AFRICAN DEVELOPMENT BANK ADB/BD/WP/2019/300/Approved

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BOARD APPROVAL Lapse-of-time Procedure

16 Decembver 2019

FOR INFORMATION

MEMORANDUM

- TO : THE BOARDS OF DIRECTORS
- FROM : Vincent O. NMEHIELLE Secretary General
- SUBJECT : <u>MADAGASCAR POWER TRANSMISSION NETWORK REINFORCEMENT</u> <u>AND INTERCONNECTION PROJECT IN MADAGASCAR - PHASE I</u> (PRIRTEM I).

<u>ADF LOAN OF UA 9.65 MILLION</u> TSF (PILLAR I) LOAN OF UA 18.17 MLLION

The Loan **Proposals** and the draft **Resolutions** related to the above-mentioned project, were submitted for **your consideration on a Lapse-of-time Basis** on 2 December 2019.

The Secretariat General has recorded the abstention of the US chair by the approval deadline of 16 December 2019.

The Proposals are considered as **approved** and the Resolutions **adopted**.

Attach:

Cc: The President

*Questions on this document should be referred to:			
Mrs. M. NGURE	Acting Director General	RDGS	Extension 8501
Mr. B. BALDEH	Director	PESD	Extension 4036
Mr. G. PENN	General Counsel	PGCL	Extension 3220
Mr. M. CHERIF	Country Manager	COMG	Extension 6000
Ms. A. M. MECCA	Division Manager	PGCL.1	Extension 3309
Mrs. A. NALIKKA	Officer-In-Charge	PESD.2	Extension 2272
Mr. P. OSSOUCAH	Team Leader	PESD.2	Extension 4904
Mr. M. TIANA	Co Team Leader	RDGS.1	Extension 6011
SCCD: F.S.			

AFRICAN DEVELOPMENT BANK GROUP



PROJECT : POWER TRANSMISSION NETWORK REINFORCEMENT AND INTERCONNECTION IN MADAGASCAR - PHASE I (PRIRTEM I) P-MG-FA0- 019

COUNTRY: MADAGASCAR

PROJECT APPRAISAL REPORT

Date: November 2019

	Team Leader	OSSOUCAH, PHILIPPE	Principal Power Engineer, PESD2	
	Co-Team Leader	MANASSE-R., TIANA	Senior Energy Specialist, RDGS	
		IBRAHIM, ABDALLAH	Energy Consultant, COMG	
		NACEUR, IHCEN	Portfolio Analyst, PESA	
		FORTON, OSRIC TENING	Principal Environmental Safeguards Specialist, SNSC	
		DAYO, TANKIEN	Principal Country Economist, ECSA0	
		CHORIF, IMEN	Principal Country Programme Officer, COMG	
		DJAMALI IBRAHIME	Principal Energy Specialist, RDGN1	
		KONE, MOUSSA	Principal Energy Engineer, PESD1/RDGE1	
Appraisal Team	Team Members	LE GROUMELLEC, ELSA	Principal Legal Counsel, PGCL1	
rippiusui iouni		CATERINA MATTIOLI	Legal consultant, PGCL1	
		BYAMUGISHA, JOSEPH	Senior Financial Management Specialist, RDGS4	
		RAZANASAMY, ELIANE	Procurement Specialist, SNIF3/COMG	
		MUSUMALI, MUSOLE MWILA	Climate Change and Green Growth Specialist, PECG2	
		QUENARD, CAMILLE	Gender Specialist (Consultant), AHGC1	
		RATOVOSON, SOLOFOARIJAONA	Disbursement Assistant, COMG	
	Country Manager	CHERIF, MOHAMED	Country Manager, COMG	
	Sector Manager	NALIKKA, ANGELA	Division Manager (Ag.), PESD2	
	Sector Director	BATCHI BALDEH	Director, PESD0	
	Regional Division Manager	KANONDA, E. FARAI	Manager Regional Operations – Energy and Infrastructure, RDGS1	
	Regional Director	NGURE, JOSEPHINE	Director General (OIC), RDGS	
	KITANDALA LUHANA, F MAHIEU SVI VIE Princir	RAYMOND, Power Specialist, R	2DGW1	
Peer Reviewers	HATIRA, YUSEF, Environ	mental Specialist, RDGS4		

VALKO-CELESTINO, ANNE, Senior Gender Specialist, RDGS.4

N'GUESSAN, MICHEL, Young Professional, AHWS

AFRICAN DEVELOPMENT BANK GROUP



MADAGASCAR

POWER TRANSMISSION NETWORK REINFORCEMENT AND INTERCONNECTION PROJECT IN MADAGASCAR - PHASE I (PRIRTEM I)

RDGS/PESD/COMG/PGCL DEPARTMENTS

December 2019

Translated Document

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Currency Equivalents

(November 2019) UA 1 = MAG 5,046.16 UA 1 = EUR 1.23668 UA 1 = USD 1.37939

Fiscal Year

1 January – 31 December

Weights and Measures

1 kilovolt (kV)	=	1 000 Volts
1 kilovolt Ampere (kVA)	=	1 000 VA
1 kilowatt (kW)	=	1 000 Watts
1 Megawatt (MW)	=	1 000 kW
1 kilowatt hour (kWh)	=	1 000 Wh
1 Megawatt hour (MWh)	=	1 000 kWh
1 Gigawatt hour (GWh)	=	1 000 MWh

m	meter	koe	kilogram of oil equivalent
cm	centimetre = 0.01 metre	kV	kilovolt = 1,000 volts
mm	millimetre = 0.001 metres	KVa	kilovolt ampere (1,000 Va)
km	kilometre 1,000 metres	KW	kilowatt = 1,000 watts
m²	square metre	GW	gigawatt (1,000,000 kW or 1,000 MW)
cm ²	square centimetre	MW	megawatt (1,000,000 W or 1,000 kW
km²	square kilometre = $1,000,000 \text{ m}^2$	KWh	Kilowatt hour (1,000 Wh)
ha	hectare = $10,000 \text{ m}^2$	MWh	Megawatt hour (1,000 KWh)
t (t)	metric tonne (1,000 kg)	GWh	Gigawatt hour (1,000,000 KWh)

Acronyms and Abbreviations

werment
e and Agro-Industry

RIA	Antananarivo Interconnected Network
RIT	Toamasina Interconnected Network
PPF	Project Preparation Facility
TSF	Transition Support Facility
UA	Unit of Account
WB	World Bank

Project Information

Client Information

Borrower:	Republic of Madagascar
Executing Agency:	Ministry of Energy, Water and Hydrocarbons (MEEH)

Financing Plan

Source	Amount (UA)	Instrument
ADF	9.65 million	Loan
TSF	18.17 million	Loan
EU	23.04 million	Grant
EIB	64.32 million	Loan
KOEXIM	32.34 million	Loan
Madagascar	11.55 million	Own resources
Total cost	159.06 million	

Important Financial Information on ADF and TAF Financing

	ADF	TSF
Loan amount	9.65 million	18.17 million
Interest rate	N/A	N/A
Commitment fee *	0.50%	0.50%
Other charges *	0.75% (service fee)	0.75% (service fee)
Maturity	40 years	40 years
Grace period	10 years	10 years
FIRR, NPV (baseline scenario)	82 %, EUR 12 million	
ERR, NPV (baseline scenario)	52%, EUR 1.13 million	

If applicable

Timeframe – Main Milestones (expected)

