



الوكالة الوطنية للتحكم في الطاقة  
Agence Nationale pour la Maîtrise de l'Energie  
National Agency for Energy Conservation

# Tunisia renewable Energy and Energy efficiency NAMA in the building sector

CCAP Climate Finance Forum

2016

Bonn, Germany

**ECOFYS**



sustainable energy for everyone

**ALCOR**

Développeur d'avenir durable



# Project point of contact

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# Background

- 60% of emissions in Tunisia attributed to energy (2010), which is still for the most part (85%) generated through fossil fuels
- Policy of fighting climate change particularly emphasized in the energy sector
- Final energy consumption from the building sector expected to double between 2010 (22%) and 2030
- Building will contribute to overall increase of the final energy consumption in Tunisia
- the building sector at the core of Tunisian government national strategy against climate change;
- Tunisian INDC provides for a GHG reduction from buildings of more than 6 MtCO<sub>2</sub>e, more than a third of the energy sector mitigation target

# NAMA Goals

The renewable energy and energy efficiency NAMA will :

- Address the rising energy use in existing and new buildings while
- Support use of solar energy
- Encourage development of the energy efficiency sector (building insulation)
- Reduce energy consumption and associated GHGs
- Deliver sustainable development co-benefits
- Contribute to achievement of INDC

Specifically, it will:

- Reduce energy intensity by 41% by 2030 (compared to 2010)
- Reduce building sector GHGs by >6 MtCO<sub>2</sub>e, 1/3 of energy sector target

# Barriers to mitigation

Barriers	Activity
<p><b><i>Higher investment risks in Tunisia :</i></b>            Access international finance is still very expensive            Repeated lowering of the Tunisian sovereign rating            Exchange rate risk</p>	<p>Mitigate financing risks through NAMA            Include international donors in the financial mechanisms            Reform the existing financial mechanisms</p>
Lack of funds of Tunisian commercial banks	<p>Include international donors in the financial mechanisms            Reform the existing financial mechanisms</p>
National utility STEG is facing increasing pressure acting as debt guarantor (unpaid bills, increasing fees etc.)	Set up a guarantee mechanism
Difficulty to develop new mechanisms: PROMO-ISOL has not been launched yet and huge investments are needed	Create a new financial mechanism for thermal performance programme
Lack of new technologies evaluation and control	Create a laboratory for testing PV panels
Difficulty to promote access of collective buildings and social housing to SWH and Solar PV	Study to identify success conditions
Lack of systematisation/computerisation of the application process	Establish an electronic information and management system
Lack of technical expertise to install, maintain and monitor (control) energy conservation technologies, causing large delays in the whole process	Organise capacity-building actions for installors
Lack of awareness and information on the technologies available on the market and on financing options available	Design and implement a communication plan

## Elements of the Proposal

- Purpose the NAMA :
  - To scale up existing PROSOL (SWH) and PROSOL ELEC (PV) programmes -> Changing significantly the size of current programmes : 120,000 m<sup>2</sup> of SWH and 40 MW for rooftop PV per year by 2020, against respectively 60,000 m<sup>2</sup> of SWH and 5 MW of rooftop PV in 2014
  - Launching a new market of thermal insulation: about 13000 dwellings per year over the period 2016-2020
  - to reduce the demand for fossil fuel-based energy in
  - to increase the uptake of energy efficiency and renewable energy measures
  - to achieve a transformation of the entire sector
- The Tunisian Energy Conservation Agency (ANME) is the key proponent of the NAMA and responsible for its implementation

# Elements of the Proposal

<b>Financial Component</b>	<b>NAMA risk coverage scheme</b>	<ul style="list-style-type: none"><li>– Cover exchange rate and country risk</li></ul>
	<b>NAMA loan scheme</b>	<ul style="list-style-type: none"><li>– Soft credit line</li><li>– Up scaling and extension of existing</li><li>– Phasing out of existing grant</li></ul>
<b>Technical Component</b>	<b>Training and capacity building</b>	<ul style="list-style-type: none"><li>– Suppliers &amp; Engineering and construction</li><li>– Increase technical capacities</li></ul>
	<b>Review &amp; Extension</b>	<ul style="list-style-type: none"><li>– Review regulatory processes</li><li>– Up scaling and extension (other user groups)</li><li>– Reform building regulations and requirements</li><li>– MRV system</li></ul>
<b>Outreach Component</b>	<b>Awareness raising and communication</b>	<ul style="list-style-type: none"><li>– Suppliers &amp; Engineering and construction</li><li>– Increase technical capacities</li><li>– Communication campaign</li></ul>

