

Expert Group Meeting on Promoting Market-Driven Access to Sustainable Modern Energy Services in the Arab Rural Regions

Financial mechanisms: Which instruments?

ESCWA, Beirut, 18 & 19 April 2016

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Financing sources

Some examples



■ Development Banks and international financing institutions

- ✦ World Bank and Société Financière Internationale
- ✦ IEB, Investment European Bank
- ✦ EBRD, European Bank for Reconstruction and Development
- ✦ AfDB, African Development Bank,
- ✦ KfW, German Bank
- ✦ FDA, French Development Agency, etc.

For Ex, in 2010, 13 development banks supported RE projects with a total investment of 13,5 billions US\$.

- ✓ IEB : 5,4 billion US\$,
- ✓ KfW : 1,5 billion US\$.



Financing sources

Some examples

■ **National banking sector**

- ✦ Interest rate is always high
- ✦ Lack of liquidity in some countries from the region
- ✦ Lack of knowledge in RE projects and programs

■ **Private investments**

- ✦ Financing equity
- ✦ Capital-risk
- ✦ Private fund rising.

■ **Climate Finance**

- ✦ CTF, Clean Technology Fund (WB)
- ✦ Carbon market mechanisms (ended in 2012) and NMM
- ✦ Green Fund: 100 billion per year till 2020
- ✦ **Nationally Appropriate Mitigation Action (NAMA)**



Typology of RE investments VS project category



■ Large scale Projects

- ✦ Concentrated investments
- ✦ Heavy investments
- ✦ Limited number of investors
- ✦ Transaction cost of financing is low
- ✦ Example : large scale power generation plants from RE.

■ Distributed Projects

- ✦ Distributed market
- ✦ Light investment
- ✦ Large target
- ✦ Transaction cost of financing is always high
- ✦ Example : SWH, rooftop PV, PV rural



Typology RE investments VS selected technology

■ On grid power generation

- ✦ RE farms (MV et HV)
- ✦ PV rooftop (LV)

■ Decentralized generation

- ✦ Rural electrification
- ✦ Water pumping from PV and wind

■ Heat Production

- ✦ SWH
- ✦ Biogas
- ✦ Biofuels, etc.



Appropriate financing mechanisms

Financial instruments



RE experiences in different countries from the region are usually using the main following instruments :

1. Feed in tariff and/or net metering
- 2. Direct and indirect taxes incentives**
- 3. Investment cost subsidies**
- 4. Credit access facilitation systems (guarantee, interest rate subsidy,...)**
- 5. Public Private Partnership (PPP)**
- 6. Innovative financial mechanisms**

Appropriate financing mechanisms

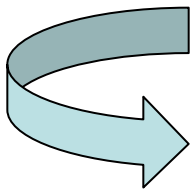
Measures typology

On grid RE Electricity generation MV & HV	• Public Financing • IPP • Feed in tariff • Facilitation of credit access systems
PV rooftop	• Net-metering • Taxes incentives (direct and indirect) • Facilitation of credit access systems • Innovative financial mechanisms
Decentralized RE electrification	• Taxes incentives • Investment subsidies • Micro credits
Heat generation	• Taxes incentives (direct and indirect) • Investment subsidies • Facilitation of credit access systems • Innovative financial mechanisms

RE in Arab rural areas

Limited experiences in the region

Country	Achievements
Algeria	Program of electrification by PV systems managed by Sonelgaz, financed by the Government, for 1000 households belonging to 4 wilayas from the south, (Tamanrasset, Adrar, Illizi et Tindouf).
Mauritania	More than 10000 households and water pumping points are electrified by PV systems.
Morocco	More than 13 MW of PV installed in the frame of PERG programme for rural electrification.
Tunisia	13000 household electrified by PV systems and more than 100 PV water pumping systems.



