, since 2015, a National Greenhouse Gas Inventory System (GHG-IS). This has been done with the support of the project 4C (GIZ/IKI).

The governance of the Transparency and the National GHG Inventory System deserves particular emphasis as it is crucial to assess the progress made towards achieving the objectives of the NDCs and the Paris Agreement and also to understand development trends, improve resource management, as well as formulate policies and programmes to address climate change. In the Moroccan context, two committees, composed of different members, are central to the process. The National Inventory Committee is composed of different government agencies and the National Inventory Unit is composed of the focal points for each of the five inventory sectors – energy, industry, waste, agriculture, and forestry and land use – as well as 4C Morocco.

Subnational Actors at the frontline of Implementation: The Case of the Souss Massa Region



Opening of Climate Chance in Agadir, hosted by the President of the Souss Massa Region, M. Brahim Hafidi, in the presence of Patricia Espinosa, Executive Secretary of the UNFCCC Secretariat, Salaheddine Mezouar, President of COP22/CMP12/CMA1, and several high-level Moroccan Dignitaries including Minister of Energy, Mines and Sustainable Development, Aziz Rabbah, and Minister of Agriculture and Sea Fishing, Aziz Akhannouch.

Infra national regional actors, spurred by the advanced regionalization process in Morocco, have taken an increasingly important leadership role in planning and implementation for the Climate.

The Souss Massa Region, in particular, on top of a series of on the ground programs, has developed a series of regionally led tools such as an inventory system for GHG emissions and a Monitoring and Evaluation System on Vulnerability and Adaptation to Climate Change.

A STRONG NATIONAL FRAMEWORK FOR READINESS AND IMPLEMENTATION

Capacity Building

Negotiations

The State Secretary for Sustainable Development has been conducting yearly training workshops to the benefit of Moroccan Delegates to formal UNFCCC meetings for almost a decade. These workshops combine international and national expertise and provide an opportunity to advance the collective understanding around key negotiation topics.

Non-State Actors

Regional training workshops to the benefit of National and Subnational Non-State Actors take place several times every year.

Financial Sector

Morocco has been extremely successful in securing international climate finance in recent years. As a result, a range of key stakeholders, including government ministries and agencies, as well as project developers and implementers, have gained valuable experience in accessing funds, experience that will put Morocco in good stead to access and implement projects linked to the GCF, for example. Indeed, the NDA was established and related procedures were defined, including the implementation of key stakeholder engagement processes and the development of a climate finance country program in line with the Moroccan NDC.

A three-phased approach has been put forward to strengthen the capacity of the financial sector to provide the required skills and frameworks for the implementation of the NDC:

1. Workshop and Online Course (underway)

A capacity needs workshop discussed climate finance opportunities arising from the NDC implementation, as well as the roles and responsibilities of different actors for implementing the NDC. It included an interactive laboratory to collect innovative ideas for climate finance instruments in Morocco. This was complemented by an online course on climate finance primarily targeted at the financial sector.

2. Forum (planned)

Forum of national climate finance experts to define work streams, and possibly working groups. Currently envisioned work streams include:

- 1. ESG and ISO standards • 2. Banking • 3. Insurance.

3. Training Development by National Stakeholders (planned)

The different work streams identified during phase 2 will develop and provide training on relevant aspects in close collaboration with the Moroccan Federation of Financial Education and 4C Morocco.

Technology

Technology is a key enabler for impactful action for the Climate, both in the short term and the long term. To that effect, local integration is a central element of the NDC implementation. Recent renewable energy projects have been able to reach an integration ratio of 70%.

Entrepreneurship and Innovation

The Solar Cluster is a network of Moroccan stakeholders, with support from the GIZ and the World Bank, aiming at developing the Solar Energy Value Chain in Morocco.

Research and Development

Several stakeholders have strongly built their experience over the years in terms of research:

- **Adaptation:**

The National Institute of Agronomic Research and the Agriculture Development Agency are among many leading Moroccan stakeholders enhancing the national expertise in adapting to Climate Change.

- **Renewable Energy and Energy Efficiency:**

The Moroccan Agency for Energy Efficiency (AMEE) and the Research Institute on Solar Energy and New Energy (IRESEN) are enhancing national capacities on a daily basis. A new Research and Development Tower is currently being finalized by leading Renewable Energy Stakeholder MASEN within the Noor Complex near Ouarzazate.