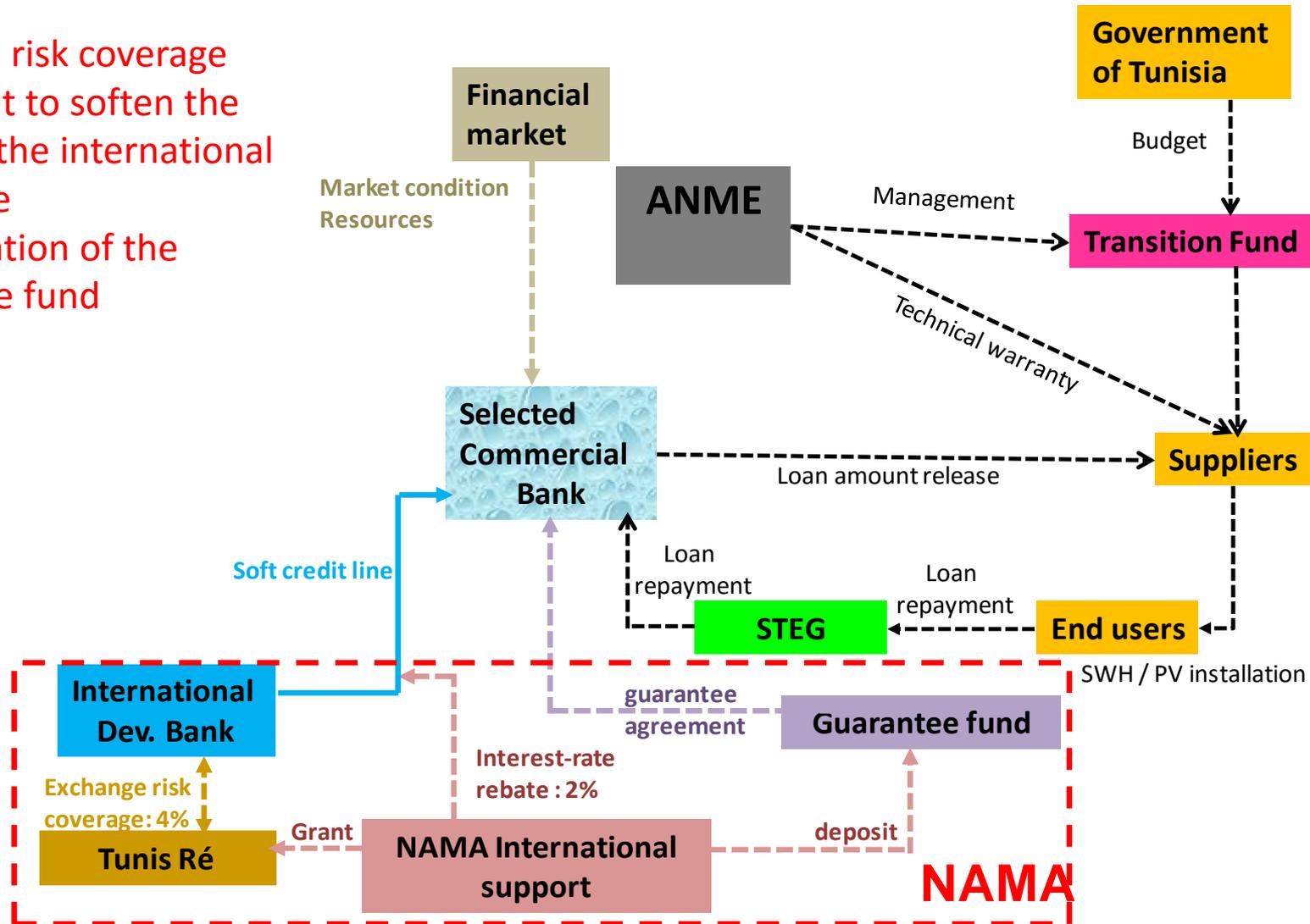
## Financial support mechanism : solar programmes