Development of technologies linked to rural electrification programs (*Tunisia, national 98% and rural 95%*)
Programs already implemented are unsustainable



Appropriate financing approach

Sustain the investment subsidies: FNME Tunisia

- FNME created in 2005 by a law n° 2005-106 on 19 December 2005
- Alimented by taxes from new cars registration, air conditioning systems and incandescent lamps
- Used to support investing and to give subsidies for selected measures of EE and RE
- Managed by ANME
- Resources : around 30 MDT per year
- Contribution: 20 MDT per year

Appropriate financing mechanisms

Investment subsidies: FNME Tunisia

Tunisia: National Fund for Energy Conservation

Measures	Maximum
✓ Electrification and water pumping by using PV and wind in agriculture farm and rural areas	✓ 40% with a max of 20 000 DT
✓ Power generation from biogas in rural areas	✓ 40% with a max of 100 000 DT
✓ Roof top power generation from on grid PV in LV residential sector	✓ 30% with a max of 1 450 DT / kWp and 15 000 DT/household
✓ Individual SWH	- 200 DT for SWH with collector from 1 to 3 m². - 400 DT for SWH with collector from 3 to 7 m².
✓ Collective SWH	- Subsidy of 30% with a max of 150 DT/m² of collector - 10% of extra subsidy financed by Italian cooperation (MEDREC) - 10% for interest rate subsidy (2 pts) and subsidy of maintenance fees over 4 years.

Appropriate financing mechanisms

Facilitate credit access: experiences from the region

Country	Bonification of interest rate	Guarantee fund	Dedicated credit line
Algeria	Possible bonification of interest rate by FNME	Possible guarantee of credits by FNME	
Egypt	Reduction of interest rate for credits allocated to hotels for the installation of SWH (ongoing)		
Morocco	Commercial credit with negotiated interest rate for financing installation of SWH (ongoing).	Fonds de Garantie « FOGEEER » for guarantee of leasing companies	
Tunisia	Subsidy of interest rate of credit for collective SWH installation (2 points). Interest rate subsidy of AFD credit line (subsidy EU).	Guarantee fund for Energy saving companies (ESCO) Possible guarantee from ETF	Credit line AFD of 40 M€ Credit line from the WB of 50 M\$



