

# The Moroccan Finnish Energy Forum EnergyDays



*Where the Sky is the limit*

■ 23-24 May 2017

Grand Mogador Luxury Hotel, Casablanca - Morocco

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# TABLE OF CONTENT

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Event Details

Practical information

The United Kingdom of Morocco - Market Study

More information and registration

# EVENT DETAILS

- Introduction to the Event
- Date & Venue
- Program Structure
- Target Audience
- Objectives

# INTRODUCTION TO THE EVENT

Merinova Oy, with the support of Ministry for Foreign Affairs of Finland, and Team Finland, is arranging the Moroccan Finnish Energy Forum - Energy Days on the 23rd and 24th of May 2017.

The focuses is on the vast opportunities related to energy production and distribution, smart power generation, smart grids, energy efficiency, and renewable energy.

EnergyDays targets Moroccan and Finnish companies and public organization that seek innovative ways to unlock the Finnish Moroccan unmet collaboration opportunities within the energy sector.

This event is for participants from both countries that are willing to strengthen the business cooperation.

A broad range of energy focused stakeholders are invited to join the event either by supporting the organizers or by participating.



# DATE & VENUE | May 23-24 2017

 Grand Mogador Luxury Hotel,  
Casablanca - Morocco

The Moroccan Finnish Energy Forum  
**EnergyDays**   
*Where the Sky is the limit*



Grand Mogador  
LUXURY HOTELS



# PROGRAM STRUCTURE

23.5

**08:00 - 08:15** Registration and Welcoming Coffee

**08:15 - 08:30** Official opening Ceremony

**08:30 - 11:00** Moroccan Session

- Moroccan Energy Market overview (ONEE + MEM)
- Renewable Energy Plan (ADEREE)
- Energy Potential in Morocco

Solar (MASEN + Aqua ),

Wind + Hydro ( Nareva Holding)

Waste, Biomass (ME+ CEV)

**11:00 - 11:30** Coffee Break

**11:30 - 12:30** Investments & Financing Mechanism

- Moroccan Funding and investment Panel (SIE+WAFACASH-CFC- PBM)
- International Funding and Mechanism Panel (EBRD - EIB - AFD - WB)

**12:30 - 13:30** Networking Lunch

**13:30 - 16:00** Finnish Sessions

- Energy Efficiency trends
- Smart Power Generation
- Smart Grid solutions
- Renewable Energy

**17:00 - 18:00** Networking session

# ENERGY DAYS FORUM

24.5

**08:00 - 08:30** Welcoming Coffee

**08:30 - 11:00** Workshops

- Energy Efficiency trends
- Smart Power Generation
- Smart Grid solutions
- Renewable Energy

**11:00 - 11:30** Coffee Break

**12:30 - 13:30** Networking Lunch

**13:30 - 16:00** B2B Meetings

**16:00 - 17:00** Closing Ceremony

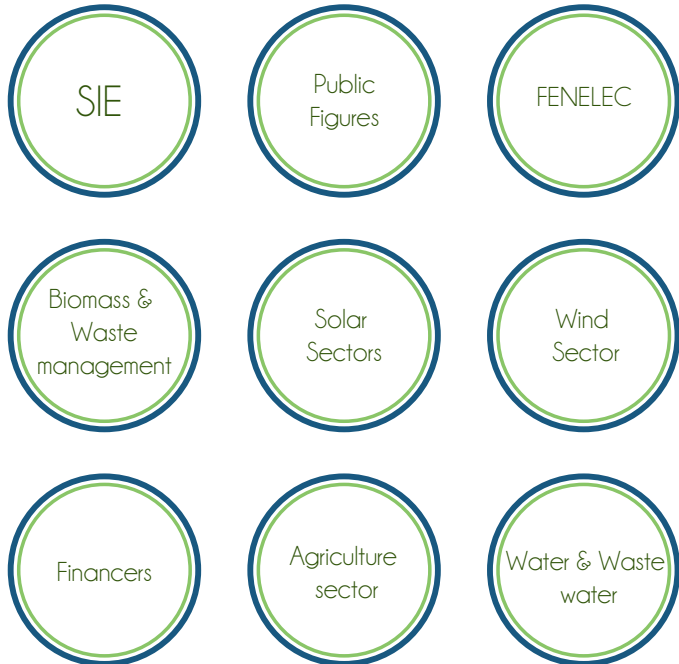
Translations services, Lunchs, coffee breaks, block-notes, internet, & customised session are included in the participation fees.

