

# Renewable Energy Database Framework - Investors' Perspective -

Marrakech, 17 May 2012

*« If you cannot measure it, you cannot improve it »*

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# Context of the REDAF Process

## Review of existing studies on RE data collection

A major barrier to renewable energy deployment is **data gaps** for which “further investigation and analysis is needed to **obtain harmonised and consistent data and statistics** for the African continent”. – JRC Study for the European Commission, 2011.

One of the **major technical barriers** to the deployment of renewable energy in Africa is the “**unavailability of accurate and well organised renewable energy data.**” - UNIDO, 2009

Much effort is **needed** to “**compile and publish data on RE** for the benefit of investors, project promoters.” A “**proper mechanism to continuously update such data and publicise it**, has yet to be materialised. There will be a **high demand** for such information from private investors and the availability of information would drastically **reduce project formulation costs and process time.**”, UN ESCAP, 2009

## Context of the REDAF Process

Main conclusion of the studies:

- High demand for high quality **consistent, harmonized & reliable data**
- The data needs to be **compiled, continuously updated** and **published**
- RE data and information is **key to securing investments** in RE projects.  
Lack of such data increases financial risks associated to the project

Goal of the Renewable Energy Database Framework (REDAF)

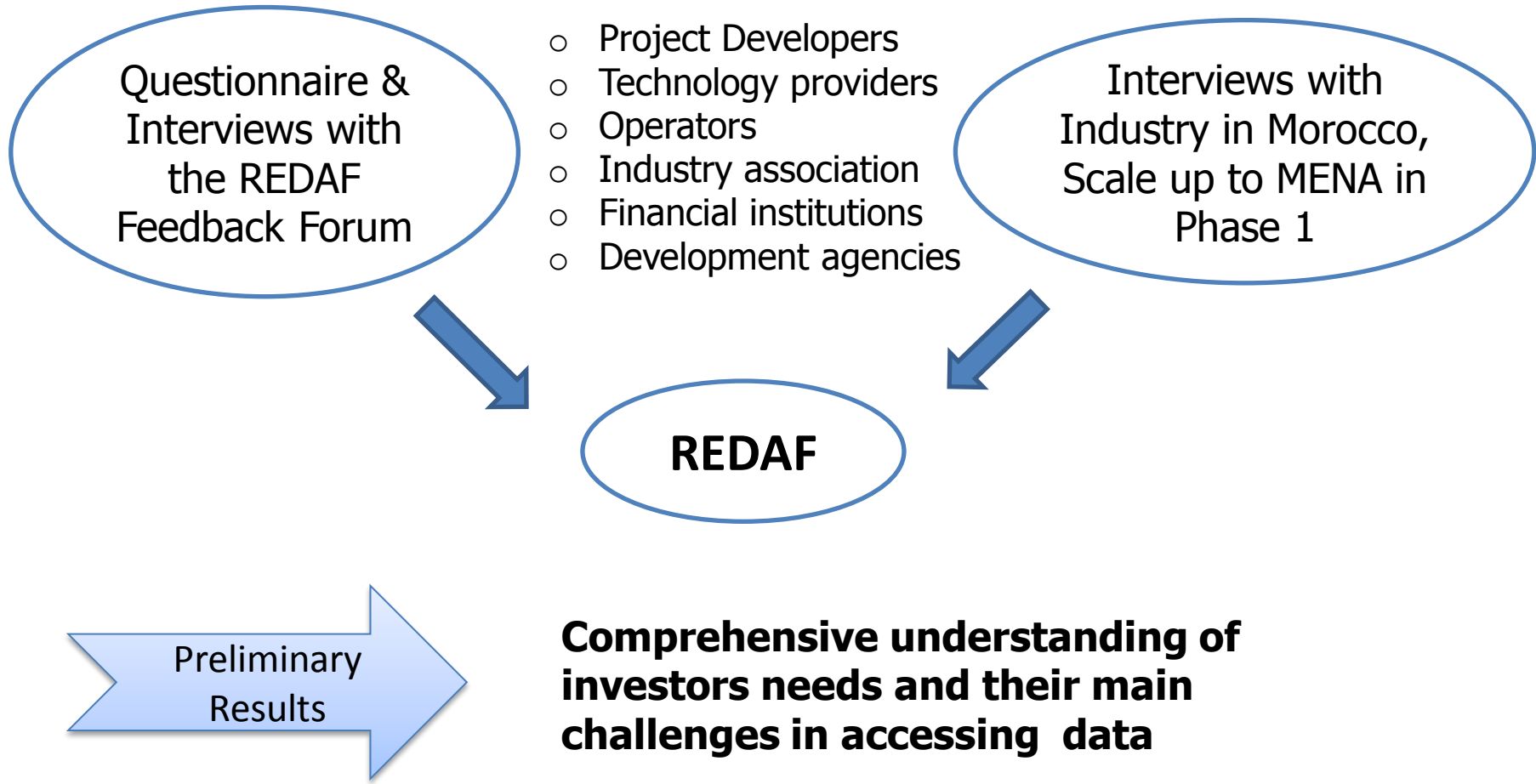
- **Meet this data gap**

But first

- There needs to be **an understanding of the data and information required by industry**



# Context of the REDAF



# Investor's Information Needs: Overview of Energy Sector

**Usual Data Sources for Investors:** National Energy Statistics, IEA, US EIA, GSR...

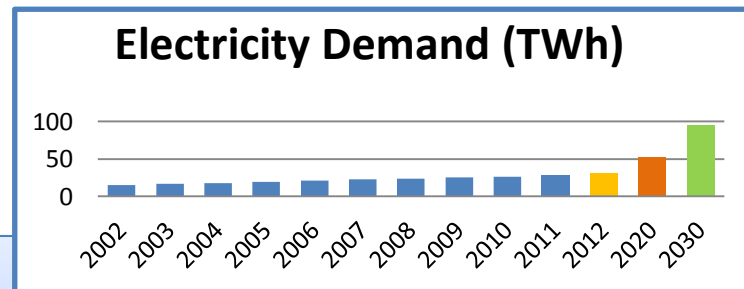
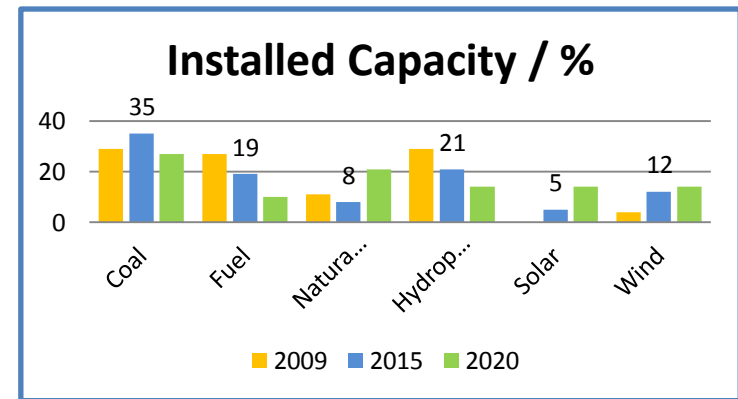
**General Challenge for Investors from the Feedback Forum:** Continuously updated data and information, regional data

## Information needed by Investors:

- Capacity installed by technology
- Annual electricity generation and consumption
- Future projects
- Forecast of energy/electricity demand
- Import and Export
- Main actors

### Morocco:

- Well-established and reported energy balance statistics
- More information at regional level



# Investor's Information Needs: Structure of the Electricity Market

**Challenge for Investors:** Information is difficult to gather for various reasons : no reporting, privacy aspect...

## Information Needs:

- Presence of RE support mechanisms (Feed in tariff etc)
- Wholesale price to electricity generator
- Electricity tariff
- Extent of liberalization of the generation and distribution market
- Transmission regulations
- How is electricity sold?
- Presence of PPA's: duration, main clauses, price