Integrated financing mechanisms

Key factors: Lesson learnt

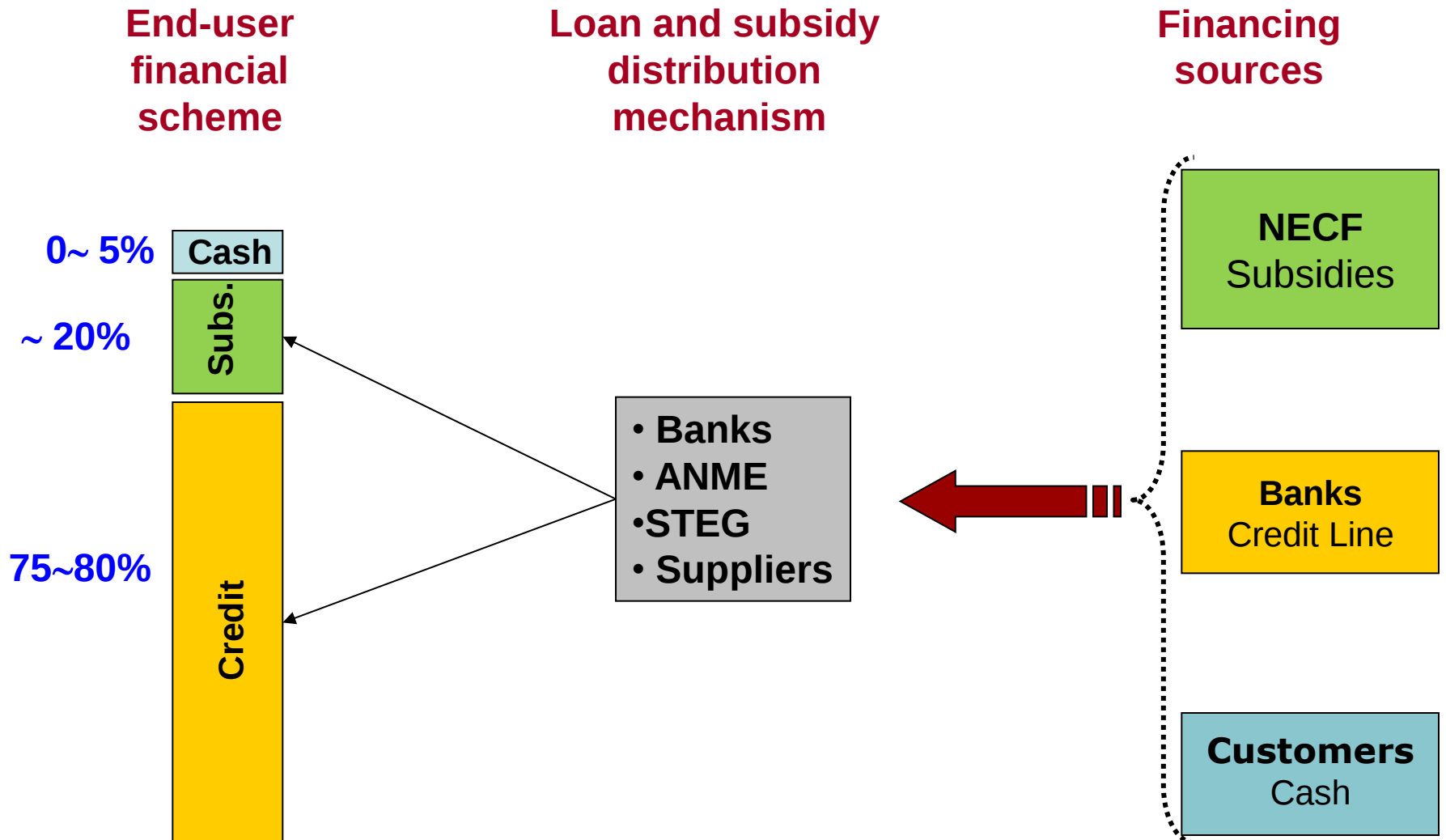


Need for **multi-stakeholder's** approach aiming to:

- Credit mobilization and management
- Transaction costs:
 - Preparation activities
 - implementation