Green Energy Park, Ben Gherir, Morocco

INTERNATIONAL COOPERATION AT THE CORE OF NDC IMPLEMENTATION

NDC Partnership

The NDC Partnership was launched during COP22 in Marrakech in November 2016 and its work is guided by a Steering Committee comprised of developed and developing nations and international institutions, and facilitated by a Support Unit hosted by the World Resources Institute and based in Washington and Bonn, Germany. The partnership is co-chaired by the Governments of Morocco and Germany and currently has:



- 19 Partner Countries in Africa.
- 11 Partner Countries in Asia.
- 11 Partner Countries in Europe.
- 16 Partner Countries in the Americas.
- 5 Partner Countries in Oceania.
- 9 Partner Institutions.

The partnership **objective** is to “enhance cooperation so that countries have access to the technical knowledge and financial support they need to achieve large-scale climate and sustainable development targets as quickly and effectively as possible”.

By adopting a country driven approach, it has adopted a **unique approach** that hopes to go beyond supporting effective development action to ensuring long-term, climate-resilient and carbon neutral growth. The focus is on countries designing their own climate-resilient development pathways and the NDCP serves as a vehicle to provide a flexible set of knowledge, technical and financial services. The NDCP aims to identify and respond to gaps in current efforts and to facilitate access to the required tools and support, through its members.

The NDCP works directly with ministries and other stakeholders to needs and identify opportunities for collaboration through its' **in-country engagement** strategy.



The 4C Maroc

4C Maroc was founded in October 2016 as a public interest group as a platform for strengthening the skills of relevant actors and stakeholders from different sectors and a hub to develop and share climate change expertise that is open to other actors from the region and from Africa. From its' inception the group has received widespread support and interest from the relevant ministries and (semi)-public bodies, private sector stakeholders and civil society. It has also received crucial international support from the German Ministry of the Environment and the German Development Cooperation GIZ including in launching the centre, developing the programme of the centre and supporting the centralisation and dissemination of information on climate change projects and experts through an online database.

The stakeholders are structured into four main clusters:

- **Public and territorial authorities cluster** – supports mainstreaming climate change and providing training for the international climate negotiations.
- **Private sector / (semi) public undertakings cluster** – supports the accreditation of bodies for climate finance, green investment and climate risk insurance.
- **Civil society cluster** – supports awareness raising and education and improving civil society participation in national and international climate change processes.
- **Researchers and expert cluster** – supports national and local research and enhancing the scientific content of country reports.

Similarly, the work programme is also grouped into four main pillars of work:

1. Institutionalisation;
2. Development of mitigation and adaptation instruments for the implementation of climate policy;
3. Training and Capacity Building;
4. Exchange of experiences and international dialogue.

INTERNATIONAL COOPERATION AT THE CORE OF NDC IMPLEMENTATION

The International Network of Centers of Excellence and Think Tanks for Capacity Building (INCCETT 4CB)

The network was launched as a **response to the need for capacity building** to ensure climate action and enhance ambition. This urgency is reflected amongst others in article 11 of the Paris Agreement for all parties to cooperate on enhancing capacity-building actions including through regional and multilateral approaches. Similarly, the majority of countries have stressed the need for capacity building for actions on adaptation and mitigation in their NDCs.

4C Maroc hosts the INCCETT 4CB Secretariat and is one of the **founding members**:



INCCETT 4CB seeks to enhance the impact of capacity-building activities by strengthening coherence and enhancing coordination between major global centres of excellence and think tanks. It **aims** to enhance climate action by strengthening South-South-North collaboration amongst research centres, supporting the scaling up and enhancing of capacity building, providing information for NDC implementation as well as an evidence base for capacity building, enhancing understanding between science and policy making, and supporting linkages between NDCs and SDGs.

Its **main areas of work** will include researching on new models for building capacity based on existing knowledge and insights, promoting collaboration between research centres and encouraging enhancing policy relevance of their activities, as well as developing approaches and tools to better understand the effectiveness of capacity-building activities undertaken.

ONGOING IMPLEMENTATION

Overview of Climate Action under the NDC and Beyond

While the first part of this report has provided an introduction on Morocco's situation and the legal and governance framework Morocco has put in place to respond to climate challenges, the second part of this report will examine how Morocco's commitments are translated into concrete action and projects.