Concept Note approval18 June 2019Project approval16 December 2019EffectivenessMay 2020CompletionDecember 2024Last disbursementMarch 2025Last reimbursementDecember 2075

Project Summary

Project Overview	As part of the Power Transmission Network Reinforcement and Interconnection Project in Madagascar (PRIRTEM) aimed at interconnecting the country's three major power grids (Antananarivo, Toamasina, Fianarantsoa), the Bank plans to partly finance the cost of Phase 1 (PRIRTEM-1), the objective of which is to "strengthen and link the two interconnected networks of Antananarivo (RIA) and Toamasina (RIT), and electrify localities and rural areas along National Road 2." The project plans to build a 220-kV power line between Antananarivo and Toamasina (267 km) with a 120 MW capacity and electrifying the rural areas along the high-voltage line corridor. Estimated at EUR 203 million, the project is co-financed by the EU, EIB, KOEXIM and GoM and will be implemented over 48 months, with the main works completed in Q4-2023. The line, which will run across three (3) regions (Analamanga, Alaotra Mangoro and Atsinanana), will interconnect RIA and RIT to facilitate energy flow between the two networks and consequently ensure reliable power supply, while also easing the development of large hydropower facilities. By upgrading its hydropower, Madagascar will also reduce its dependence on fossil fuels, the import costs of which have a significant impact on the economy and JIRAMA's financial viability. Besides the power line, the project also includes the construction of 4 substations (Tana Nord II, Ambohibary, Antsampanana and Toamasina), which will strengthen RIA and RIT and ensure power distribution in the rural areas crossed. The main project beneficiaries are JIRAMA, ADER and the Antananarivo and Toamasina urban communities, as well as the rural communities in the project area. Social studies have shown the very favourable opinion of people affected by PRIRTEM-1.
Needs Assessment	Madagascar has considerable underdeveloped renewable energy potential. Less than 3% of that potential (7,800 MW) is being harnessed. There is also strong potential for developing solar (about 2,800 hours of sunshine per year) and wind energy (estimated at 2,000 MW). However, the national power access rate is only 15%. By interconnecting Madagascar's two main power grids (Antananarivo and Toamasina) with a 120 MW 220 kV line, PRIRTEM-1 will increase JIRAMA's power transmission and disposal capacity, which will step up renewable energy production and provide access to reliable and cost-effective energy. The new 220 kV line is a necessary condition for the integration of renewable energies, particularly the two major hydropower developments on the drawing board (Sahofika 192 MW and Volobe 120 MW) that will supply the country's two main interconnected networks. It should be noted that the Bank is involved, both through both the public and private sectors, in promoting these two hydropower projects.
Project Impact	PRIRTEM-1 will enhance the development and integration of renewable energy at a lower cost and render power supply more reliable in Madagascar's two largest cities, in addition to providing access to power in a rural area with high agro-industrial and mining potential. The project will contribute to improved business competitiveness, increased industrialisation, job creation and enhanced quality of life for the rural communities, including women actively involved in local economic activities.
Bank's Value Added	The Bank is PRIRTEM's lead partner and finances feasibility, environmental and social studies for all works planned under the project. The Bank has been active in the sector since 2015 and has participated extensively in developing PRIRTEM, which is now being implemented. Therefore, it is best placed to execute the project given its familiarity with both the project and the sector, as well as its leadership in the preparatory activities. Furthermore, the Bank has extensive expertise in the development of power transmission lines and rural electrification.
Capacity and Knowledge Building	PRIRTEM-1 will support the building of Madagascar's institutional capacity in the construction and operation of high-voltage lines, as well as rural electrification. Training activities will also include building the entrepreneurial capacity of the local people, particularly through the promotion of gender equality.

Results-Based Logical F	'ramework
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Countr Project	Country and Project Name: Madagascar – Power Transmission Network Reinforcement and Interconnection Project, Phase I (PRIRTEM I) Project Objective: Reinforce and interconnect the two interlinked networks of Antananarivo (RIA) and Toamasina (RIT) and electrify towns and rural areas along National Highway 2.												
		PERFORMANCE INDICA	TORS										
Result Chains		Indicators (including ISCs)	Baseline (2018) Targets (2024)		Means of Verification	RISKS/MITIGATION MEASURES							
IMPACT	Improved quality of life for the people through access to electricity	 Electrification rate Human Development Index (HDI) 	 15% HDI 0.519 (2017) 	30%HDI 0.6	 IMF Publication Human Development Report 	Risk • Extremely high electricity tariff. Mitigation Measures • The development of renewable resources will reduce the power production							
	Increased power transmission and hydropower generation capacity	 Capacity of the interconnected transmission system (RIA-RIT) Hydropower generation capacity 	0 MW170 MW	120 MW290 MW	 MEEH Report INSTAT Publication ORE Activity Report JIRAMA Annual Report Project Progress Report 	cost. <u>Risks</u> Delay in paying compensation and granting environmental permits New technologies incorporated into JIRAMA facilities 							
S	Reduction of GHG emissions	• Thermal production capacity	• 237.5 MW	• 120 MW		 Limited capacity of the road network (50 tonnes) Extreme weather conditions and 							
OUTCOMES	Increased access to electricity	 % of households connected to the grid in the project area Number of new connections in the project area (% of women¹) 	 8% 0 connections (0% women) 	 20% 30 000 connections (30% women) 		 cyclones. 5. High risk of overlaps between JIRAMA's concessions and ADER's private operators <u>Risk Mitigation Measures</u> 1. The MEEH/MEF will establish a budget line dedicated to ESMP/RAP implementation 							
	Increase in the local community engaged in entrepreneurship (VSME) due to better access to electricity	• Number of new enterprises established in the project area (% headed by women)	• 0 enterprises (0% led by women)	y • 30 enterprises (30% led by women)		 The project will include training activities on the new technologies introduced under the project The studies will take account of the road network's 50-tonne limited 							

¹ Percentage (%) of connections made to a female customer who can be either an individual woman, a household or a business head.

	Development of power transmission networks and rural electrification	 220 kV lines established 20/30 kV lines established New transformer substations built Percentage of rural communities connected to the national grid Small-scale hydropower installations completed Mini-grids established Number of households connected to mini- grids 	 0 km (220 kV) 0 km (20/30 kV) 0 substation 0 area 0 small hydropower projects (PAH) (cumulated capacity 1 400 kW) 0 km of mini-grid 0 	 267 km (220 kV) 37 km (20/30 kV) 4 substations 3 areas 3 small hydropower projects (PAH) (cumulated capacity of 1 400 kW) 320 km of mini-grids 10 000 	 MEEH Report CEP Progress Reports Works Progress Report Project Manager's Monthly Report AfDB and TFP Supervision Report ESMP and RAP Monitoring Report Project Completion Report Report on training Audit report ESMP/RAP Annual Audit Report 	4.	capacity into account when sizing the equipment. The studies will take account of Madagascar's extreme conditions and climate change when designing the structures. GoM will ensure the necessary coordination for the establishment of concessions between JIRAMA and ADER's private operators. GoM has adopted the new Electricity Code.
STUTPUO	Employment and capacity building	 Number of jobs created (% of women) Training conducted as part of project activities Number of people trained (% of women and youths) Local entrepreneurship development programme Number of beneficiaries from the local entrepreneurship development programme (% of women and youths) 	 0 employment 0 training 0 person trained 0 programme 0 programme beneficiary 	 300 jobs (30% women) 10 training sessions 80 persons trained (30% women) 20 programmes 300 beneficiaries (30% women) 			
	Implementation of the ESMP	Percentage of ESMP activities carried out (%)	• 0% of ESMP activities carried out	• 75% of ESMP activities carried out			