## Morocco:

- Presence of RE support mechanisms
- Price for Purchase of renewable electricity not reported
- Conditions of PPA's

## Investor's Information Needs: Existing and Planned Projects

**Usual Data Sources for Investors:** National Energy Associations, Agencies, Consultant reports ( BNEF...)

**Data Challenge for Investors:** Project information is often aggregated

### Information needed by investors:

- Installed capacity
- Location of Project
- Business models
- Operators, owners and contractors
- Total Investments
- Financing structure
- Commissioning date

#### Morocco:

- Information Readily available
- No central reporting

#### Example of such data from Wind project in Morocco

<b>Project</b>	Tanger
<b>Commissioning date</b>	2009
<b>Capacity</b>	140 MW
<b>Electricity Generation</b>	526 GWh/year
<b>Cost</b>	250 million euros
<b>Funding structure</b>	EIB: EUR 80 million (Loan) KfW: EUR 50 million (Loan) Spanish Credit Institute (ICO) : EUR 100 million (Loan) ONE: EUR 20 million
<b>Turbines</b>	185 Gamesa 850 kW

# Investor's Information Needs: Access to Finance

**Usual Data Sources for Investors:** Local and International Consultants

**Challenge for Investors:** scattered data and information, no central source for information

## Information needed :

- Credit worthiness of PPA provider
- Banks Supporting RE
- FDI inflows in the country
- Access to finance in the country
- Law about repatriation of capital/profit
- Non-tax incentives

## Morocco:

- Domestic credit lines has been opened
- Creation of the Moroccan Committee for Financing Renewable Energies and Technologies (COMAFTEP)
- SIE
- No central source

	FH2/SIE/ONE	EIB	CTF		Private Investors	Commercial Banks	Total
<b>Total Investments</b>	162.6	173.01	150		209.58	1017.68	2166.43
<b>Equity participation in PPP's</b>	162.6				209.58		372.18
<b>Debt Participation in PPP's</b>			55.73			753.09	1009.53
<b>Supporting Infrastructure</b>		173.01	94.27			264.59	784.73



## Investor's Information Needs: **Grid Information**

**Usual Sources:** Transmission/ Grid Operator, Regulator

**Challenge:** Reporting of more detailed information

### **Information needed:**

- Presence of low voltage and high voltage lines
- Distance of Transmission line from the project area
- Legal information about the grid connection
- Grid capacity limits and future expansion
- A detailed grid map
- Transmission cost

### **Morocco:**

- More reporting and publishing
- More details on transmission cost
- Regulation for grid access established and implemented

# Investor's Information Needs

## True Potential of Renewable Energy Resources

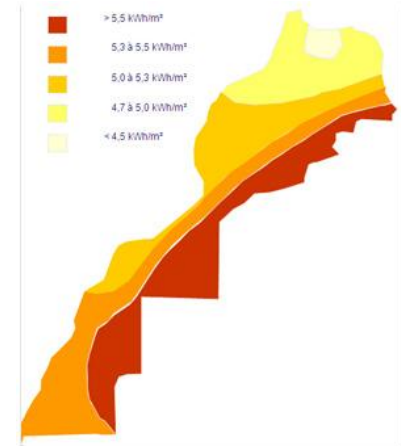
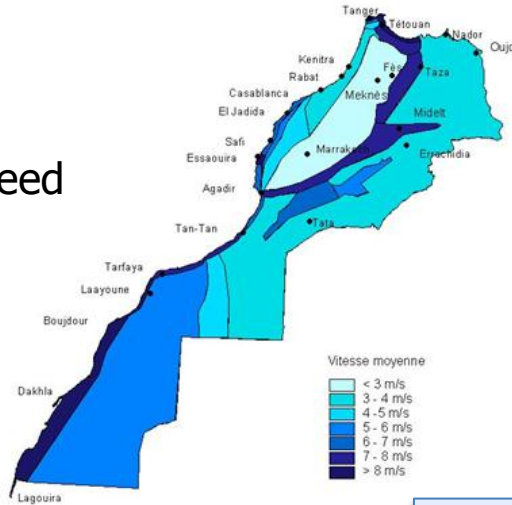
**Usual Data Sources for Investors:** Government Wind and Solar Resource Maps