Renewable energy currently accounts for more than 34 % of installed Power

If relevant projects in the pipeline are implemented in a timely manner, Morocco will exceed its 42% 2020 target by several percentage points.

Morocco's NDC lists a wide range of adaptation actions as well as conditional and unconditional mitigation action as further detailed below.

Actions resulting in Emission Reductions of more than 10,000 in MT CO2 eq

Unconditional	Conditional		
Combined-Cycle Plants, 57518	National Wind Plan , 50183	Treatment of Household Waste, 58811	Strategy on Logistics Development, 35122
	Olive Tree Program, 13699	Hydroel... Power Plants, 12354	
Afforestation/ Reforestation Program, 28358	Promotion of photovoltaics, 10689	Extension A-/ Reforestation Program, 25090	Extension National Wind Plan , 18139
National Solar Plan, 42557		Low-energy lighting residences, 13932	Extension National Solar Plan, 13605
			Industry Biomass Valoriz... 10705
			Extension Combined-Cycle Plants, 10173

■ Conditional ■ Unconditional

ONGOING IMPLEMENTATION

Actions resulting in Emission Reductions between 3000 and 10000 in MT CO₂ eq

Conditional				Unconditional	
Natural Gas in Industrial Sector, 9548		Extension Olive Tree Program, 6591	Installation of Photovoltaic Panels, 4145		Extension Casablanca Tram, 5915
GHG Emission Recycling from Wastewater Treatment Plants, 9267	Energy Recovery from Compress... Project, 3995	Extension Cactus Planting Program, 3808	Extension Fruit Arboriculture Program, 3471	Cactus Planting Program, 7892	Fruit Arboriculture Program, 5322
			Extension Management of Forestry Climate Risk, 3345	Large Taxi Upgrade Plan, 6073	Citrus Planting Program, 3660

