



REPOBLIKAN'I MADAGASIKARA
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REPUBLIC OF MADAGASCAR
MINISTRY OF WATER, ENERGY AND HYDROCARBONS



SCALING UP RENEWABLE ENERGY PROGRAM INVESTMENT PLAN



Presentation to the SREP Sub-Committee

June 6, 2018

COUNTRY CONTEXT

Population : 24,894,551

Population Growth : 2.8 % per year

Area : 587,041 km²

Electrification rate :

 overall: 15%

 rural : 6%

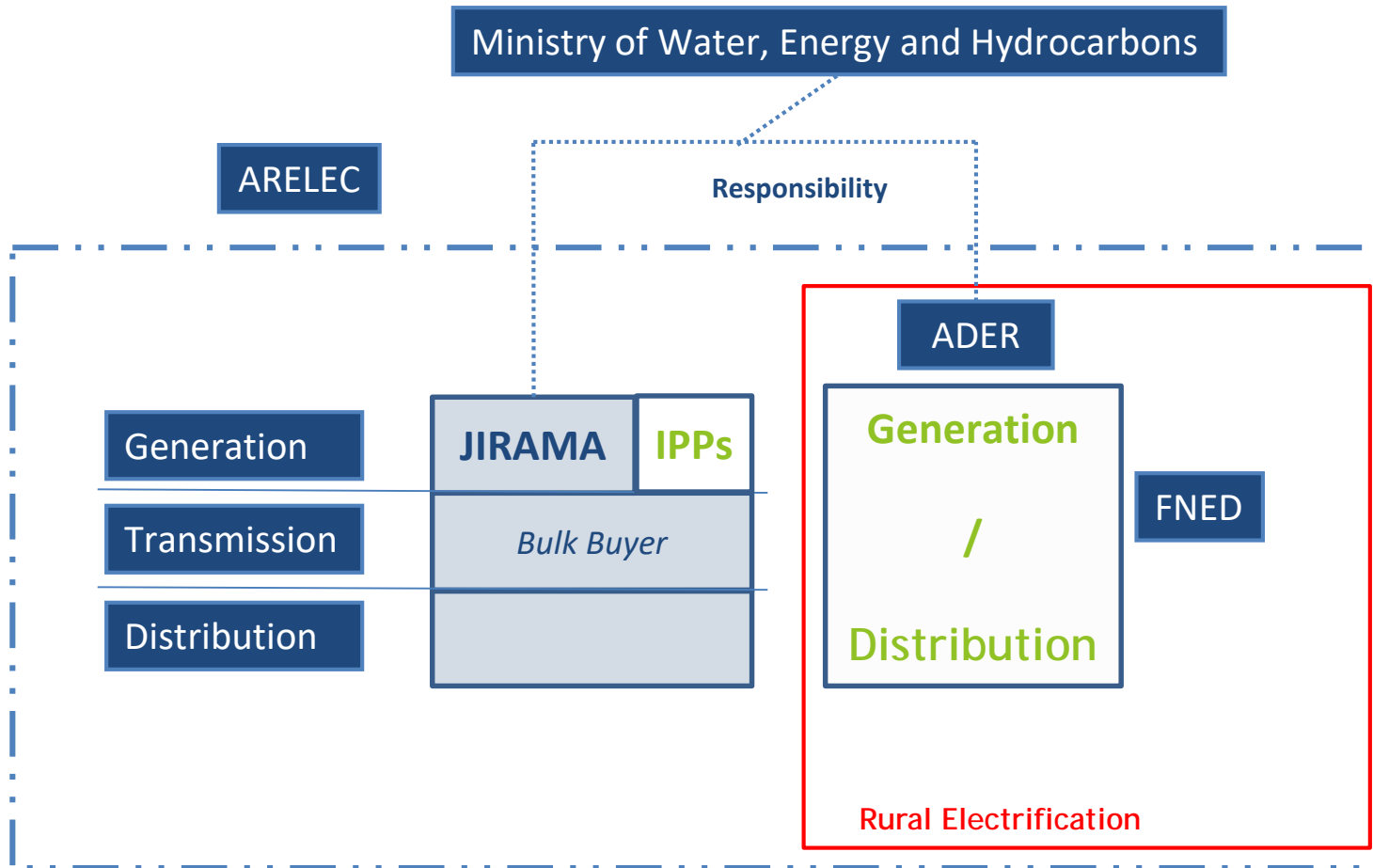
GDP per capita : US\$ 401



ELECTRICITY SECTOR OBJECTIVES - New Energy Policy (2015-2030)