# CONFERENCE ROOM LAYOUT TARGET AUDIENCE

STAGE

Screen 1

Screen 2



Press

Interpreters

Info

ENTRANCE

Registration

# OBJECTIVES

Energy Days events are primarily attended by decision makers from leading companies and institutions with real-Local experiences and knowledge to share, in an unbiased and neutral environment, with high-quality presentations, case studies, and panel discussion forums. All event participants will be able to learn from and interact with senior-level experts and thought leaders in their specific field.

Obtaining an overall impression of the Moroccan energy market situation

Initiating new relations & Acquiring new partners

Unique Networking Opportunities

The event is mainly made to create a unique matchmaking platform in Morocco, where the focus is to strengthen cooperation between Moroccan organization and their Finnish counterpart for the following objectives

Promote the new trends within the Energy and Renewable Energy Technology

Open up new business and development opportunities

Identify the area of cooperation



# THE UNITED KINGDOM OF MOROCCO – MARKET STUDY

Target market overview

Socio-economic context – Taxation

Ease of doing business

Morocco – Growth in electricity demand

Regulatory framework

Renewable energy - target and challenges

Major projects up to 2020 – Waste and biomass

Major projects up to 2020 – Solar, wind and Hydropower

Key energy stakeholders



# TARGET MARKET OVERVIEW

## Morocco Socio-economic context -Key facts and political and administrative organization

Official Name	Kingdom of Morocco
Area	(712.550 Km <sup>2</sup> (446.550 Km <sup>2</sup> excluding Western Sahara)
Population	33.921.203 inhabitants (39th the world), with an annual growth rate of 1,4% Main cities: Casablanca: 3.359.818 Fez: 1.112.072 Tangier: 947.952 Marrakesh: 928.850
Religion	Muslims (99%), others (1%)
Natural Resources	Phosphates, iron mineral, manganese, lead, zinc, fish and salt
Currency	Moroccan Dirham (MAD)
Administrative Division	12 regions