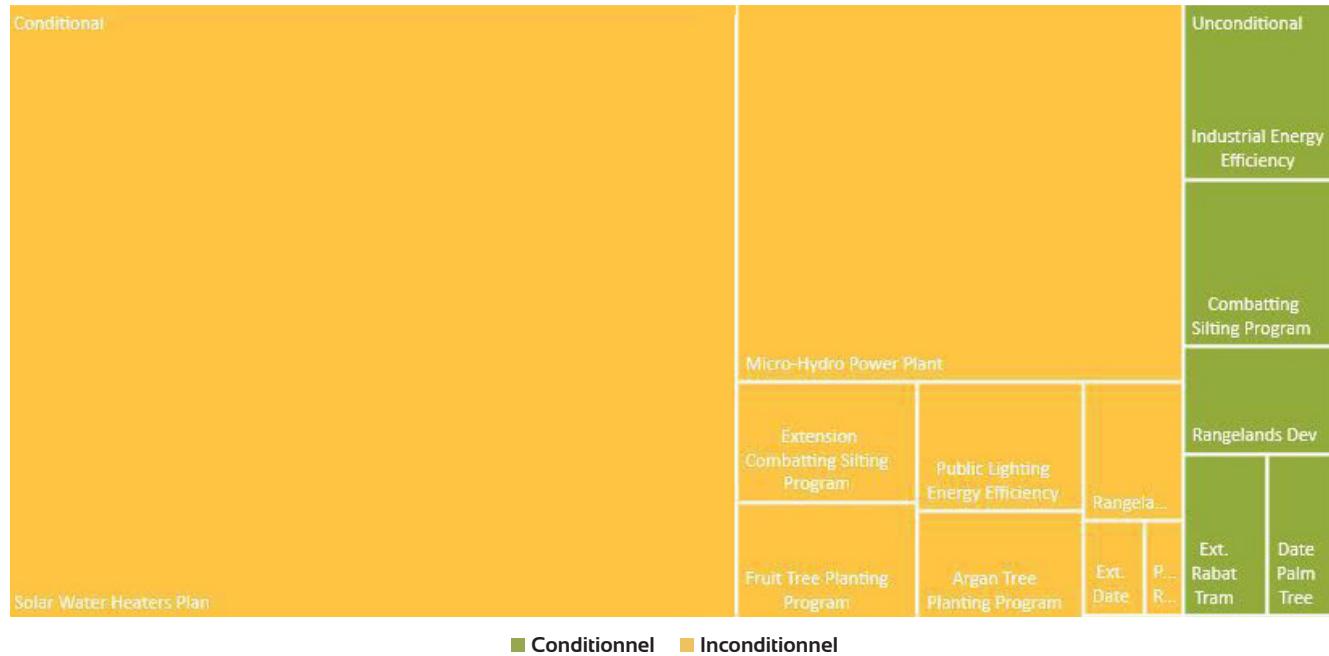
■ Conditional ■ Unconditional

Actions resulting in Emission Reductions between 1000 and 3000 MT CO₂ eq

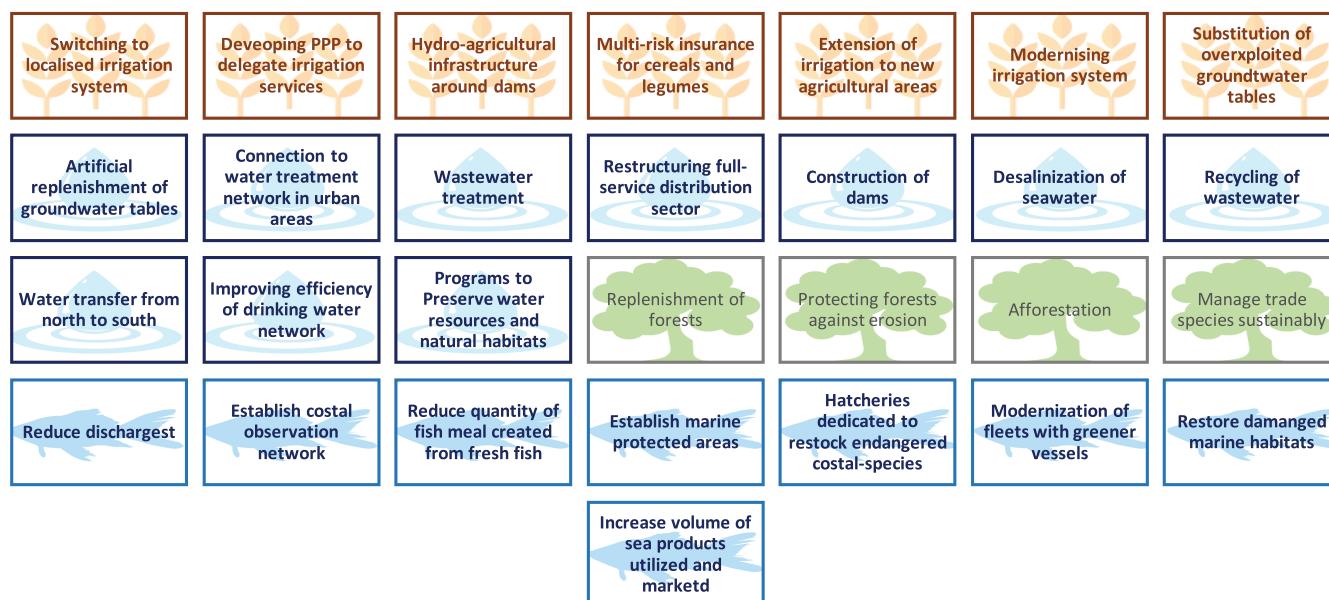
Unconditional				Conditional	
Fruit Arboriculture Program, 5322	Citrus Planting Program, 3660	Certification Labelling Refrigerators, 1461	Private Wind Warm, 1255	Fly Ash from Building Materials Repurposing, 2973	Centralized Production of Utilities for Integrated Industrial Park Pilot, 2457
	Management of Forestry Climate Risk, 2625	Low Carbon City, 1232	Energy Efficiency Tourism Sector, 1229	Upgrade of Utility Vehicles, 2216	Extension Citrus Planting Program, 2118
		Energy Efficient Building Wraps, 1229			Energy and Output Managem... System Program, 1587

■ Conditional ■ Unconditional

Actions resulting in Emission Reductions below 1000 MT CO₂ eq



Adaptation Actions proposed under the NDC



ONGOING IMPLEMENTATION

Selection of Projects

The projects on the following topics have been selected in line with the criteria set out in the box below and will be further profiled on the next pages.