- Up-scale and reform the existing financial mechanism
- Features of revamped financial mechanism:
  - gradual phase out of subsidy + a bank loan scheme to end-consumers at attractive rates.
  - Loan scheme administered by a commercial bank;
  - Allocation of a non-sovereign credit line to local banks
  - Softening of loan terms to end-users
  - Collection of loan repayments through STEG electricity bill (act as debt enforcer)
  - substituting part of the borrower risk by granting guarantees ensuring repayment of part of the loan upon a default event
- **Interest rate for end-user = Resource cost (in EUR/\$) + Tunis RE fees to cover exchange risk (4%) + local bank margin (fixed over the loan period, capped off at 3%) – Interest rate subsidy (2%) – subsidy for exchange risk coverage (4%)**

# Financial support mechanism

## NAMA contribution:

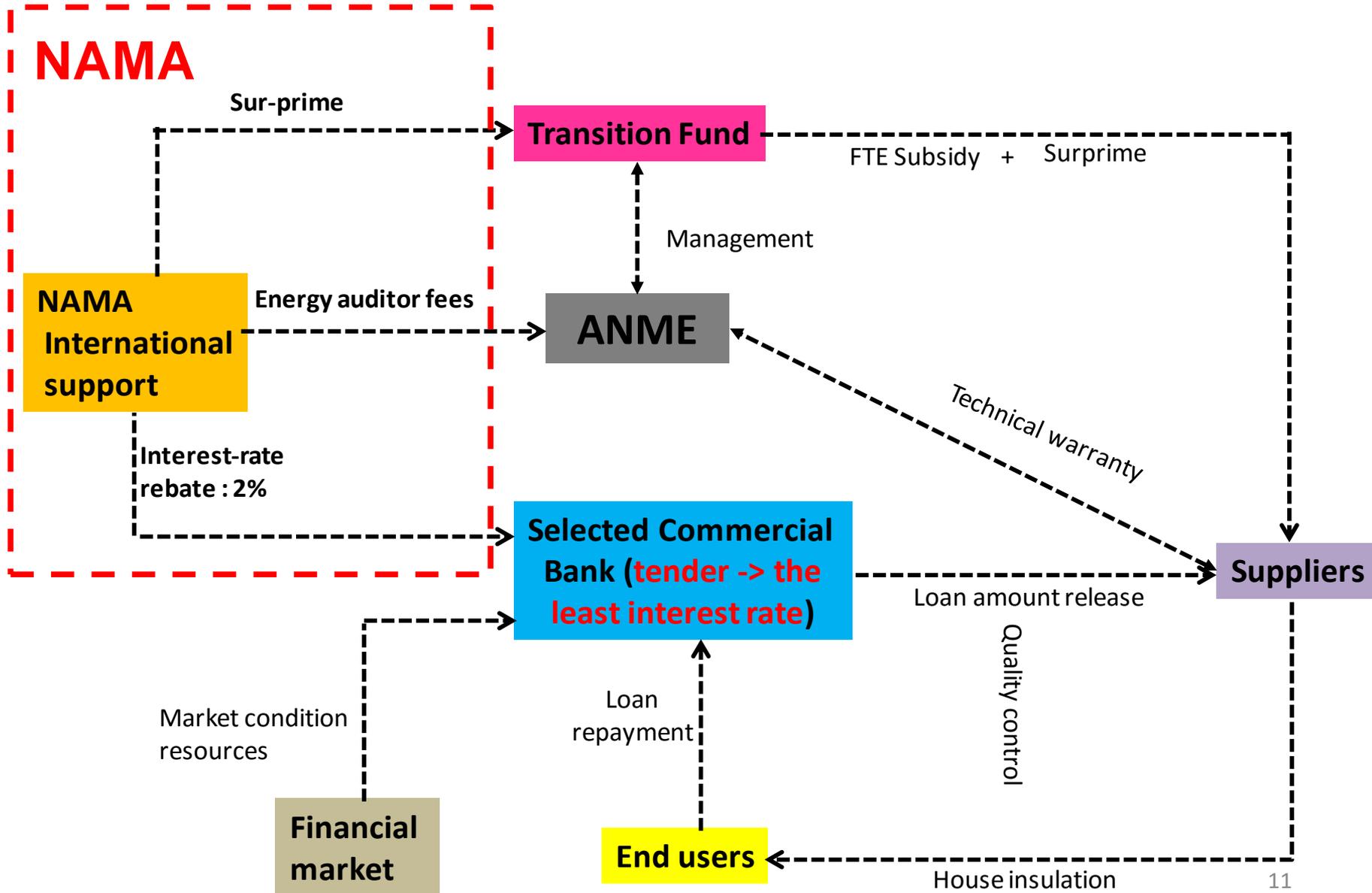
- ✓ Non-sovereign soft credit line
- ✓ Exchange risk coverage
- ✓ cash grant to soften the terms of the international credit line
- ✓ Capitalization of the guarantee fund