- ❖ 71% of households will use modern cooking facilities, compared to about 4% currently
- ❖ 70% of households will have access to electricity or a modern source of lighting, compared to 15% currently
- ❖ 80% of the energy mix targeted for 2030 will be renewable, compared to 1% at present
- ❖ 60% of households, businesses, and industries will adopt effective measures of electricity use, compared to the currently almost non-existent penetration rate

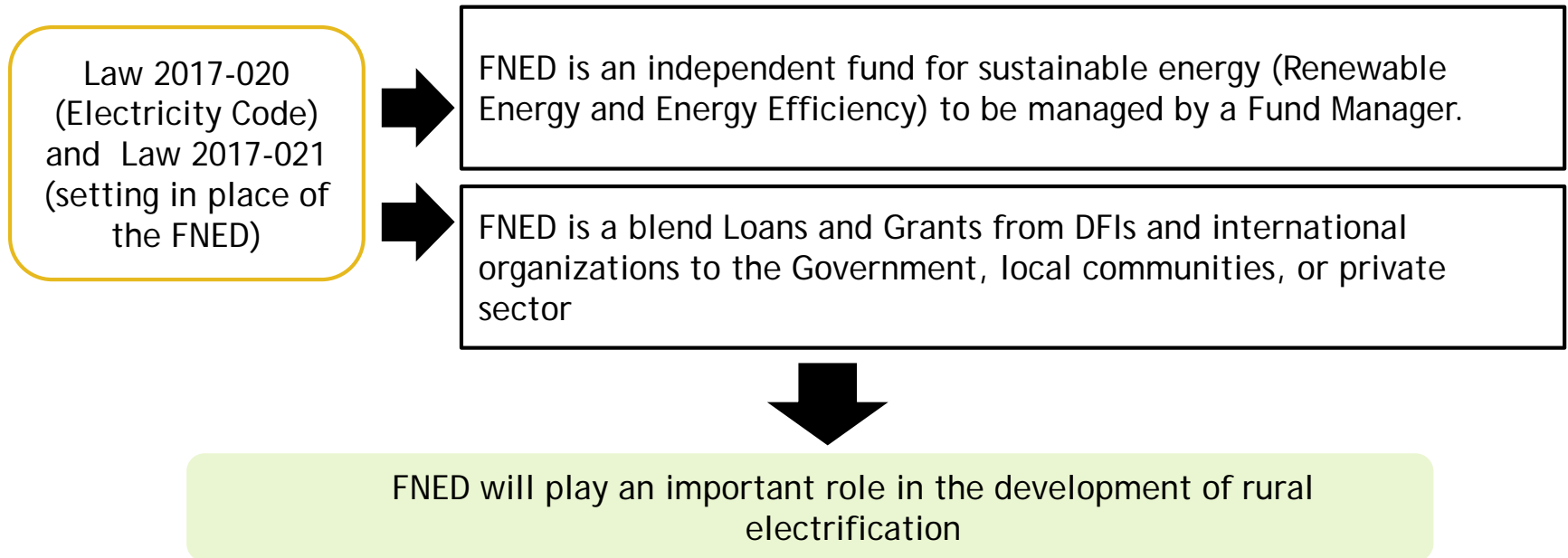
INSTITUTIONAL FRAMEWORK



- Institutional relationship
- - - - - Regulation
- IPP, Generation/ Distribution Private Operators