ĺ		COMPONENTS	RE	SOURCES	
	1.	Strengthen the power transmission network:	Components		Total
		(1) (1) Construction of 126 km of 220 kV double-circuit line consisting of one conductor per phase (coastal area)	Power transmission netwo	rk	
		(ii) (ii) Construction of 141 km 220 kV double-circuit line consisting of one conductor per phase (inland)	reinforcement and extension	on	120.04
		(iii) (iii) Construction of $220/138/20$ kV Tana North 2 (TN2) interconnection station	Rural electrification		7.42
CTIVITIES		 (iv) (iv) Replacement/Extension of Andrangina (Ambonibary) substation in 220/138/35/20 kV (v) (v) Construction of the 220/20 kV Antsampanana interconnection station 	Institution building		3.00
		(vi) (vi) Construction of 220/138/35 kV Toamasina interconnection station RAP	RAP and ESMP implement	itation	10.59
	2.	Rural Electrification:	Project management		4.88
		Brickaville municipalities	Base cost		145.93
		(ii) (ii) Support to ADER for 3 mini hydro-grids in PPP - Angadanaro (800 kW), Ampasimbe (380 kW)	Physical contingency (4.59	%)	6.57
		and Sahandaso (250 kW), 320 km of MV/LV network and 10,000 connections	Financial contingency (4.5	%)	6.57
N		 (ii) Institution building: (i) (i) Programme to support entrepreneurship and local economic development (ii) (ii) Awareness-raising campaigns on the integration of women (iii) (iii) Staff capacity building 3. Implementation of the ESMP and RAP: (ii) Implementation of the ESMP and RAP: 	Total project cost	159.06	
IAI					
N	3.		Sources of Financing	Total (UA million)	Total %
	4.	Project Management:	ADF	27.82	17.5%
		(i) Operation of the Project Implementation Unit (PIU)	EU	23.04	14.5%
		(ii) KAP and ESMP monitoring and evaluation (iii) Technical assistance to project management	EIB	64.32	40.4%
		(iv) External audits of project financial statements	KOEXIM	32.34	20.3%
		(v) Monitoring and evaluation of project socio-economic impacts	GoM	11.54	7.3%
		(vi) Communication on the project	Total project cost	159.06	100%

Project Implementation Schedule

		201	19 (0)			2020) (1)			2021 (2)			2022 ((3)			202	3 (4)		2	2024 (5)	
PRIRTEM Schedule	1	2	3	4	1	2	3	4	1	2	3 4	4	1	2	3	4	1	2	3	4	1	2	3	4
	-																							
Approval of PCN																								
Negotiation of Loan Agreement																								
Approval of PAR																								
Loan Signature																								
Implementation																								
Official Project Launch																								
First Disbursement																								
Procurement																								
Bid evaluation																								
Contract Negotiation																								
Signing of Contracts	_																							
Component 1. Electricity Transmission Network Renforcement																								
Component 2. Rural Electrification																								
Component 3. Institutional Support																								
Component 4. Implementation of the ESMPs and PAR																								
Supervision Mission	_																							
Audit																								
Mid-term Review																								
Works Completion																								
Completion Report																								

BANK GROUP MANAGEMENT'S REPORT AND RECOMMENDATION TO THE BOARD OF DIRECTORS CONCERNING A LOAN PROPOSAL TO FINANCE THE FIRST PHASE OF THE POWER TRANSMISSION NETWORK REINFORCEMENT AND INTERCONNECTION PROJECT IN MADAGASCAR (PRIRTEM-1)

Management hereby submits this report and recommendation concerning a proposal to grant an ADF loan of UA 27.82 million, of which UA 9.65 million will come from the performancebased allocation (PBA) and UA 18.17 million from the Transition Support Facility (TSF), to finance the first phase of the Madagascar Power Transmission Network Reinforcement and Interconnection Project (PRIRTEM-I).

1 STRATEGIC THRUST AND RATIONALE

1.1 Project linkages with Country Strategy and Objectives

1.1.1 As part of the New Energy Policy (NPE) 2015-2030 geared towards energy transition, the Government of Madagascar (GoM) proposes to promote the use of renewable energies for power generation by making the most of all opportunities to extend and interconnect networks through the deployment of autonomous mini-grids. Moreover, under the Madagascar Emergency Plan (PEM) currently being prepared, GoM is aiming at an electrification rate of 70% by 2030 and wishes to double the production capacity feeding the national grid to 800 MW by 2023. The MEEH's Vision 2023 plans to double Madagascar's power generation capacity by 2023 and achieve a 50% power access rate in the same year. Lastly, the General State Policy (PGE) focuses on 11 priorities, including energy and water for all, industrialisation and sustainable management, and natural resource conservation.

1.1.2 PRIRTEM-1 is fully aligned with the GoM guidelines as it will expand the national power grid, secure/stabilise power supply and contribute to current efforts to improve JIRAMA's financial sustainability. Furthermore, the project will optimise the means of production and facilitate the integration of renewable energies into the JIRAMA network. Major hydropower projects are planned including Volobe (120 MW) in 2024 and Sahofika (192 MW) in 2025.

1.1.3 The project is in line with the first pillar of the Bank's Country Strategy Paper (CSP) 2017-2021 for Madagascar, one of the objectives of which is the development of energy infrastructure. This intervention also plugs into the Bank's Strategy for a New Deal for Energy in Africa (2016-2025) and particularly the objective of achieving universal access to electricity on the continent by 2025. Lastly, this operation is fully in tune with the Bank's High 5s, in particular "Light up Africa" and "Improve the quality of life for the people of Africa", as well as its Long-Term Strategy (2013-2022), one of whose objectives is to develop infrastructure, including in the energy sector, with a view to promoting inclusive growth.

1.2 Rationale for Bank's Involvement

1.2.1 Madagascar has considerable potential for untapped renewable energy. The hydropower potential is estimated at 7,800 MW, of which only less than 3% is being exploited. There is also strong potential for solar (about 2,800 hours of sunshine per year) and wind energy (estimated at 2,000 MW). However, the national power access rate is only 15% (5.2% in rural areas). Moreover, Madagascar's three main power consumption centres (Antananarivo, Toamasina and Fianarantsoa) are isolated, which is a significant constraint to the development of new power plants.

1.2.2 By interconnecting the two largest economic centres of Antananarivo and Toamasina, PRIRTEM-1 will significantly increase the capacity for transporting and evacuating energy on the national grid, thereby enhancing the production of electricity and renewable energy, and

providing access to modern, reliable and cost-effective power. This will help improve the quality of life of the people, increase business competitiveness, develop industrialisation and create jobs while promoting the inclusion of vulnerable groups in new economic opportunities.

1.2.3 This programme will help to optimise and integrate production resources, particularly renewable energy production technologies. The availability of a new power transmission line between the country's two main interconnected grids - Antananarivo (RIA) and Toamasina (RIT) - is a necessary condition for the integration of major hydropower developments on the drawing board such as Volobe (120 MW) and Sahofika (192 MW).

1.2.4 The strengthening and extension of the national grid will improve the reliability of power supply and the connection of new localities while helping to enhance JIRAMA's financial stability, which is largely dependent on state subsidies. Under the project's rural electrification component, provision has been made to extend the distribution network to supply three localities. Lastly, to reach more remote areas, the project provides for the financing of 3 mini-grids powered by small hydropower plants (PAHs).