- Credit distributing and recovering:
 - In an easy way
 - Risk management
- Awareness and communication
- Monitoring and evaluation
- Reporting

PROSOL program

Public-private financial mechanism





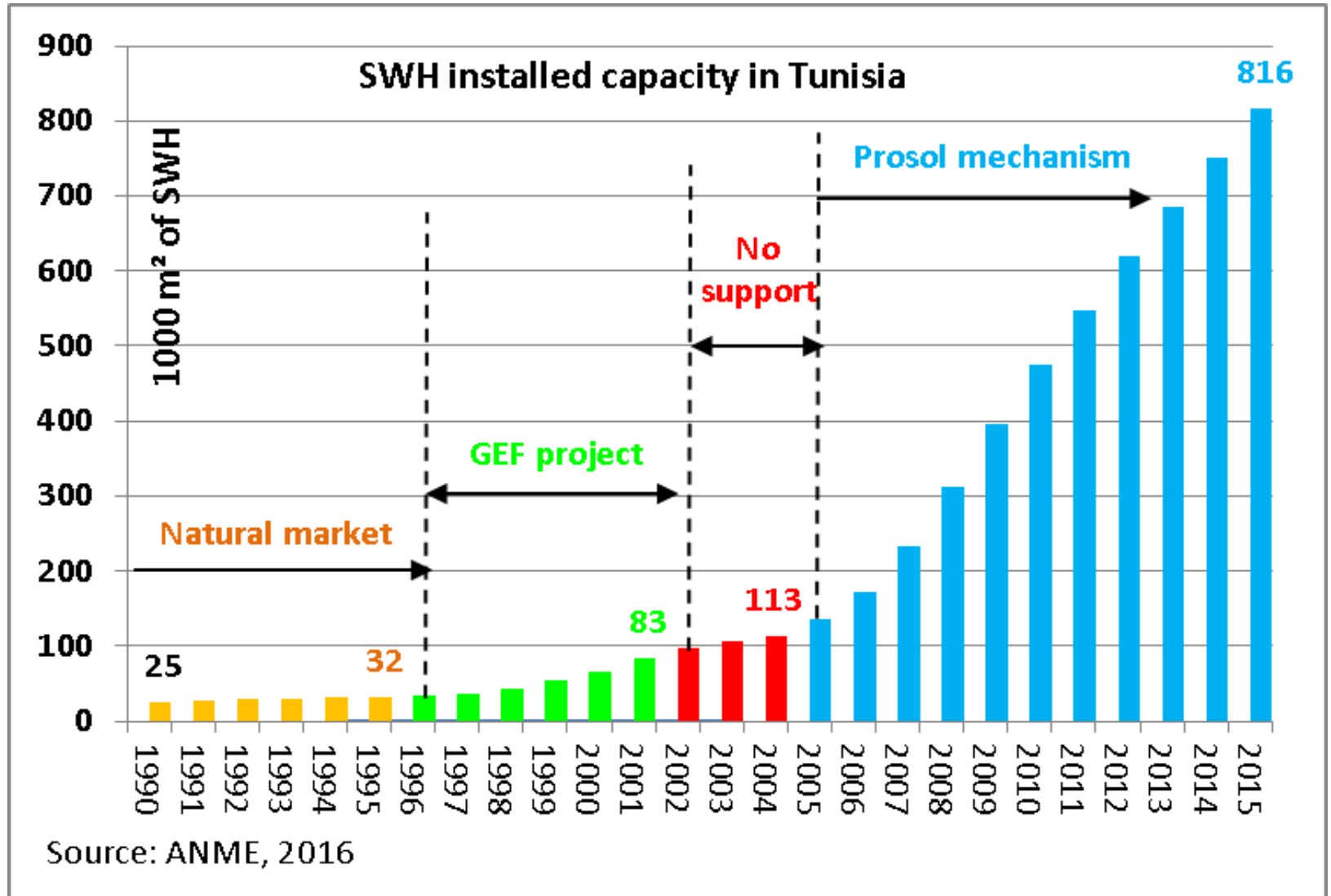
PROSOL SWH : What is it?



