Tunisia Renewable energy Framework

An IPP standpoint

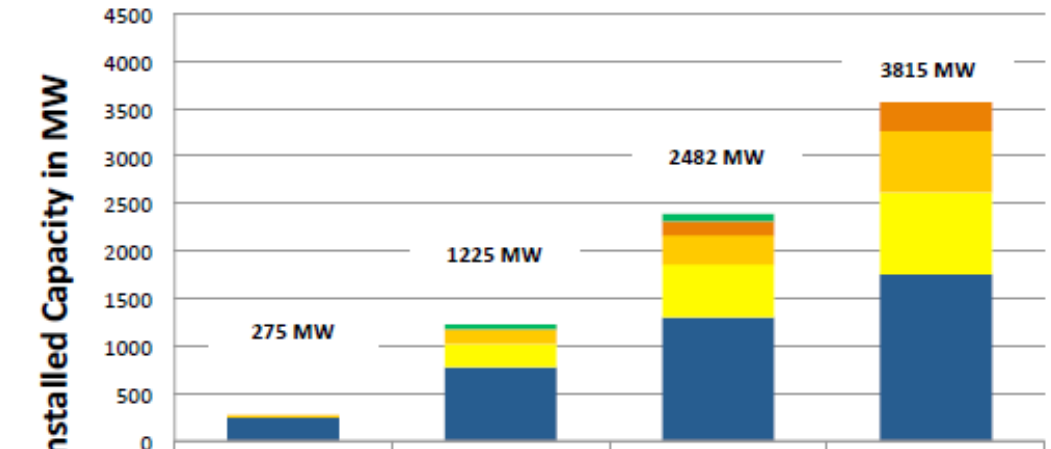
Green Power

RES Sector in Tunisia
Overview

Key strenghts

- **Long term strategy**
  - 30% RES share target at 2030 in the energy mix 30%
  - Key regulation in place;
- **Attractive demand growth projections**
  - Electricity demand growth rate p.a. 2015-2020 (%);
- **Good RES endowment**
  - Average solar irradiance 1905 kWh/m2 per year (1500 EOH)
  - Wind speed from 4 to 8 m/s

RES installed capacity and targets (ANME 2016, MW)



	2015	2020	2025	2030
Biomass	0	45	80	100
CSP	0	0	150	450
Solar PV Roof	30	155	302	642
Solar PV Farm	0	250	555	868
Wind	245	775	1305	1755

Despite the sector appeal, capacity installed has been stable in recent years

Do you when RES regulation was introduced in Tunisia?

- 1995
- 2008
- 2010
- 2015

RES policy in Tunisia

A RES Pioneer?

1995

Decree 95/744
Tax exemptions for RE equipment import

2004

Law 2004-72 on EE:
Creation of ANME (Agence Nationale pour la Maîtrise de l'Energie)

2005

Law no. 2005-82
RES Investment subsidies Introduced

Prosol programme (residential)
for solar water heaters

2008

Tunisia's 2008-2011 EE Programme
targets RES at 4% of primary energy supply and 10% of total electricity installed capacity by 2011

2009

Decree 2009/362 on RES and EE
Refunds for small scale project

Law 2009-7 on RES and EE: RES self-consumption regime introduced

2010

Tunisian Solar Plan 2010 - 2016, promoting RES through a set of 40 projects and patnerships. Targets RES a share of 4.3% by 2014.

Prosol Elec
For residential PV

2011

Decree on connection and access of RES to the national grid

2015

Loi 2015-12
Law seeks to increasing the contribution of RES to to 30% (equivalent to 3,800 MW) of total electricity production by 2030.

2016

Tunisia 2020

RES programme: aims to develop 1,000 MW of RES capacity over the 2017-2020 period through a set of concrete measures, (650 MW solar capacity and 350 MW wind)

In a second stage (2021-2025), further 1,250 MW capacity.

Inadequate and Inconsisent/Intermittent Policies hindered utility scale RES development despite early onset

Source recree http://www.rcreee.org/news/tunisia-announces-renewable-energy-action-plan-2030
https://www.iea.org/policiesandmeasures/renewableenergy/?country=Tunisia

Tunisia 2020 RES Programme

Opportunities/Barrier: an IPP standpoint

	Description	Target (2017-2020)	Timeline	Barrier to development
Small Scale Projects (Authorization)	○ Capacity caps per technology/plant: 10MW PV – 30MW Wind	120 MW PV 90* MW Wind	**Nov 2017** (2 x 30MW Wind + 6 x 10MW PV) **Aug 2018** (2 x 30MW Wind)	○ Capacity caps and limitations to n. of projects/applicant reduce rooms for economy of scale and local integration; ○ PPA not bankable
Large Scale Projects (Concession)	○ Regulatory framework still under definition; ○ Not clear if sites will be given by MoE or proposed by investors	2x50 MW PV 100MW Wind	Q4-2017	○ Lack of visibility discourage investors' long term ambitions in the country; ○ PPA not published, bankability concerns ○ If sites proposed by MoE, lower competitiveness expected
Self Consumption	○ Right to transport the electricity through the national grid to the consumption spot paying wheeling fee to STEG ○ Up to 30% of the electricity produced can be sold to STEG	~ 200 MW	Regulatory Framework already in place	○ Constraints on the ownership of the power plant reduce room for IPP to enter the market; ○ Limited interest of potential producers to invest in first place
STEG**	○ STEG will develop this capacity as IPP	~ 300 MW PV ~ 80 MW Wind	Not yet announced	○ Not clear if some sort of participation to the capital allowed for IPP

* Wind capacity target already overshoot, reshuffles of capacity slots for next opportunities expected. ** STEG Presentation May 2017

Tunisia Renewable energy sector

How to improve investors confidence

Short term measures

Authorization Regime

- ✓ Implement necessary changes to make PPA bancable
- ✓ Remove Capacity caps and limit to n. of projects/applicant

Concession Regime

- ✓ Provide visibility on concession call to encourage investors' long term committment in the country;
- ✓ Ensure bancability of PPA;
- ✓ Allow investors to propose sites;

Autoconsumption Regime

- ✓ Remove legal constraints on IPP partecipation allowing vehicles to own the power plant;

Long term benefits

- ✓ Economies of scale and industrial integration alike initiatives;
- ✓ Lower PPA contract tariffs;
- ✓ Increased competitiveness of the production segment with ultimate benefits on retail prices;
- ✓ Knowledge transfer and Creation of a specialised RES value chain with positive spillovers on employment level;