## Financial support mechanism : insulation programme

- Creation of a new financial mechanism for the PROMO-ISOL
- Provision of financial incentives and support to cover the technology costs
- Features of financial mechanism:
  - national subsidy through the FTE for roof insulation
  - international investment premium (sur-prime) to further insulate walls and windows
  - loan provided by selected local bank at a concessional interest rate
  - Subsidies and loans disbursed after onsite verification of installation
  - Premium and interest rate rebate to be phased out when the market mature
  - subsidy support needed at least until 2020
  - Consultation and quality control by energy counsellor
- Contribution of the NAMA :
  - Provision of investment premium (sur-prime)
  - Granting of an interest rate subsidy
  - Cover the consultation fees of the energy auditor

# Financial support mechanism : insulation programme



## Expected outcomes (2016-2030)

- GHG emission reduction : 4,780, 936 tCO<sub>2</sub>e
- Job creation :16104
- Reduced energy costs for end-users : 6,584,640,915 TND ≈ 300,000,000 EUR
- Reduced energy costs for the State : 6,389,442,946 TND ≈ 290,000,000 EUR
- Avoided subsidies for the State: 7,046,321,716 TND ≈ 320,000,000 EUR
- Households having access to NAMA technologies : 667 477

## Project/program Financing

Instruments	Type	Expected amounts (2016-2020)
<b>Financial component</b>		
<b>Reform and upscale financial scheme of PROSOL (SWH) and PROSOL ELEC (PV)</b>		
Technical assistance in negotiations	International Support Requested	€ 40,000
FTE investment Subsidy	Domestic Pubic Sector Contribution	€ 7 920 000 (SWH) € 52 806 229 (PV)
Credit line for commercial bank	Development banks	€ 113 575 000 (SWH) € 172 744 372 (PV)
Grant for Interest rate subsidy (2%)	International Support Requested	€ 8 811 887
Grant for exchange risk coverage (4%)	International Support Requested	€ 17 991 215
Capitalization of risk guarantee mechanism	International Support Requested	€ 21 473 953

<b>Create financial scheme for PROMO-ISOL</b>		
Technical assistance in negotiations	International Support Requested	€ 40,000
Grant for energy auditing Subsidy	International Support Requested	€ 2,860,000
FTE investment Subsidy	Domestic Pubic Sector Contribution	€ 14,385,800
Commercial loans	private entities	€ 54,229,032
Grant for Extra investment premium	International Support Requested	€ 7,744,880
Grant for Interest rate subsidy (2%)	International Support Requested	€ 1,196,227

<b>Technical component</b>		
Technical assistance	Domestic Pubic Sector Contribution	€ 935,000
Technical assistance	International Support Requested	€ 2,482,000
Technical assistance	private entities	€ 1,424,000
<b>Outreach component</b>		
Outreach activities	Domestic Pubic Sector Contribution	€ 480,000
Outreach activities	International Support Requested	€ 120,000
		<b>€ 481,279,595</b>

Component	Overall Costs [EUR]	Costs covered by government	Costs for which international support is sought	Costs covered by private entities
Financial component	475 838 595	€ 75 112 029	€ 346 497 534	€ 54 229 032
Technical component	4 841 000	€ 935 000	€ 2 482 000	€ 1 424 000
Communication and outreach component	600 000	€ 480 000	€ 120 000	€ -
<b>Total</b>	<b>481 279 595</b>	<b>€ 76 527 029</b>	<b>€ 349 099 534</b>	<b>€ 55 653 032</b>