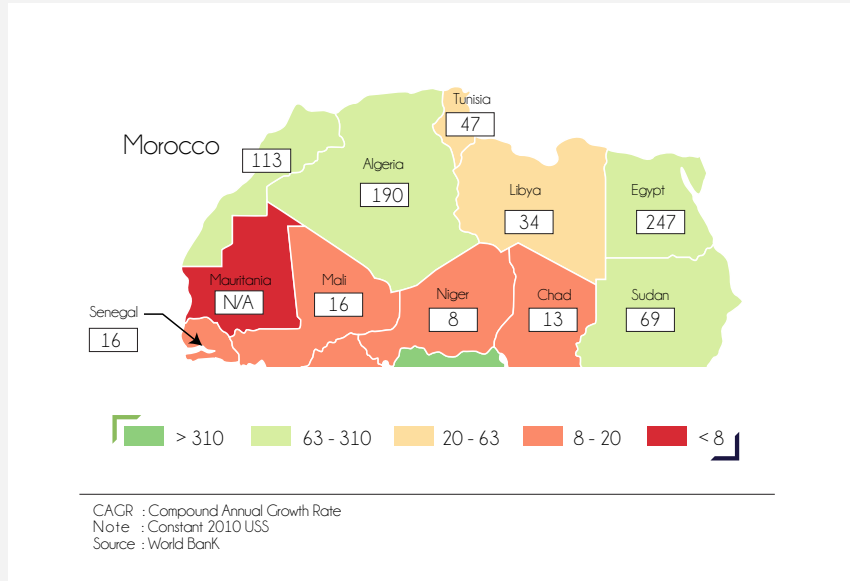
Source: United Nations, World Bank



# SOCIO-ECONOMIC CONTEXT - TAXATION

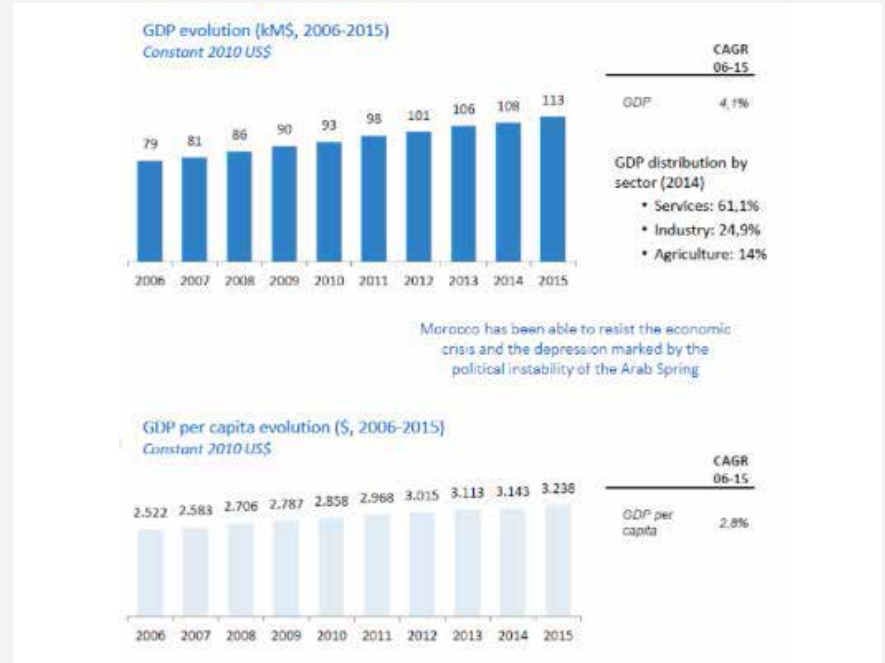
The country has performed strongly over the last years, with an annual growth rate over 4% since 2006 and a GDP per capita slightly above 3k\$ in 2015

GDP at constant 2010 US\$ values (kM\$, 2015)



Morocco has a GDP of 113 kM\$, which is lower than other countries in North Africa like Egypt and Algeria, ...

GDP evolution (kM\$, 2006-2015) Constant 2010 US\$



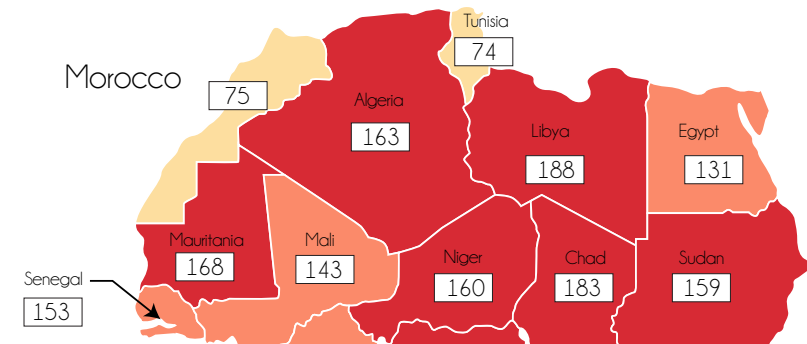
# EASE OF DOING BUSINESS

Morocco ranks the second highest out of the North African countries in the world ranking of Ease of Doing Business (75th place)



The ranking measures the laws and regulatory framework which favour commercial activity, including measures which encourage new businesses to start, construction permits, electricity generation, property registration, access to credits, tax burden, etc.