1.2.5 The Bank has been active in the sector since 2015 and has effectively participated in the preparation of PRIRTEM-1, which is being concretised under this programme. The Bank is the lead partner and finances feasibility studies for all works planned under PRIRTEM, through a UA 1 million funding from the Project Preparation Facility (PPF). In this regard, it is best placed to implement this project, given its familiarity with the project and the sector, and its leadership role during the preparation process. The Bank also has extensive expertise in power transmission lines and rural electrification.

1.3 Aid Coordination

1.3.1 The main development partners involved in Madagascar's power sector are the United Nations Development Programme (UNDP), the World Bank Group (WB), German International Cooperation (GIZ), the French Development Agency (AFD), the European Investment Bank (EIB), the German Development Bank (KfW) and the European Union (EU). The activities of the development partners are coordinated through a consultation platform and outlined in the respective country strategy papers.

1.3.2 Under the PRIRTEM-1 project, the EU, the EIB and KOEXIM will participate in cofinancing the project. The EIB and KOEXIM will provide parallel financing, while AfDB and the EU will jointly finance the project. The Bank has submitted a request to the EU for the approval of an EUR 30 million grant from the Africa Investment Platform (AIP). As lead partner, the AfDB will coordinate the project. Its activities are organised in separate batches to address the constraints of parallel financing and facilitate disbursements. Therefore, each of the project's sub-components will be funded by a single donor, except for the ADF/TSF/EU joint financing.

1.3.3 Moreover, although the WB will not fund PRIRTEM-1, it will finance a complementary project - the Least Cost Electricity Access Development Project (LEAD). LEAD aims to maximise the number of new connections and plans to provide power to at least 1.7 million people, 10,000 businesses and 750 health centres across the country, particularly in the PRIRTEM-1 intervention area. Thus, LEAD will help to connect a significant number of households from the structures built under PRIRTEM-1.

2 PROJECT DESCRIPTION

2.1 Project Components

2.1.1 The project has five components: (i) Strengthen the power transmission network; (ii) Rural electrification; (iii) Institution building; (iv) ESMP and RAP implementation; and (v) Project management. The details and estimated costs of the components are provided in the table below.

#	Description of the Components	Total (MUA)	ADF	TSF	EU	EIB	KOEXIM	GoM
1	Strengthen and extend the power transmission network	120.04	7.77	10.79	12.80	59.01	29.67	0.00
1.1	Construction of 126 km of 220 kV double-circuit line consisting of one conductor per phase (coastal area, Toamasina-Antsampanana)	41.38				41.38		
1.2	Construction of 141 km of 220 kV double-circuit line, consisting of one conductor per phase (interior), Antsampanana-Tana North 2)	31.36	7.77	10.79	12.80			
1.3	Construction of 220/138/20 kV Tana Nord 2 interconnection station	13.90					13.90	
1.4	Replacement/extension of the 220/138/35/20 kV Andrangina (Ambohibary) substation	15.77					15.77	
1.5	Construction of the Antsampanana 220/20 kV interconnection station	5.19				5.19		
1.6	Construction of the Toamasina 220/138/35 kV interconnection station	12.44				12.44		
2	Rural Electrification	7.42	0.00	0.00	7.42	0.00	0.00	0.00
2.1	Construction of 37 km of 20 kV HVA network to supply Morarano Gara, Antsampanana and Brickaville municipalities	1.66			1.66			
2.2	Development of 3 mini-hydro networks in PPP in Angadanaro (700380 kW) and Sahandaso (800 kW/250 kW), 320 km of MV/LV network and 10,000 connections	5.76			5.76			
3	Institution Building	3.00	1.00	1.60	0.40	0.00	0.00	0.00
3.1	Entrepreneurship and community economic development support programme	0.20			0.20			
3.2	Awareness-raising campaigns on the inclusion of women	0.20			0.20			
3.3	PRIRTEM studies (PPF)	1.00	1.00					
3.4	Capacity building of staff	1.60		1.60				
4	RAP and ESMP Implementation	10.59	0.00	0.00	0.00	0.00	0.00	10.59
4.1	RAP implementation	9.11						9.11
4.2	ESMP implementation	0.98						0.98
4.3	Environmental permits	0.50	0.00	4.20	0.51	0.00	0.00	0.50
5	Project Management	4.88	0.08	4.29	0.51	0.00	0.00	0.00
5.1	Office and computer equipment, other equipment	0.12		0.12				
5.2	Office furniture	0.12		0.12				
5.5	Automotive equipment	0.04		0.04				
5.5	PILI Staff	0.00		0.88				
5.5	RAP and ESMP monitoring and evaluation	0.32		0.32				
5.7	Technical assistance to project management	2.03		1.60	0.43			
5.8	External project financial audits	0.09		0.09	0.15			
5.9	Project procurement audits	0.04		0.04				<u> </u>
5.1	Administrative and financial procedure manuels	0.01	0.01					
5.1	Monitoring and evaluation of project socio-economic impacts	0.07	0.07					
5.1	Project communication	0.08			0.08			
	TOTAL BASE COST	145.92	8.85	16.67	21.13	59.01	29.67	10.59
	Physical contingency (4.5%)	6.57	0.40	0.75	0.95	2.66	1.34	0.48
	Price escalation (4.5%)	6.57	0.40	0.75	0.95	2.66	1.34	0.48
	TOTAL PROJECT COST	159.06	9.65	18.17	23.03	64.32	32.34	11.54
			6.1%	11 4%	14 5%	40 4%	20 3%	7.3%

Table 2-1:	PRIRTEM-1	Components
		Components

2.1.2 **Component I** consists of strengthening and extending the power transmission network and involves building the power interconnection line linking the Antananarivo Interconnected Grid (RIA), the Toamasina Interconnected Grid (RIT) and the four (4) associated transformer stations (Tana Nord II, Ambohibary, Antsampana and Toamasina).

2.1.3 **Component II** concerns the electrification of rural areas along the Antanarivo-Toamasina corridor with the power distribution network extension (about 37 km of line) from Antsampanana and Ambohibary substations to supply 3 municipalities (Morarano Gara in the Moramanga District as well as Mahatsara and Brickaville in the Brickaville District). This will connect nearly 1,500 new households (about 10,000 people) to the JIRAMA national grid. The component also includes support to three rural electrification projects (Angadanaro, Ampasimbe and Sahandaso) developed in Public-Private Partnership (PPP) by the Rural Electrification Development Agency (ADER). These stand-alone projects, for which preliminary design studies are available, will include the construction of a maximum of three (3) small hydropower projects (<1 MW) for a cumulative installed capacity of at least 1,400 kW, with approximately 320 km of distribution line (MV/LV), and the hook up to 10,000 new customers (approximately 52,000 people). The operators are selected by bid invitation in line with the country's regulations.

2.1.4 **Component III** will be dedicated to providing institutional support to the various project stakeholders. Specifically, provision has been made to organise training and awareness-raising programmes to promote entrepreneurship and the inclusion of women in the energy sector. There will also be capacity building on fiduciary issues, E&S, gender, climate change and technical assistance for MEF, MEEH, JIRAMA and ADER staff.

2.1.5 **Component IV** will focus on implementing the Environmental and Social Management Plan (ESMP), the Resettlement Action Plan (RAP) and the costs of obtaining environmental permits from ONE. Most of these costs will be borne by the government as counterpart contribution to PRIRTEM-1 funding.