# Conclusions

- NAMA : Promising opportunity for transformational change in building sector
- NAMA, by strengthening the sustainable energy technology and service market :
  - increase the uptake of building integrated energy conservation technologies in the Tunisian building sector
  - and achieve wider sustainable development benefits
- Support the transformation of the Tunisian building sector towards a low carbon path through:
  - Strengthening institutional capacities necessary to manage the NAMA programme
  - Building and strengthening technical capacities of energy conservation products and services providers
  - Providing grounds for decision to support promising energy conservation technologies for building segments



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# Thank you !

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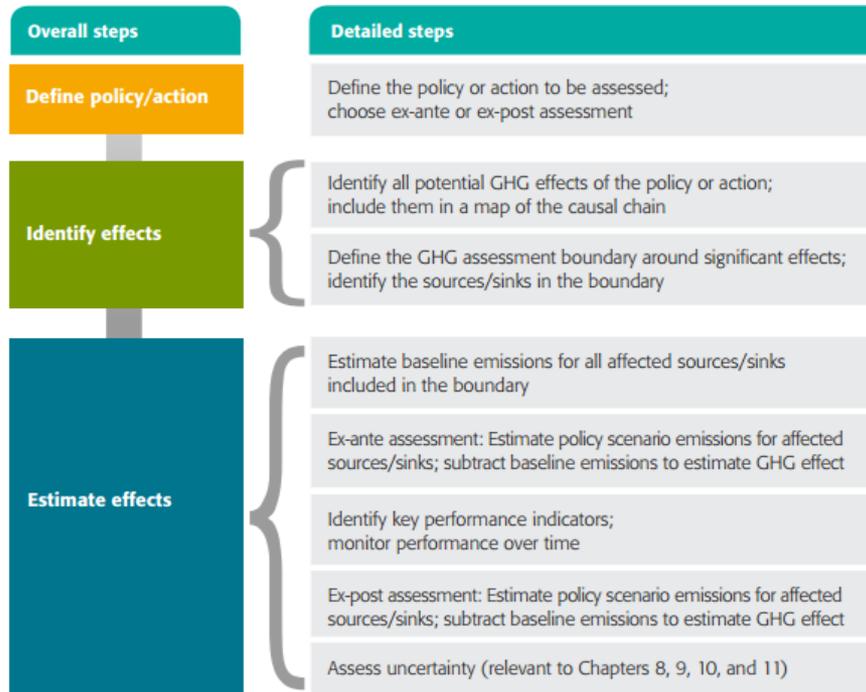
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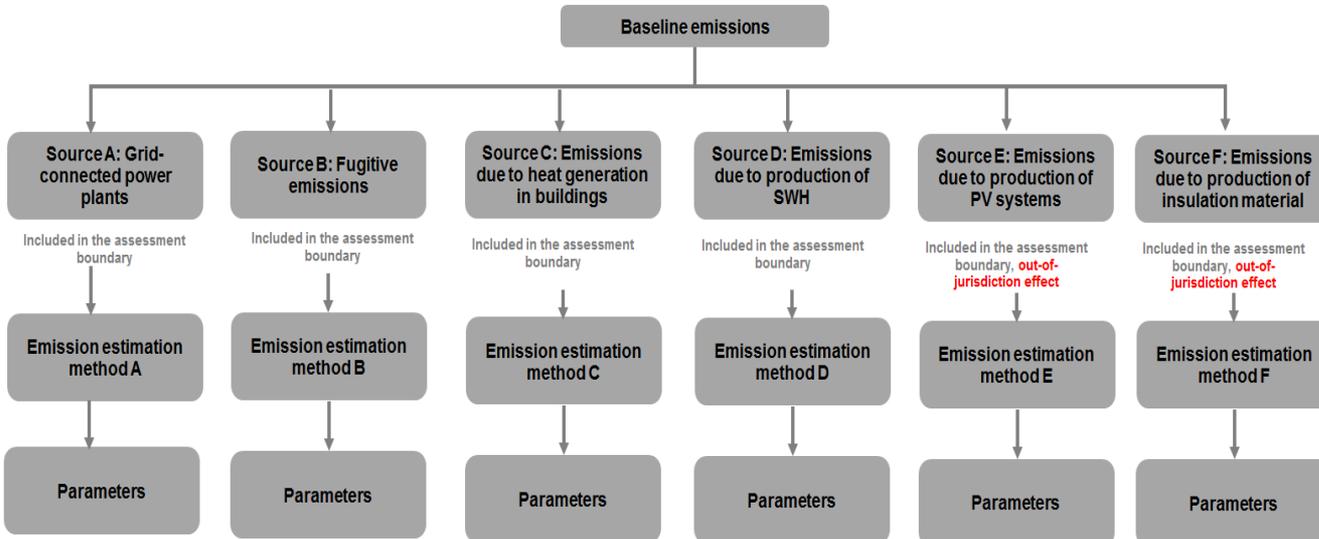
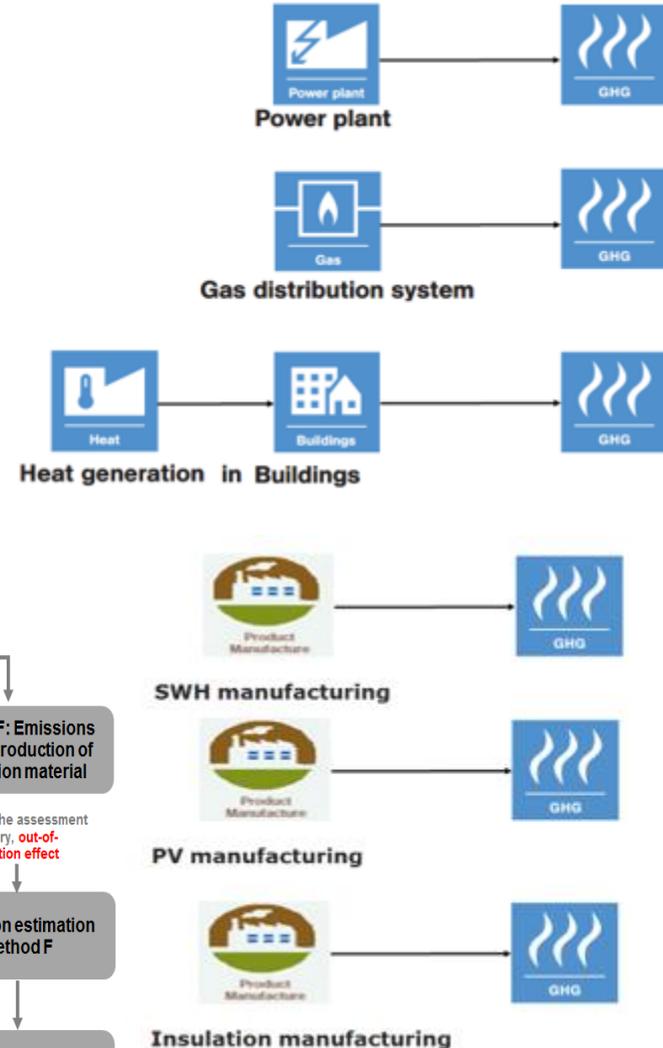