Source: World Bank Doing Business 2016 Measuring Regulatory Quality and Efficiency



Position (2016)



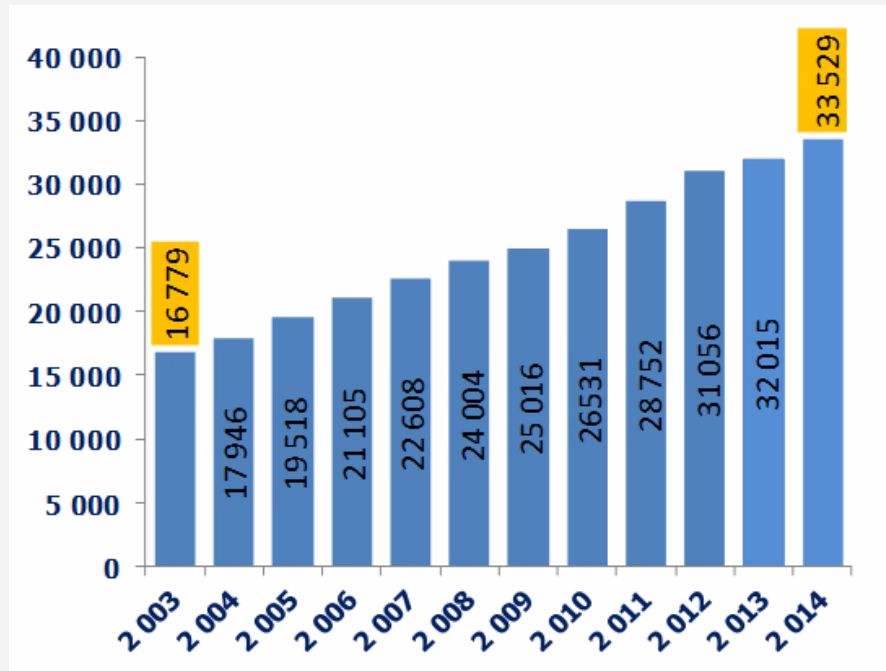
Morocco's ranking has improved considerably over the last years, from 129th place in 2008 to 75th place this year



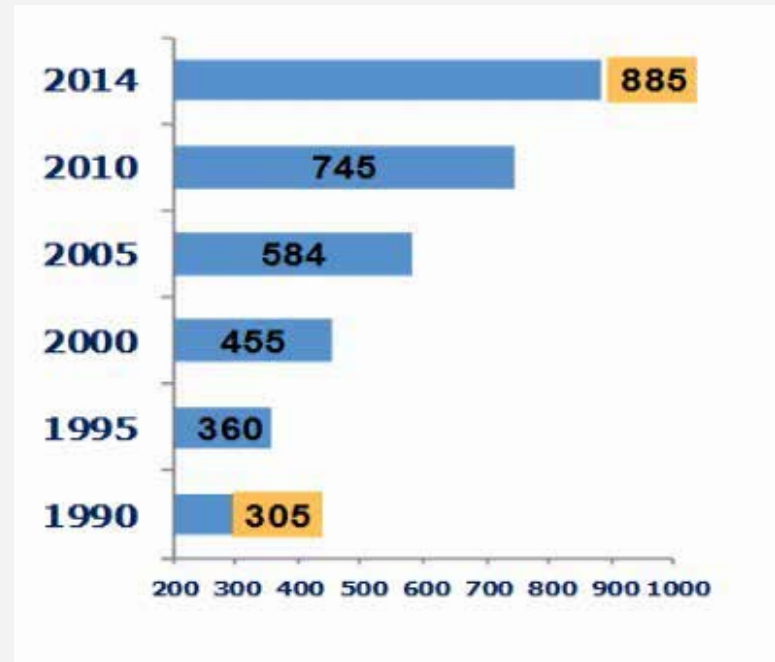
# MOROCCO — GROWTH IN ELECTRICITY DEMAND

During the last decade, historical annual growth averaged ~6.5%, supported by sustainable social and economic growth

Demand Growth GWh/Y



Demand of annual consumption per capita (kWh/cap)



# REGULATORY FRAMEWORK - NATIONAL PLANS RELATED TO ENERGY AND RENEWABLES

Morocco has adapted its legal framework over recent years in order to achieve its renewable energy goals