Methodology for the Selection of Case Studies

Scope: Projects were chosen from a list of 55 projects listed in the Moroccan NDC, complemented by a list of projects suggested by local experts and then assessed and ranked by a team of experts based on the criteria below.

Criteria used to select representative best practice examples included

- Quality of the information available.
- Evidence of Readiness including:
 - Tie in with the legal framework;
 - Example of Governance;
 - Alignment with Morocco's SDG Strategy;
 - Financing Instruments;
 - Stakeholder Engagement;
 - Readiness of Project for MRV;
 - Private/Financial Sector /International Donor Involvement.
- Upscaling Potential.
- Diversity of Focus and Subject matter of the Project.
- Scale of the project (cost, reduction of GHG).
- Conditionality of the project.

Overview Selected Projects

- National Wind Energy Plan 2020.
- National Solar Energy Plan 2020.
- Sustainable Transport.
- Waste to Energy Plant in Fes.
- Fossil Fuel Subsidies Reform.



ONGOING IMPLEMENTATION: PROJECTS



Wind Energy

NDC Impact

50,183 M teq-CO₂ emission reduction for 2020-2030.

Scale of Project

Estimated cost of 7 billion USD.

Conditionality Element

73% of the potential emission reductions over the period 2020-2030 are unconditional.

Financing Elements

The Integrated Wind Power Plan will enable savings of 740 million USD.

Blended Financing.

Legal and Governance Elements

An important optimization of the legal and governance framework for renewable energy in Morocco has been taking place in the last several years and further regulatory clarity is being provided.

Highlights



Key figures

- More than 2000 MW pledged.
- 800 MW in operation.
- 550 MW in development.
- Around 850 MW under selection process.

World record

- World record of wind power cost of 3.6 Cent USD/kWh.

Stakeholder Engagement

- A stable, innovative, and competitive environment has enabled ambitious Public/Private Partnerships such as the EBRD/BMCE/CTF investment in the Khaladii wind Farm near Tangiers.
- Siemens/Gamesa invested more than 100 Million USD for the first Wind Turbine Blades Plant in Africa and the Middle East, inaugurated on October 11th 2017.

ONGOING IMPLEMENTATION: PROJECTS

Highlights



Solar Energy

NDC Impact

56.162 M teq-CO₂ emission reduction for 2020-2030.

Scale of Project

Estimated cost of 18 billion USD.

Conditionality Element

76% of the potential emission reductions over the period 2020-2030 are unconditional.

Financing Elements

MASEN plays a leading role with lending funds secured from the African Development Bank, the Agence Française de Développement, the Clean Technology Fund, the European Commission, the European Investment Bank, Kreditanstalt für Wiederaufbau and the World Bank.

MASEN emitted the first Moroccan Green Bond raising 150 million USD for the financing of Noor Laayoune, Boujdour and Ouarzazate IV.

Legal and Governance Elements

An important optimization of the legal and governance framework for renewable energy in Morocco has been taking place in the last several years and further regulatory clarity is currently being provided.

Key figures

- More than 900 MW pledged.
- 160 MW in operation.
- 350 MW in development.
- Around 400 MW under selection process.

Zoom on Noor Ouarzazate

- 4 Phases:
 - > Noor 1: 160 MW Concentrated Solar Power Parabolic;
 - > Noor 2: 200 MW Concentrated Solar Power Parabolic;
 - > Noor 3: 150 MW Concentrated Solar Power Tower;
 - > Noor 4: 70 MW Photovoltaic.
- 3000 Ha Surface Area.
- 580 MW Total Capacity by 2018.

ONGOING IMPLEMENTATION: PROJECTS



Sustainable Transport

NDC Impact

Mitigation Potential > 50 MT CO₂ eq over 2020-2030.

Scale of Project

Small, medium and large.

Conditionality Element

Unconditional: Extension of Tramway Lines in Casablanca and Rabat, Large Taxi Upgrade Plan, Electric buses.

Conditional: National Logistics Strategy, Utility vehicle upgrade plan.

Financing Elements

Overall (NDC projects only): 87% unconditional.

Extension of Tramway Lines in Casablanca and Rabat: 1,757 Million USD.

Renewal of intercity taxi fleet: 650 Million USD.