2.1.6 Lastly, **Component V** will be dedicated to project management activities, including the cost of running the Project Implementation Unit (PIU), audit, monitoring, evaluation and communication. Technical assistance for project management, RAP and ESMP monitoring/evaluation will also be included to ensure the successful implementation of the operation. The assistance will be provided through the recruitment of consulting firms and individual consultants. In addition, it is expected that ADER will be in charge of the implementation of Sub-component 2.2 to develop 3 mini-hydro networks under PPP, Sub-component 3.1 to support entrepreneurship and local economic development, and Sub-component 3.2 to promote awareness campaigns on women's inclusion.

2.2 Technical Solutions Adopted and Alternatives Explored

2.2.1 The 220 kV, 267 km double-circuit interconnection line has been optimised to minimise untoward impact on housing and protected environments, reduce line length and the number of angle pylons to lessen E&S impacts, and facilitate access to the line corridor for assembly, service and maintenance purposes. Madagascar is in a cyclone zone with extreme winds, especially in the coastal areas. Consequently, the sizing and characteristics of the structures have been designed to suit these specific climatic conditions and existing international standards.

2.2.2 This interconnection line is one of the priorities of GoM's Least Cost Development Plan (PMMC) and clearly meets the country's needs insofar as it will allow the pooling of RIA and RIT's production assets (current and future), the securing of energy supply and increased access to electricity for households, social services and industries.

2.2.3 The innovation under the project is the introduction of new technologies into JIRAMA's facilities, including a new operating voltage (220 kV) and a modern control system (SCADA - Supervisory Control and Data Acquisition) at the four new substations to ensure remote network operation, thereby maximising reliability and efficiency in power supply.

2.2.4 Initially planned to run a maximum of 200 MW and equipped with two conductors per phase, the capacity of the double-circuit line was reduced to 120 MW and will be equipped with one conductor per phase. This configuration is in response to the studies and demand

projections carried out by the consultant in charge of the preparatory studies. The alternatives considered are indicated in the table below:

Alternative Solution	Brief Description	Reason for Rejection
No interconnection lines	This solution recommends developing the production and distribution resources specific to each regional network according to local/regional demand.	 It will not be possible to develop major hydropower facilities without the RIA and RIT interconnection since the respective demand of each network will not permit the development of the identified hydropower projects. Network interconnection allows increasing the evacuation capacity of all the energy produced by the new structures planned and better management of the means of production (integration of intermittent energy).
Double-circuit interconnection line with a 200 MW transmission capacity	The interconnection line must be equipped with two conductors per phase to pass through 200 MW.	 The choice of two conductors per phase implies the reinforcement of the structures (lines, pylons and substations) and leads to an increase in costs of approximately EUR 25 million. The demand projections made by the consultant show that the request does not require the line to be sized for a 200 MW transmission capacity. The simulations carried out by the consultant show that the use of one conductor per phase allows 120 MW to pass through, which meets the needs up to 2040 and beyond.

 Table 2-2: Alternatives Considered and Reasons for their Rejection

2.3 Project Type

2.3.1 PRIRTEM-1 is an investment project that is part of the GoM's action programme. It will be financed with an ADF loan, a TAF loan and an EU grant to be extended to the Republic of Madagascar under the conditions set out in Section 6 of this report. The project will also be co-financed by the EIB and KOEXIM (parallel financing).

2.4 Project Cost and Financing Arrangements

2.4.1 The total project cost, net of taxes and customs duties, including a 4.5% provision for physical contingencies and another 4.5% provision for price escalation, is estimated at EUR 199.14 million, equivalent to UA 159.06 million when the project was appraised. The project cost by component, source of financing and expenditure category, as well as the estimated disbursement schedule, are provided in the tables below.

Components	Foreign Exchange	Local Currency	Total Cost	Foreign Exchange %
1. Strengthen and extend the power				
transmission network	78.03	42.01	120.04	65%
2. Rural electrification	2.97	4.45	7.42	40%
3.Institution building	1.99	1.01	3.00	66%
4. RAP and ESMP implementation	0.00	10.59	10.59	0%
5. Project management	1.52	3.35	4.88	31%
Total base cost	84.51	61.42	145.92	58%
Physical contingency (4.5%)	3.80	2.76	6.57	58%
Price escalation (4.5%)	3.80	2.76	6.57	58%
Total project cost	92.11	66.94	159.06	58%

 Table 2-3: Estimated Cost by Component (UA million)

Sources of Financing	Foreign Exchange	Local Currency	Total Cost	Foreign Exchange %
ADF	6.19	3.46	9.65	6.1%
TSF	10.32	7.85	18.17	11.4%
EU	12.76	10.27	23.03	14.5%
EIB (parallel financing)	41.81	22.51	64.32	40.4%
KOEXIM (parallel financing)	21.02	11.32	32.34	20.3%
GOM	0.00	11.54	11.54	7.3%
Total project cost	92.11	66.94	159.06	100%

Table 2-4: Sources of Financing (UA million)

Table 2-5: Project Cost by Expenditure Category (UA million)

Expenditure Category	Foreign Exchange	Local Currency	Total Cost	Foreign Exchange %
Goods	0.00	0.24	2.24	0%
Services	3.51	2.12	5.63	62%
Works	81.00	57.06	138.05	59%
Operation	0.00	2.00	2.00	0%
Total base cost	84.51	61.42	145.92	58%
Physical contingency	3.80	2.76	6.57	58%
Price escalation	3.80	2.76	6.57	58%
Total project cost	91.49	66.94	159.06	58%

Table 2-6: Expenditure Schedule by Component (UA million)

Components	2020	2021	2022	2023	2024
1. Strengthen and extend the power	6.00	24.01	36.01	36.01	18.01
transmission network					
2. Rural electrification	0.37	1.48	2.23	2.23	1.11
3. Institution building	0.45	0.90	0.75	0.45	0.45
4. RAP and ESMP implementation	3.18	4.23	3.18	0.00	0.00
5. Project management	0.73	1.46	1.22	0.73	0.73
Total base cost	10.73	32.09	43.38	39.42	20.30

2.5 Project Area and Beneficiaries

2.5.1 PRIRTEM I crosses three (3) regions in eastern Madagascar covering five (5) districts, 26 municipalities and 77 Fokontany^{2.} The features of the project area are presented in Table 2-7.

				Population and Labour Force Breakdown by Gender				
Region	District	Municipalities	Fokontany	Population (2013)	W (%)	M (%)	Avg. Nbr of Persons per Household	
A 1	Antananarivo Avaradrano*	3	7	343 232	50.1	49.9	5	
Anaramanga	Manjakandrian a	5	13	210 570	50.1		5	
Alaotra Mangoro	Moramanga*#	8	23	298 433	47.4	52.6	5	
Atsinanana	Brickaville*#	7	28	181 821	517	40.2	4	
	Toamasina II*	3	6	286 185	31.7	40. 3	4	
TO	TAL	26	77	1 320 241	49.7	50.3	4.6	

Table 2-7: Number of Municipalities and Fokontany Covered by PRIRTEM-1

* Four (4) substations will be installed in the following municipalities: Ankadikely Ilafy (District Antananarivo Avaradrano), Ambohibary (District Moramanga), Mahatsara (District Brickaville) and Amboditandroroho (in Tamatave District II).

Three (3) municipalities will be electrified under PRIRTEM-1: Morarano Gara in the Moramanga District as well as Mahatsara and Brickaville in the Brickaville District.