NATIONAL SUSTAINABLE ENERGY FUND - FNED

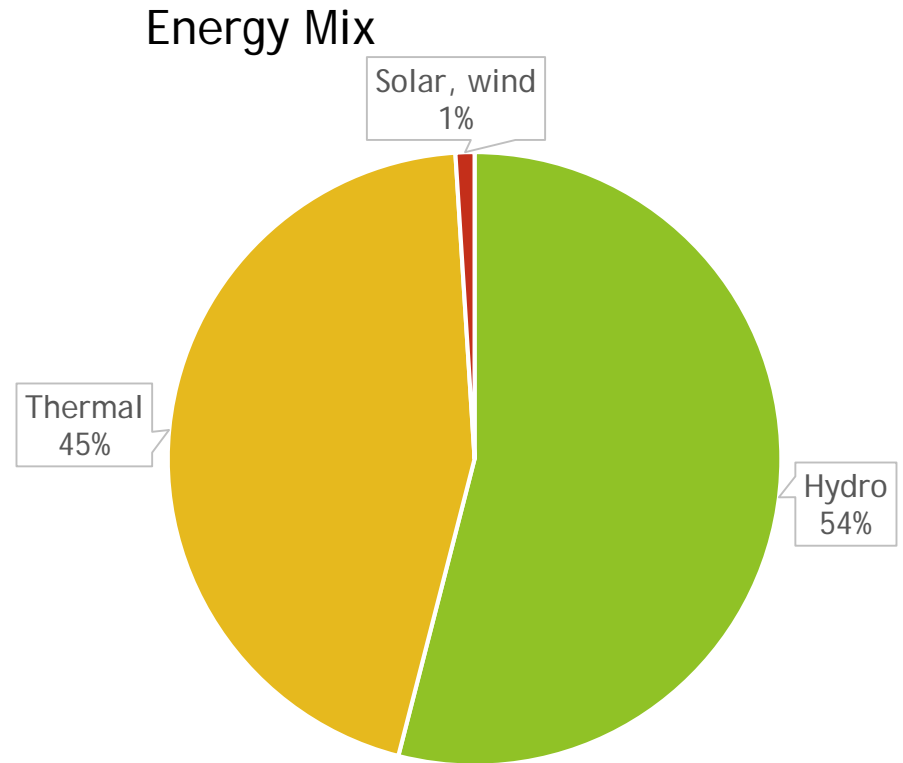
National Electricity Fund (FNE) has become National Sustainable Energy Fund (FNED)



➔ The elaboration of law enforcement decree and the preparation of Implementation Manual are ongoing with GIZ Technical Assistance

KEY ELECTRICITY SECTOR DATA

- ❖ National electrification rate: 15%
- ❖ Rural electrification rate: 6%
- ❖ 3 Interconnected Networks (RIA, RIT et RIF) and 115 isolated grids
- ❖ JIRAMA Installed Capacity: 692 MW (417 MW available, peak demand (2016) 342 MW)
- ❖ ADER installed capacity : 7.9 MW



SREP IP STRATEGIC OBJECTIVES AND PRIORITIES

Objectives

Increased Electricity Access

Increased Reliability of energy supply

Reduced Generation Cost

Support for Low-Carbon emission energy development

Improved local economic development

Strategic axes

Development of rural electrification projects: Rural electrification by ENR and mini-grids

Hybridization of isolated JIRAMA centers

- Achieve the NPE's population coverage ambitious goals of 70% by 2030, the development of plants and mini-grids in rural areas is essential.
- Given the size of the country and the distribution of energy demand, it is not economically viable to connect the whole country to a single interconnected grid
- Increase the rate of electrification in rural areas which is particularly low
- Reduce of average generation cost
- Improve the quality of service (capacity increase, decrease of power cuts frequency...)
- Better leverage to increase the share of renewable energy

MADAGASCAR RENEWABLE ENERGY PROJECT PIPELINE

- ✓ 68 projects across the two strategic areas for the renewable energy projects in Madagascar
- ✓ \$21.4 m requested from SREP to support initial sets of projects

Projects	Type of RE Projects	Number	Generation Capacity(MW)
Hybridization of JIRAMA isolated centers	Solar , Wind	59	38.1
Development of Rural Electrification Projects	Small Hydro	9	15
TOTAL	Solar, Wind , Hydro	68	53.1