Example : Tunisian SWH program, PROSOL

- Subsidy from FNME aiming to improve profitability for the end user
- Credit over 5 years distributed by STEG and reversed on the electricity (STEG)
- Credit line from private bank allocated to the utility (STEG) to finance the program
- ❖ A public system of quality inspection managed by ANME (accreditation of suppliers, products and installers)
- ❖ Information management system(IMS)

PROSOL- What it does





PROSOL Elec (1) : What is it?



Example : Tunisian rooftop program, PROSOL elec

- Net-metering
- **Subsidy** from FNME: **30%** of the Investment– Max of **1 450 DT** per kWc and **15 000 DT** per household
- Extra subsidy of 10% of the investment cost given by MEDREC (Italian cooperation) (starting phase)
- Contribution of STEG by offering the inverter (starting phase)
- **Credit** over a duration of **5 years with 0% interest rate**, from Ettijari Bank et recovered on the electricity **STEG bills**
- Credit line from private bank

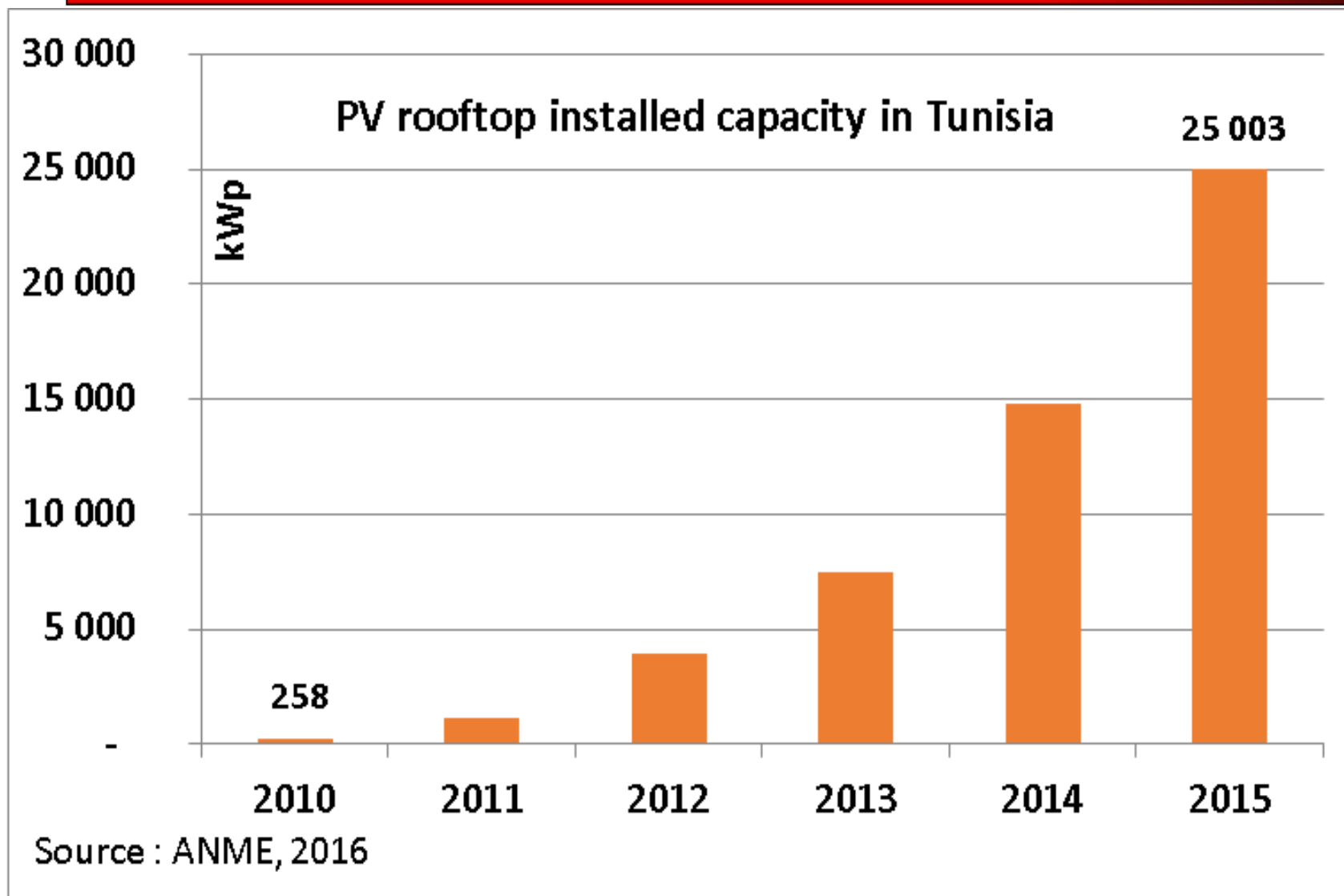


PROSOL Elec (2): What is it?



- ❖ **Subsidy** from FNME: **30%** of the Investment– Max of **1 450 DT** per kWc and **15 000 DT** per household ;
- ❖ **Credit** over a duration of **7 years**, from Ettijari Bank et recovered on the electricity **STEG bills**;
- ❖ **Net-Metering** for on grid rooftop installation;
- ❖ Credit line from commercial bank managed by the utility.
- ❖ A public system of quality inspection managed by ANME (accreditation of suppliers, products and installers)
- ❖ Information management system(IMS)

PROSOL Elec- What it does?



Perspectives of ETF in driving the national energy transition

- Investment subsidies
 - Investment immaterial
 - Capital cost Investment for EE & RE
- Interest rate subsidies of commercial credit through local banks
- Credit line: possible role of umbrella for certain international financing
- Guarantee Fund
- Investment Fund



Conclusion

- 1. In general, no big problem for financing sources identification and fund rising**
- 2. Constraints are in the feasibility**
 - ❖ Implementation local capacities (learning by doing)
 - ❖ Regulation
 - ❖ Profitability and impact assessment (social and environmental)
 - ❖ Risks (technological, economical)
- 3. Need to articulate financing sources with incentives mechanisms**
 - ❖ Integrated system
 - ❖ Actors mobilization (involvement)
- 4. Need for integrated mechanisms aiming to develop local energy services** (installation and maintenance)
5. Learning by doing



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Thank you for your attention