² Traditional Malagasy village

2.5.2 The urbanisation rates in the Analamanga and Atsinanana Regions are 41.2% and 23.8%, respectively. This is higher than the national average of 20.3%. Alaotra Mangoro is below the national average with 16.4% of the population living in urban areas. Agriculture is the predominant activity in the project area, particularly the cultivation of eucalyptus (18.8%), lychee (17.8%) and rice (15.1%). Only 5% of the households practise fishing, while 75% raise livestock (mainly sheep) in addition to agriculture. Hunting does not seem to be practised on a large scale in the project area.

2.5.3 The population has low levels of education and poor health facilities. The villages are very remote because of the poor condition of the secondary roads. Only 8% of households are connected to the JIRAMA network. The need for rural electrification is crucial. Madagascar is one of the countries with the lowest energy access rates in the world.

2.5.4 The main beneficiary of PRIRTEM-1 is JIRAMA, which will operate the 225-kV line and the distribution networks to be built. ADER will also be the direct beneficiary of Component 2.2 aimed at developing mini-grids, while urban and rural communities will benefit from better electricity service and access to power, especially in areas that are completely isolated and remote from interconnected networks. Beneficiaries also include individuals, especially women, who will have access to jobs created and new businesses established as a result of the project.

2.6 Participatory Approach for Project Identification, Design and Implementation

2.6.1 JIRAMA and the consulting firm are already in consultation with the main stakeholders involved in the project (communities, customary authorities, civil society, central and decentralised administrations, development partners, etc.).

2.6.2 Apart from the consultations undertaken by GoM and JIRAMA to identify PRIRTEM-1 project priorities, further discussions with the communities, fokontany, project-affected persons (PAPs) and various stakeholders such as NGOs were conducted during the preparation of the Environmental and Social Impact Assessment (ESIA) and the Resettlement Action Plan (RAP). Extensive consultations were held at the national, regional and local level to present the programme, obtain and integrate the views as well as concerns of various stakeholders in the project design as well as identify the impact mitigation measures to adopt for the project. The first round of public consultations (initial public consultations – IPC) was held between 4 and 25 May 2019 in 68 fokontany and 26 municipalities. The final public consultations (FPC) took place in August 2019 in the districts crossed by the line. The procedures for calculating compensation and the complaint management mechanism were then presented.

2.6.3 Overall, the project has been very well received. Municipalities and fokontany want to have access to electricity but are generally concerned about the modalities of financial compensation for resettlement and measures taken to prioritise the hiring of local labour. They have also expressed specific concerns about measures to mitigate negative environmental and social impacts. These are detailed in the ESMP and RAP and will be implemented during the construction and execution phase.

2.6.4 Consultation and collaboration with all stakeholders, including PAPs and NGOs, is an ongoing process that will be pursued throughout the project duration. A grievance mechanism has been put in place to ensure that any potential complaints that may arise during project implementation are quickly addressed.

2.7 Bank Group Experience and Lessons Reflected in the Project Design

2.7.1 From the start of its operations in Madagascar in 1977 to 30 September 2019, the Bank has approved 95 operations for a cumulative UA 1.36 billion, or approximately USD 1.9

billion. The current portfolio as of 30 September 2019 includes 18 transactions for a total committed amount of UA 267.05 million, equivalent to USD 364,079. Of the 18 projects, 17 are national and one (1) regional. The portfolio covers three sectors: transport (52.7%), agriculture (37.5%) and governance (7.1%). The remaining resources are divided between the social sector (0.1%), the environment (0.7%), the energy sector (0.4%), the water and sanitation sector (0.8%) and the finance sector (0.6%). There are no aged or problematic projects. The low disbursement rate (33.7%) is due to the relatively young age of the portfolio, with four (5) new operations effective since November 2018, under all of which the first disbursement has been made. The main lessons from the Bank's intervention in Madagascar are the need to reduce delays related to the (i) ratification of loan/donation and procurement agreements; (ii) establishment of steering committees and project teams; (iii) opening of accounts at the Central Bank; and (iv) mobilisation of financial resources for implementing the ESMPs and RAPs. This project has taken these lessons into account, in particular: (a) the prior existence of a PIU dedicated to PRIRTEM; and (b) the inclusion of the budgets for ESMP and RAP implementation in the 2020 Finance Act.

2.7.2 In accordance with the recommendations of CSP 2017-2021, efforts were also made to properly prepare the project using the UA 1 million financing from the Project Preparation Fund (PPF), in a bid to improve quality at entry and avoid implementation delays. Measures are also being taken under the project to build the PIU capacity, particularly in the fiduciary, E&S and technical areas, and to set up an expanded steering committee to provide appropriate guidance to the PIU (see paragraph 5.2.5).

2.7.3 Furthermore, to contribute directly to the reduction of poverty and disparity in the country, project Component 3 will provide institution building to build entrepreneurial capacity in the project area, with a view to promoting the creation of high value-added jobs.

2.8 Key Performance Indicators

2.8.1 The project's key performance indicators are as follows:

- i. The number of kilometres of 225 kV line and distribution line completed;
- ii. The number of transformer stations completed;
- iii. The number of connections made in the project area, including the percentage of women with electricity metres;
- iv. The hydropower generation capacity;
- v. The number of direct jobs created during project implementation; and
- vi. The number of new businesses created in the project area.

2.8.2 These indicators will be monitored in the progress reports prepared by contractors, consultants, the PIU, ARELEC, MEEH and ADER as well as the publications and statistics of the Ministry of Energy.

3 PROJECT FEASIBILITY

3.1 Economic and Financial Performance

3.1.1 The financial (FIRR) and economic (EIRR) internal rates of return, the financial (FNPV) and economic (ENPV) net present values were calculated using the cost-benefit method for both project execution and operation. The financial benefits taken into account include the increase in electricity sales following a rise in the quantity of energy in the JIRAMA grid, the electrification of localities along interconnection lines and savings on fuel purchases due to the commissioning of hydropower plants. The related costs mainly concern the capital (CAPEX), infrastructure operation and maintenance cost (OPEX), and the additional distribution costs for JIRAMA.

3.1.2 *Financial Performance:* The analysis covers 30 years, corresponding to the amortisation period of the facilities. The positive NPV of EUR 12 million and the 12% FIRR, which is significantly higher than the 10% opportunity also used as the discount rate, show that the project is financially sustainable.

3.1.3 *Economic Performance:* The completion of PRIRTEM-1 will not only expand the national grid but will also increase Madagascar's power generation capacity by integrating major hydropower developments on the drawing board, which will significantly reduce the use of petroleum products for power generation. As such, besides the benefits considered when analysing the financial profitability, the CO2 emissions avoided in electricity production following the construction of the PRIRTEM-1 interconnection network were also factored in to determine the project's economic value. Economic costs (CAPEX and OPEX) are net of taxes. The analysis covers 30 years. At a 10% discount rate, the result is an NPV of EUR 1.13 million and an IERR of 52%. These results indicate that the project's expected economic benefits are positive and that the resources allocated will be used effectively.

Baseline scenario	FIRR	82`%				
	NPV	EUR 12 million				
	EIRR	52%				
	ENPV	EUR 1.13 million				

Table 3-1: Project's Key Economic and Financial Data

3.1.4 *Sensitivity Analysis:* A sensitivity analysis was conducted to measure the potential impacts of an increase in investment cost on project profitability. The results of those tests show that the project's financial and economic sustainability will be maintained in the event of a 10% increase in project costs. In such a case, the financial and economic rates of return would remain at 78% and 48%, respectively. The net present values also remain very positive with EUR 11.8 million and EUR 1.11 million, in that order. Moreover, the project's economic sustainability was tested in view of the non-valuation of CO2 emissions. A scenario without CO2 valuation would give an FNPV of EUR 0.65 million and an EIRR of 37%. Therefore, the project's financial and economic sustainability would be maintained even if project costs were to increase or the economic impacts of reducing CO2 emissions as a result of the project were not considered.