SREP IP FINANCING PLAN

Project 1: Rural electrification by renewable energy and mini-grids

	SREP	WB	AfDB Private Window	Other DFIs ¹	Private Sector	Government of Madagascar	Additional funding	Total
Feasibility study		3 ²						
Technical Assistance for Project implementation	0.5 ³			1.4				4.9
Investment	11.5 ⁴		5 à 10 ⁵	7.1 ⁶	7.5 ⁷		8.8	39.9 to 44.9
Total	12	3	5 à 10	8.5	7.5		8.8	44.8 to 49.8
SREP Leverage	1: 3.1 to 1:3.7							

[1] UE, AFD, ONUDI

[2] Parallel Financing (loan) on ESOGIP (« Electricity Sector Operations and Governance Improvement Project »)

[3] SREP Grant

[4] SREP Financing of 1.5 \$M (Grant) and 10 \$M (Loan)

[5] Private Loan from AfDB

[6] Other Financings, mainly grant financing

[7] Contribution to equity

SREP IP FINANCING PLAN

Project 2: Hybridization of JIRAMA isolated centers

	SREP	WB	AfDB Private Windows	Other Financiers	Private Sector	Government of Madagascar	Total
Technical Assistance	2 ⁹					(10)	2
Investment	6 ¹¹		Loan 5 to 10	(12)	25.7 ¹³		30.7 to 35.7
Total	8		5 to 10		25.7		32.7 to 37.7
Leverage ratio	1:2.7 to 1:3.2						

[8] UE, AFD, ONUDI

[9] SREP Grant

[10] The counterpart Funding could be the security payment Fund.

[11] Garanty

[12] L'AFD is putting in place a line of credit « SUNREF » to support private sector.

[13] Loans from other DFI, loan from commercial Bank, equity participation

SREP IP EXPECTED RESULTS & OUTCOMES

SREP Indicators	Expected results
Increased installed capacity to generate renewable energy	19 MW (55 GWh per year)
Increased access to electricity through renewable energy	At least 12,500 households
Low-carbon impact power generation developed	37,000 tCo2eq per year
Increased accessibility and competitiveness of renewable energy	Pilot projects using a sustainable approach based on private sector participation
Increased industrial use of energy	Positive
Impact on economic, social and environmental development	<p>Strengthened institutional capacity</p> <p>Increased energy security and electricity access (esp. in rural areas)</p> <p>Increased government and private sector experience and capacity to develop RE projects in Madagascar</p> <p>Displacement of diesel and kerosene and reduction of GHG emissions and environmental pollution</p>

SREP IP CONSULTATION PROCESS

The formulation of the SREP-Madagascar IP is a result of a participatory and inclusive approach with various stakeholders.

This process, made possible by the leadership of the Government of Madagascar represented by the Ministry of Water, Energy and Hydrocarbons(MWEH), was based on:

- ❖ The result of an **in-depth stocktaking exercise**
- ❖ The close **collaboration** between MWEH and MDBs
- ❖ The conclusions and recommendations of the numerous national consultation **workshops** and different **meetings** with main national stakeholders including private sector involved in the development of RE, donors, and NGOs
- ❖ The posting of all relevant documents on a dedicated **Website** for public consultation (during the preparation phase of IP)

SREP IP STAKEHOLDERS ENGAGEMENT

Stakeholders	Contributions/Outcomes	How
Sector institutions, electricity utility, private, and nongovernmental organization(NGO)	Key information for the design of the off-grid electrification component and of the hybridization component	Workshops and meetings
Development Partners (KfW, GIZ, AFD, UNDP, EU), NGOs, private sector	Inputs and comments on the proposed Investments Experience sharing on current RE projects/programs	SREP joint mission and Consultative workshops (March 2018)
Civil society and private sector	Identification of needs in terms of training on RE development and monitoring Strong support to have capacity building as crosscutting activity.	SREP joint mission and Consultative workshops (March 2018)
End - users	Assessment of beneficiaries awareness	Field Missions (December 2017 and February 2018)
Public	Positive feedbacks on the IP Recommendations on shortening timelines to be considered during project design	Investment plan uploaded on JIRAMA website (April 2018) with contact point for providing feedback

THANK YOU