### Challenge:

- More specific detail (Wind Speed or Direct Solar Irradiation)

### Additional information:

- Site Specific information such as environmental and geographical limits (protected natural park)
- Grid availability/ distance and type of transmission lines
- Wind speeds at heights above 50m



### Morocco: Example of Wind Resources Necessary

- Wind power density
- Wind speed distribution by hour and by month
- Potential annual electricity generation
- Grid information near the site

# Investor's Information Needs: Taxation and Regulatory Information

**Challenge:** Information often scattered

## Information needed:

- Taxation policy
- Possible tax holidays
- Environmental standards
- Land Tenure
- Permitting process
- Grants

## Morocco: No focal point for information

- VAT exemption possible for project > 200 million dhs
- VAT reduction for Solar water heaters (20 % to 14 %)
- Exemption on VAT for RE equipment used in agriculture
- Specific delimitation zones for wind projects

## Customs Duties in Morocco

Most products imported are subject to import duties , **the rates** of which vary between **2.5 % and 10%** for equipments, materials, spare parts and accessories. **Some materials and products are exempted** under the investment charter; imported under customs economic systems and **those using renewable energies**.

# Investor's Information Needs: Industrial Capabilities

**Usual Sources:** Local consultants

**Challenge:** Need for consolidation of the data and information for the supply chain

**Information needed:**

- Available infrastructure such as transportation
- Existence of local standards for manufacturing
- Labor market information and training programs
- Overview of technology being used in the country
- Current status and developments at each step of the supply chain

**MoU between Masen and Soitec and Schneider Electric**

- Industrial Integration – through development of a local supply chain for CPV system components, including trackers and opportunity analysis on setting up a CPV modules assembling factory in Morocco

# REDAF: The Missing Link

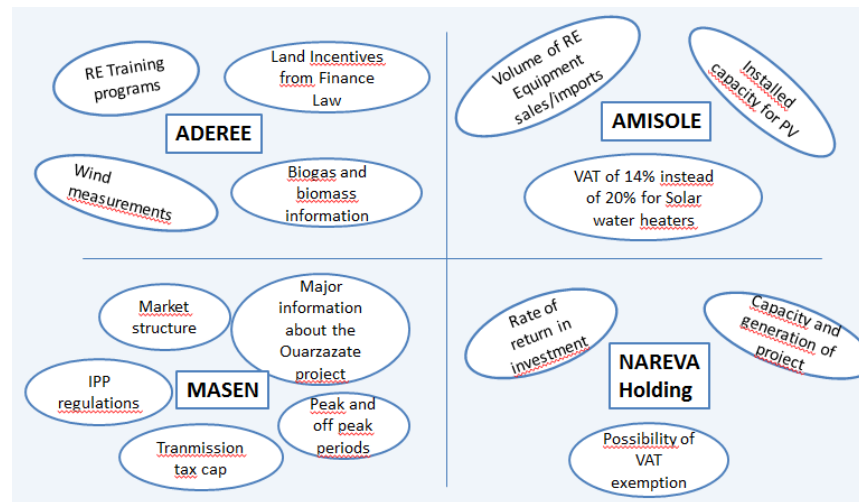
## Investor's Data and Information needs