3.2 Environmental and Social Impact

3.2.1 Project Categorisation and Complete E&S Studies

3.2.2 PRIRTEM-1 comprises the interconnection of RIA and RIT through the construction of a 220-kV double-circuit line of 267 km between Antananarivo and Toamasina with a 40 m easement, and the electrification of 3 municipalities (Morarano Gara, Mahatsara and Brickaville). The line will connect 4 new substations (Tana Nord 2, Ambohibary, Antsampana, Tamatave). The surface areas of the substations vary between 0.8 and 1.7 ha. In accordance with the Bank's Integrated Safeguards System (ISS) and the Environmental and Social Assessment Procedure (ESAP), the project type (>110 kV) and its environmental and social impacts have been classified under Category 1. The project's ESIA with an ESMP and RAP were prepared in compliance with Malagasy regulations and ISS requirements. The ESIA, ESMP and RAP summaries were prepared by the project promoter and published on the Bank's website on 28 June 2019. The process of obtaining the environmental project permit is underway in Madagascar. The ESIAs of the mini-grids will be conducted by ADER with the necessary support in accordance with the Bank's requirements and the country's regulations.

3.2.3 Main Environmental and Social Impacts

3.2.4 The ESIA prepared for the project identified several potentially positive and negative project impacts. The major positive impacts are linked to (i) the strong anticipated development

at both regional and national level for all the communities that will be connected to the network and mini-grids; and (ii) the creation of economic opportunities for the local communities.

3.2.5 The negative environmental impacts include: (i) accelerated soil erosion in works rights-of-way, particularly in steep areas subject to land clearing and grubbing, and on river banks; (ii) landscape degradation; loss of vegetation cover and sensitive wildlife habitats, including the loss of 91 ha of forest habitats (excluding Protected Areas) with endangered wildlife and the localised loss of surrounding buffers; (iii) loss of habitat and disruption of sensitive protected fauna in protected/sensitive areas (over more than a dozen kilometres) within the Ankeniheny-Zahamena forest corridor, in the Maromizaha Forest Buffer Zone (NAP) as well as on the edge of Analamazoatra National Park (of the 131 ha of forests identified in the project area, 127.27 ha are located outside the protected areas. Approximately 13.41 ha of the 127.27 ha, have been identified as critical habitats); (iv) the risk of mortality for some bird species and primates in the Maromizaha and Analamazoatra protected areas; (v) forest habitat fragmentation, particularly in the Ankeniheny-Zahamena corridor; (vi) the risk of invasive plant species; and (vii) increased mortality for avifauna and primates (collision and electrocution). The stakes are higher in migration corridors and riparian areas.

3.2.6 The negative social impacts include: (i) disruptions to the living environment and the risk of accidents for residents during construction works; (ii) loss of land use and property (at the locations of pylons, access roads and the 40 m corridor), depletion of certain resources and relocation of people from the right-of-way; and (iii) personal safety in the line corridor. Negative impacts during the operational phase include landscape and visual impacts, generation of waste from maintenance operations, impacts on birdlife and poaching.

3.2.7 Environmental and Social Management Plan (ESMP)

3.2.8 Improvement and mitigation measures have been developed for each of these impacts, be they positive or negative, and documented in the Environmental Management Plan (EMP), which includes specialised plans, such as those for biodiversity and sensitive habitat management. EUR 1.3 million (excluding builder's E&S management measures) has been budgeted for the effective implementation of the ESMP. The allocations include the costs of monitoring/operating the E&S component at the PIU level, awareness campaigns, environmental and social monitoring during the construction phase and implementation of a biodiversity and sensitive habitat management plan.

3.2.9 Main impacts of Resettlement (Physical and Economic Displacement)

3.2.10 PRIRTEM's implementation will have both short- and long-term socio-economic impacts, including physical (e.g. loss of homes, farmland) and economic displacement (loss of several types of socio-economic assets and property, loss of food and perennial crops). The fact of having avoided urban areas has led to a preference for a layout in rural areas. As a result, many agricultural lands are located within the right-of-way.

3.2.11 Based on the detailed surveys conducted as part of the RAP preparation, the census identified 7,850 PAPs from 937 households. The types of impacts included: loss of main residence (130), ancillary buildings (199) and commercial buildings (7); restrictions on use or loss of land on agricultural plots (615), loss of income from perennial and annual crops (777) and impacts on vulnerable people (124 elderly people, 27 disabled people, 87 orphans, 54 widowers/widows).

3.2.12 To minimise the impacts of resettlement on vulnerable groups, a gender expert and an independent lawyer will be assigned to the PIU to promote equal compensation according to gender, especially for households with a couple, whether or not they are married under a civil contract.

3.2.13 The total cost of implementing the Resettlement Action Plan (RAP), including the cost of support measures for vulnerable people and restoration of livelihoods, is estimated at EUR 11.4 million.

3.2.14 Climate Change

3.2.15 The project is classified under Climate Risk Category 2 (AfDB Climate Safeguards System), which is potentially vulnerable to the impacts of climate change and requires the adoption of climate risk mitigation measures.

3.2.16 Vulnerability context - The main identified risk is infrastructure vulnerability (particularly pylons and substations) to the frequency and intensity of cyclones/storms. The estimated probability that strong winds likely to cause damage will occur over the next 10 years is estimated at 20%. Winds have proven to account for more than 68% of tropical cyclone losses, while storm surges and associated floods account for 20% and 12% of these losses, respectively.

3.2.17 Adaptation - The project will incorporate measures for improving the resilience of structures to climate risks. Wind velocity levels impacted the pylon design - 230 km/h for coastal areas and 175 km/h for inland areas. A 100-year return period was considered. Furthermore, the choice of design and technology to be used for power transformers and electrical installations was determined based on the analysis of temperature levels.

3.2.18 Climate-related risks studied in the ESIA are presented in the table below:

	Districts				
Risk	Antananarivo	Manjakandriana	Moramanga	Brickaville	Toamasina II
Non-urban flooding	High	Very low	Low	Moderate	Moderate
Urban flooding	High	Very low	Low	Very low	High
Coastal flooding	Very low	Very low	Moderate	Moderate	Moderate
Cyclone	High	High	High	High	High
Forest fires	High	High	Moderate	Moderate	Moderate
Tsunami				Moderate	Moderate
Volcano eruption	Moderate	Moderate	Very low		
Extreme heat	Very low	Very low	Moderate	Moderate	Moderate
Earthquake	Low	Low	Low	Low	Very low
Water shortage	Very low	Very low	Very low	Very low	Very low

Table 3-2: Climate Risks Identified

3.2.19 Improving the socio-economic resilience of infrastructure is one of the objectives set by Madagascar's Determined Contributions under the Paris Climate Agreement (2015). Minimal GHG emission levels3 will occur during the construction phase. Once operational, the infrastructure will facilitate the deployment of renewable or fossil energy.

3.2.20 Genre

3.2.21 The project is classified as GEN II under the Gender Marker System (GMS) since at least one of its impacts contributes to reducing gender inequalities in the project area. PRIRTEM-1 will have a positive effect on gender equity in the project area. Improving access to energy will reduce the time spent on domestic activities and increase the development of small-scale female entrepreneurship.