Bus cost: 420,000 USD financed by the Interior Ministry of Morocco.

Legal and Governance Elements

These projects are characterized by strong involvement from municipalities.

Highlights

Context:

Morocco's early mitigation projects are focusing on the energy sector. However, there is significant mitigation potential in its' transport sector which consumes up to 38% of its energy according to estimates. Reflecting this potential, Morocco has launched several initiatives in the transport sector, including a project on "Mainstreaming climate change in the National Logistics Strategy and Roll-Out of Integrated Logistics Platform" as well as transformational mobility projects such as tramway lines and their extension in urban centers, large taxi upgrade plan, utility vehicle upgrade plan, and incremental deployment of electric buses.

Tramway of Casablanca

- New tramway line T2 will include 33 stations and serve more than one million citizens.
- Extension and optimisation of existing line T1.
- Operational by 2018.



Electric Buses Marrakech

- Powered by a Solar Plant at the entrance of the city.
- 10 Electric Buses in circulation since September to carry 45 000 individuals/day.
- Objective of 30 buses by 2019.



Tramway of Rabat

- Extension of existing line will reach an additional 300 000 citizens of Rabat and transport an additional 40 000 passengers per day.
- Operational by 2019.



ONGOING IMPLEMENTATION: PROJECTS

Highlights



Waste to Energy: The Fes Case

NDC Impact

Mitigation Potential Total of 1.19 MT CO₂ eq from 2013 to 2023.

Scale of Project

Small.

Conditionality Element

Unconditional.

Financing Elements

Public/Private partnership:

- *ECOMED invested more than 10 million USD in the landfill including 2.5 million USD in bioelectrical equipment.*
- *City of Fes funded the construction of a medium-voltage line and the linking of the station to the city's electrical network.*
- *Interior Ministry.*

CDM Project Number 9761.

Legal and Governance Elements

Direct linkage with the city and the Interior Ministry.

Key figures

- More than 3 km of leachate drainage network.
- More than 12 km of Biogas Collection Network.
- Allows the City of Fes to mine up to 5 MW of energy to be used for:
 - > Street Lighting (up to 3 MW);
 - > City Facilities (up to 2 MW).
- Currently, a third of the city of Fes is lit up thanks to energy provided by this station.
- Revenue in renewable energy production estimated at around 740 000 USD for the first year of operation of this plant (2015).



ONGOING IMPLEMENTATION: PROJECTS

Fossil Fuel Subsidies Reform

NDC Impact

Estimated GHG emission reduction of 12.8 MT CO₂ eq from 2012 to 2030.

Scale of Project

Large.

Conditionality Element

Unconditional.

Financing Elements

No specific financing required as such a measure would free public financing resources.

Legal and Governance Elements

Key stakeholders include the Delegate Ministry to the Head of the Government in charge of General Affairs and Governance, the Ministry of the Economy and Finance, the Compensation Fund, the Ministry of Energy, Mines and Sustainable Development, the Consortium of the Petroleum Sector of Morocco as well as the International Monetary Fund.

Highlights

In the context of poverty eradication, economic diversification, and sustainable development, fossil fuel subsidies can play an important role in enabling more ambition for the Climate and supporting NDC implementation.

As a country poor in fossil energy resources and heavily dependent on the importation of such resources, fossil fuel subsidies have historically been a significant drain on public resources, in particular after 2008.

Therefore, and in order to promote the transformation that underpins Climate Action, in the context of sustainable development, and in alignment with coherent national public policies, Morocco has been gradually phasing out fossil fuel subsidies since 2012, in particular for liquid petroleum products such as diesel, while closely monitoring the potential social impacts and putting forward the importance of solidarity with the most vulnerable.

As a consequence, compensation expenses have already been reduced by 72% in 2015 compared to 2012, enabling reallocation of public finance flows to support and strengthen social programs.

While already mostly in effect by the time of the NDC design, these considerations have not been included in the NDC.

A 2015 study conducted jointly by the State Secretary for Sustainable Development, 4C Maroc, and IISD concluded that:

- Existing and planned Fossil Fuel subsidies phase out would result in 10 MT CO₂ eq reduction from 2012 to 2030.
- Deeper phase out of subsidies (butane and full liberalization of electricity prices) would result in an extra 2.8 MT CO₂ eq reduction from 2012 to 2030.