### Royaume du Maroc

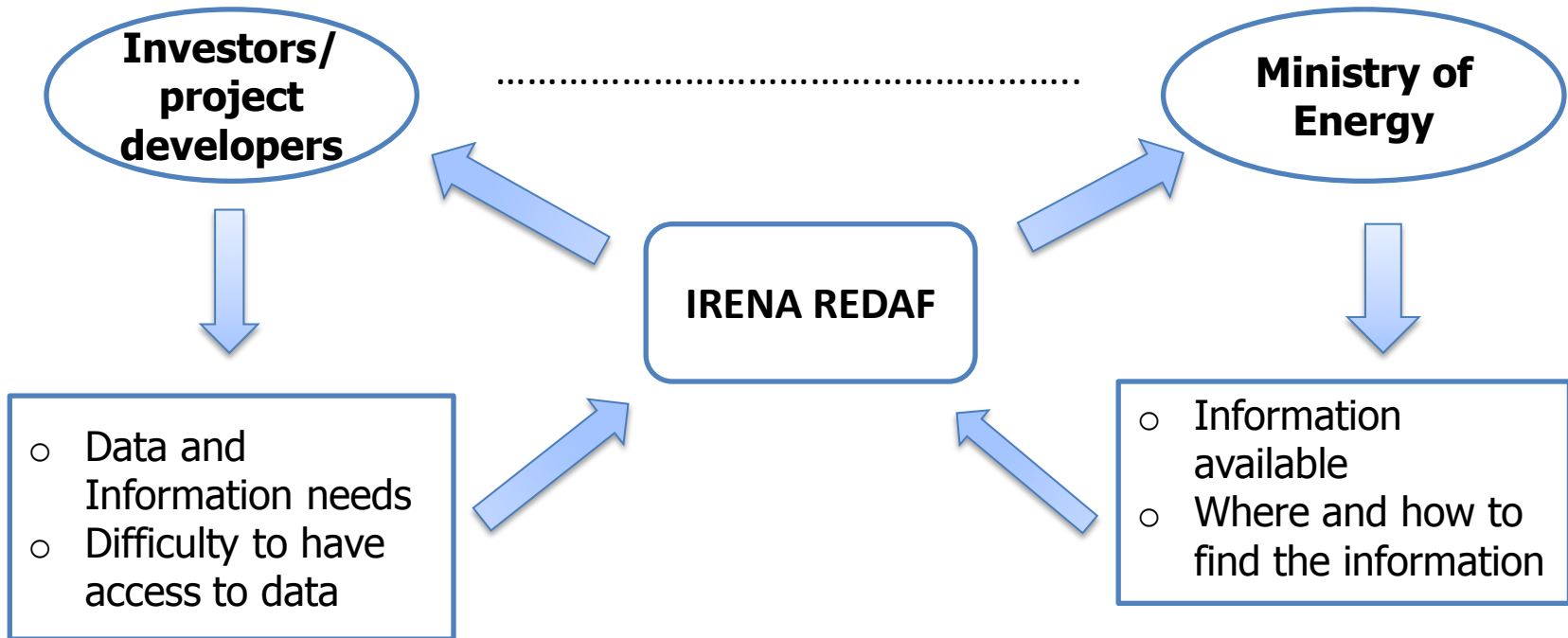
Ministère de l'Énergie, des Mines, de l'Eau et de l'Environnement  
Département de l'Énergie et des Mines



- Ministry of Industry
- Ministry of Finance
- Customs Office



# The REDAF process



# Concluding Remarks

- Fundamental to ensure a **flow of data** between the **collecting bodies** and the **private sector**
- Important to ensure a **constant feedback** between the **two parties**
- **Bring together** other **actors** collecting data at a **micro level**

The **IRENA REDAF** project can act as that **missing link** in matching data **needs** with data **availability**

# Concluding Remarks

**Thank-you for your attention!**

**Lily Riahi, Policy Advisor, REN21**

**[Lily.Riahi@ren21.net](mailto:Lily.Riahi@ren21.net)**

**[www.ren21.net](http://www.ren21.net)**