Legal framework related to renewable energies

Main laws	Topic	Brief description
Law 13-09	Renewable energy	<ul style="list-style-type: none"> <li>Provides a framework for private operators to develop and sell renewable energy and offers the possibility to export electricity from renewable sources</li> <li>The Decree 2-10-578 regulates its application and the law is amended and completed by the Law 58-15</li> </ul>
Law 47-09	Energy efficiency	<ul style="list-style-type: none"> <li>Sets the National Energy Efficiency Plan, which aims to save 12% in 2020 and 15% in 2030, concentrated on buildings, transport, industry, public lighting and agriculture</li> </ul>
Law 16-09	Creation of ADEREE*	<ul style="list-style-type: none"> <li>Creates ADEREE, extending the mandate of the previous CDER (Centre for the Development of Renewable Energies)</li> </ul>
Law 57-09	Creation of MASEN*	<ul style="list-style-type: none"> <li>Creates MASEN, which is responsible for the implementation of the Moroccan Solar Plan</li> </ul>
Law 48-15	Regulation of electric system	<ul style="list-style-type: none"> <li>Creates the National Authority for Electricity Regulation (ANRE) and strengthens the existing regulatory framework to ensure the functioning of the free market for electricity generated from renewable sources</li> </ul>

Note (\*): MASEN and ADEREE are described in more detail in the Wind and Solar Energy chapters

Source: Ministère de l'Énergie, des Mines, de l'Eau et de l'Environnement, Office National de l'Électricité et de l'Eau Potable (ONEE)

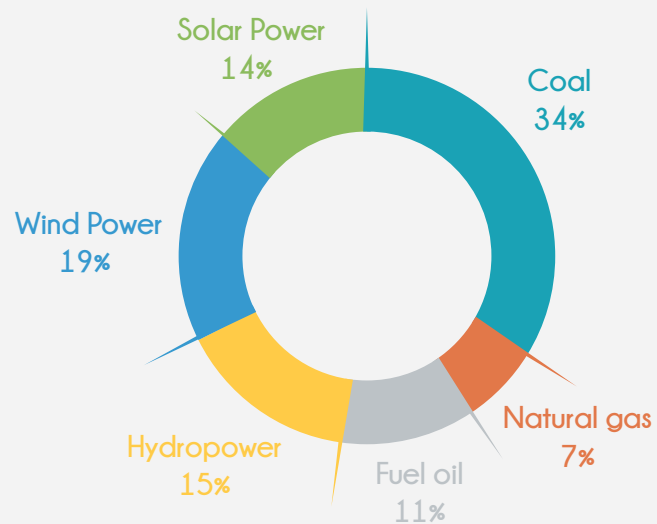
The most recent law approved is Law 48-15, which creates the National Authority for Electricity Regulation



# RENEWABLE ENERGY - TARGET AND CHALLENGES

Renewable Energy to account for 42% of the installed capacity by 2020

Electricity generation capacity planned for 2020  
(Source: ONEE)



## Challenges

- Heavy dependence on imports (more than 97% of Morocco's current energy needs are currently imported);
- Increasing volatility in the World prices of fossil fuels
- Stringent environmental regulations and climate change concerns
- Need to preserve the purchasing power of Moroccans and strengthening the competitiveness of national industrial fabric.

Meeting the growing demand for electricity Double the production by 2020 and quadruple it by 2030



# MAJOR PROJECTS UP TO 2020 - WASTE AND BIOMASS

The Green Morocco Plan to boost agricultural production and new regulations for waste management represent an additional potential of 400 MW by the year 2030.

## Morocco's MSW management

World Bank has allocated \$271.3 million to the Moroccan government to develop a municipal waste management plan (by the year 2020), the plan's details includes:

- Restoring around 80 landfill sites
- Improving trash pickup services
- Increasing recycling by 20% all

Solid waste management is one of the major environmental problems threatening Morocco

Biomass has the potential of 950 MW based on abundant agricultural resources

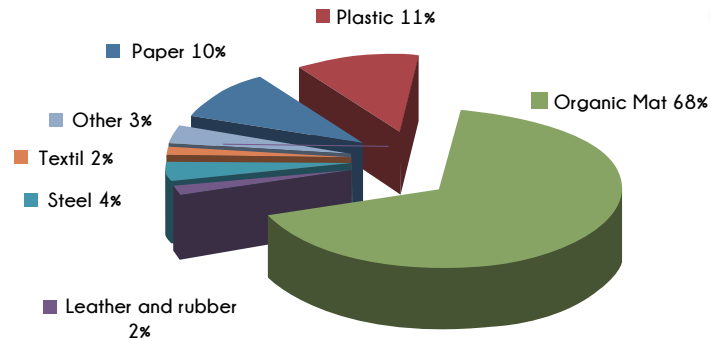
Biomass will be developed with priority in three sectors:

Agriculture, Forestry and waste management

2.6 M  
cattle

16.3M  
sheep

5.3 M  
goats



300  
UNCONTROLLED  
DUMPSITES

3,500  
WASTE-PICKERS

OVER  
5 MILLION TONS OF SOLID  
WASTE IS GENERATED ACROSS THE  
COUNTRY, WITH ANNUAL WASTE  
GENERATION GROWTH RATE OF 3  
PERCENT.





# MAJOR PROJECTS UP TO 2020 — SOLAR, WIND AND HYDROPOWER

## Major projects in Solar

Site/ Plant	Power in MW	Technology	Commissioning date
Ouarzazate	Total 580		
NOORo I	160	CSP	2015
NOORo II	200	CSP	2017/2018
NOORo III	150	CSP (solar tower)	2017/2018
NOORo IV	70	PV	2018
Midelt	Up to 600	CSP/PV	By 2019
Tata	Up to 600	CSP/PV	By 2019
Ain Beni Mathar	420	CSP/ GAS	By 2020
Sebkhate Tah	500	CSP/PV	By 2020
Foum Al Oquad	500	CSP/PV	By 2020
Boujdour	100	CSP/PV	By 2020

## Major Projects in Wind

Site	Power in MW	Commissioning date
Midelt	150	By 2020
Tiskard	300	By 2020
Tanger II	100	By 2020
Jbel Lahdid	200	By 2020
Boujdour	100	By 2020

## Major Projects in Pipeline

Site	Power in MW
Abdelmoumen Pumped storage hydropower plant	2 x 175
El Menzel Hydropower Plant	125
M'dez Hydropower plant	45

Municipal waste management Plan, consist of Restoring 80 landfill sites Until 2020

# KEY ENERGY STAKEHOLDERS



SIE is an investment fund for the execution of the energy mix by 2020 that operates both in investment and in the development of renewable energy projects and energy efficiency



ONEE is responsible for organizing IPP project tenders and has a 25% shareholding in MASEN



The National renewable energy and energy efficiency development agency, is in charge of implementing Morocco's national plan for renewable energy and energy efficiency



MASEN is responsible for implementing the Solar Plan and aims to develop energy and to contribute to the expertise and research in the solar industry through training, capacity building and research and development.



Research institute for new energies that co-ordinates research and development activity in solar energy and assures the financing and control of research projects  
It aims to support and strengthen the national energy strategy.



# KEY ENERGY STAKEHOLDERS — INDUSTRIAL ASSOCIATION



Main representative of the Moroccan private sector against public institutions and institutional actors.



FENELEC, National Federation of Electricity, Electronics and Renewable Energies, with 386 companies, representing more than 95% of product and service activity of electricity and electronic sectors.



The Moroccan Association of Solar and Wind industries (Amisole), which comprises 40 companies, aim to promote the intrests of industrialists and Moroccan professionals in the renewable energy sector



This organization seeks to create new solar energy business and employment opportunities in Morocco



# KEY ENERGY STAKEHOLDERS- WIND ENERGY



Created in 2005, NAREVA Holding is 100% owned by SNI group, with objective of being one of the leading players in the Energy and Environment businesses in Morocco and the surrounding region,



Is a Developer, Owner and Operator of Wind assets in Moroccoa portfolio consisting of 300 MW installed capacity over three wind sites.

The output produced by those wind farms is sold to Moroccan industrial customers



Is an IPP project company owned by NAREVA Holding and GDF Suez. With a total installed capacity of 300 MW. Is the largest wind farm in Africa. The output is sold to ONEE, under a 20 year PPA. Financed 100% by a Moroccan Bank.



REGISTRATION

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# EnergyDays



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For more information & sponsorship