# Expected outcomes : GHG emission reduction

Assessed according to the GHG Protocol Policy and Action Standard



6 GHG sources



## **Expected outcomes : GHG emission reduction**

### **Baseline scenario (what would have happened in the absence of the NAMA support)**

PV and SWH will continue to have low penetration in the building sector and no thermal insulation is expected to be realized by homes considering the current financial technical and regulatory barriers in the building sector.

In terms of installation, 905000 m<sup>2</sup> of SWH and 110 MW of PV are expected to be installed over 2016 -2030

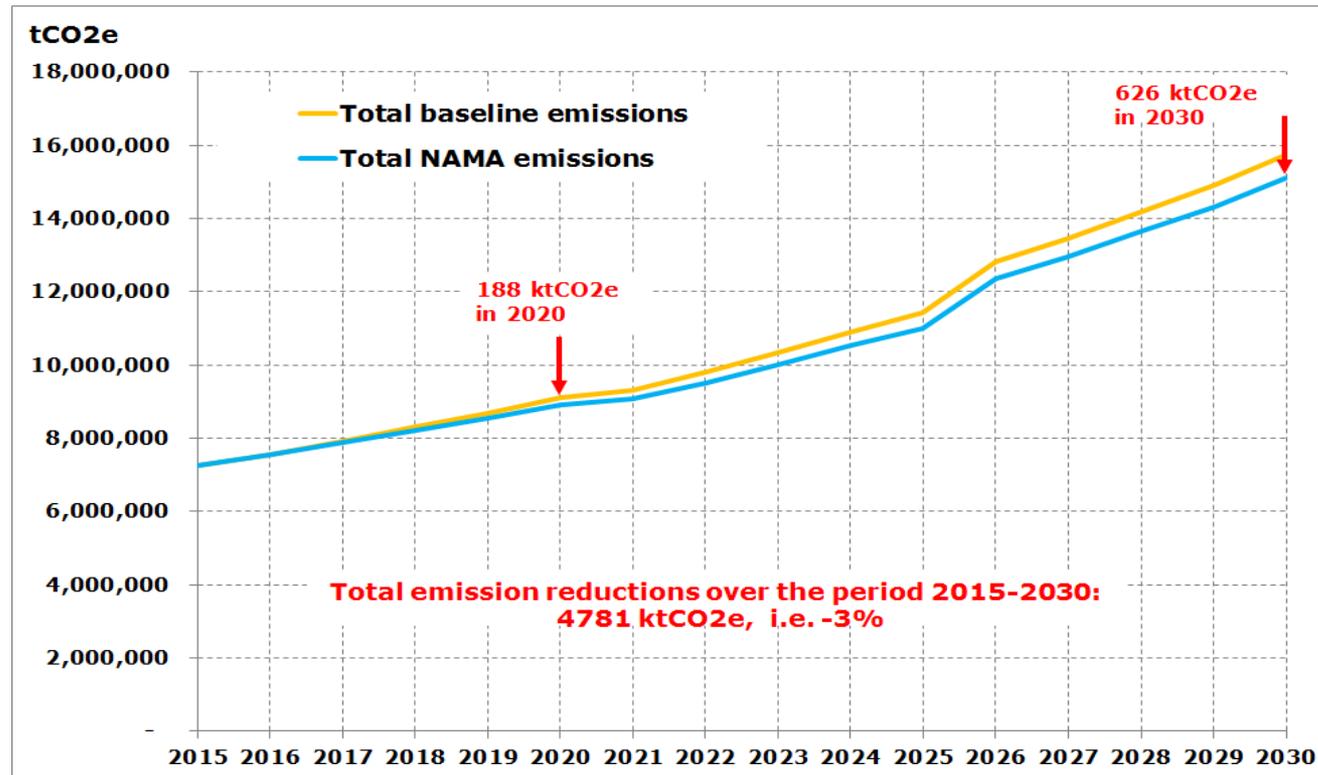
### **NAMA scenario**

Implementation of NAMA activities allowing a scale up of existing programmes (PROSOL and PROSOL-ELEC) and creating a complementary programme (PROMO-ISOL for insulation): 1,710,000 m<sup>2</sup> of SWH and 564 MW of PV will be installed, and 65,000 homes thermally insulated under the NAMA scenario over 2016 -2030

### **NAMA impact:**

additional 805,000 m<sup>2</sup> of SWH, 454 MW of PV, and the thermal insulation of 65,000 homes over 2016 -2030

# Expected outcomes : GHG emission reduction



GHG source	Baseline emissions (tCO <sub>2</sub> e)	NAMA emissions (tCO <sub>2</sub> e)	Change (tCO <sub>2</sub> e)
Power plant	94,094,588	90,881,613	3,212,975
Fugitive emissions	21,396,113	20,684,283	711,830
Heat generation in buildings	55,726,765	54,382,610	1,344,155
SWH Manufacturing	444,620	811,717	- 367,097
PV Manufacturing	15,640	77,384	- 61,744
Insulation Manufacturing	0	59,184	- 59,184
<b>Total</b>	<b>171,677,727</b>	<b>166,896,791</b>	<b>4,780,936</b>

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