3.2.22 However, PRIRTEM-1 has two main negative impacts that may exacerbate gender inequalities during the implementation phase. First, there will be an influx of workers from neighbouring towns, which may lead to sexual violence against women residing on the site and, consequently, a potential increase in the number of STDs and unwanted illegitimate children. Secondly, the resettlement caused by the project may have a negative impact on

³ Not quantified due to lack of data

women as the financial compensation mechanism will only cover heads of households who are predominantly male, except for widowed women (only 39 identified in the corridor). The reported risk is the use of financial compensation for purposes other than resettlement, including investment in non-productive property or recreational activities. The major negative impact during the operational phase is the lengthening of women's working days due to having electricity at home. Moreover, studies have shown that the first household appliance investment is a television set and not a potential income-generating device such as a refrigerator or freezer.

3.2.23 However, mitigation and enhancement measures will be put in place to address gender inequalities in the project area in line with the national gender promotion policy and strategic framework. Firstly, awareness campaigns on the use and management of electricity will be conducted to help prevent households from getting into debt with the electricity supplier because of not having an estimate of the cost of electricity consumption for their domestic or professional appliances. Other sensitisation campaigns are planned in the area of reproductive health (family planning, HIV/AIDS, information on abortion cases allowed by law), genderbased violence (including pre-established gender-specific domestic roles) and energy training (universities but also the "Solar Women Engineers" and "Barefoot College" programmes). In order not to aggravate gender gaps in implementing the RAP, a lawyer and a gender expert will be included in the PIU to ensure an equitable distribution between the sexes during the payment of financial compensation.

3.2.24 A training and capacity-building component is planned for women in the primary agricultural sector (agroecological techniques applied to rice fields, cassava and coffee crops) as well as in the tertiary agricultural and energy sectors (agricultural and energy sector entrepreneurship) to promote their inclusion in the energy sector, bearing in mind that 73% of Malagasy women are farmers. JIRAMA plans to develop a gender policy under the public sector employment access component by establishing gender criteria to govern recruitment by entrepreneurs.

3.2.25 Social

3.2.26 The project will produce several positive impacts during the construction and operation phases. The construction phase will entail increased economic activity due to the presence of workers on site and employment opportunities for the local communities. The presence of the interconnection line and the electrification of new rural areas will increase access to power during the operation phase, thereby enhancing economic development in the rural areas. The RIA-RIT interconnection will boost network stability and reduce load shedding, which undermines economic development.

4 IMPLEMENTATION

4.1 Implementation Arrangements

4.1.1 **Project implementation organs.** Given the many challenges facing JIRAMA as it undertakes a major transformation and implements several donor-funded projects, a new PIU will be established under MEEH to oversee the implementation of PRIRTEM-1 and ensure that the human and financial resources deployed for the project are not used for other purposes. This will allow PIU staff to be dedicated to the project and quickly acquire relevant skills to manage project execution independently. In addition, MEEH will be able to ensure better coordination between JIRAMA and ADER.

4.1.2 The PIU will have the necessary technical and management resources to process all activities planned for both the technical and administrative/financial management of the project. The PIU will be led by a project coordinator and will comprise 12 experts. For the technical component, provision has been made to recruit: (i) a civil engineer; (ii) an electromechanical engineer; and (iii) an overhead line engineer. For the monitoring and

implementation of social, gender and environmental issues, the following profiles have been selected: (iv) a biodiversity and environmental protection specialist; (v) a gender and socioeconomic development specialist; (vi) a health, safety, environment and quality specialist; and (vii) a legal counsel. Lastly, the accounting and financial section will comprise the following members: (viii) an administrative and financial officer; (ix) an accountant; (x) a procurement officer; (xi) a procurement assistant; and (xii) a monitoring/evaluation officer. PIU staff, including the coordinator, will be recruited through a competitive process.

4.1.3 Other staff of MEEH, the Ministry of Economy and Finance (MEF), the Ministry of Environment and Sustainable Development (MEDD), the Ministry of Regional Planning, Housing and Public Works (MAHTP), JIRAMA and ADER will be made available to the PIU on an ad hoc basis or seconded from their respective administrations as required by the project. The roles and responsibilities of the mobilised staff will be established in consultation with the project coordinator and the authorised officials of the concerned institutions. The PIU will be supported by two consulting engineering firms - one responsible for works control and supervision, the other to support activities to monitor the RAP and ESMP implementation.

4.1.4 ADER will be in charge of the development of mini-grids, entrepreneurship and gender equality activities in the project area under the implementation of project components 2.2, 3.1 and 3.2. All these activities are scheduled for financing as part of the grant that the Bank will mobilise from the EU. ADER will be able to get support in monitoring the preparation and implementation of three (3) mini-grid projects developed in Public-Private Partnership (PPP), notably to finalise the studies, including ESIAs, and ensure the proper execution of the projects. In addition, ADER will intervein in selecting complementary private operators, providing technical support for the evaluation of detailed sketches and preparing concession contracts. Regarding the component 3.1 and 3.2, ADER will be able to recruit service providers to support in promoting gender equality, training and capacity building for women through entrepreneurship and the development of productive and transformative activities will be utilised.

4.1.5 MEEH will set up a Project Steering Committee (PSC) that will meet regularly to review/adopt the various work plans, budgets, activity and audit reports, evaluate the performance of the PIU, make recommendations and monitor them. In addition to the MEEH representative who will chair this committee and the project coordinator who will be in charge of its Secretariat, the PSC will include representatives of MEF, the Public Debt Directorate, MEDD, MAHTP, the Ministry of Population, Social Protection and Women's Promotion (MPPSP) and JIRAMA. The Electricity Regulation Agency (ORE) will be able to participate in the PSC as observator.

4.1.6 Procurement and Financial Management Arrangements

4.1.7 <u>Procurement Arrangements</u>: Procurement of goods (including non-consultancy services), works and consultancy services, financed or administered by the Bank as part of the project, shall be carried out in accordance with the Procurement Framework for Operations Financed by the Bank Group, October 2015 Edition, and the provisions set out in the financing agreement. Specifically, procurement will use:

i. **The Borrower's Procurement System (BPS):** Procurement methods and procedures (PMPs) under the Borrower's procurement system governed by Law No. 2016-055 of 25 January 2017 on the Public Procurement Code (CMP) will be applied, using standard national bidding documents (DNSAO) or other bidding documents as approved during project negotiations and generally for standard, low complexity and low-value goods contracts, and for operation provided for within the project framework and available on the national market.

ii. **Bank Procurement Methods and Procedures (BPMP):** The Bank's standard procurement methods and procedures, based on the relevant standard bidding documents (SBDs), will be used for works and goods contracts of larger scale and complexity or specialised ones, as well as consultancy service contracts deemed most appropriate and in the event that the use of the Borrower's BPS is not appropriate for a given activity or set of activities in view of the high risks identified that could hinder the effective implementation of project activities.

4.1.8 <u>Procurement Risk Capacity Assessment:</u> The risk assessment at country, sector and project level as well as the procurement capacity of the executing agency was conducted and the results used to guide the decision on the choice of the national procurement system to be used for some project procurements. Appropriate risk mitigation measures will be included in the action plan indicated in paragraph 1. B.5.9 of Technical Annex B5.

4.1.9 It is worth noting that co-financing by the EIB and KOEXIM will be provided for the financing of certain works and capacity building of the Borrower's officials as part of this project. To take the specific conditions of each institution into account, contracts will be organised in separate batches to facilitate the administration of procurement and disbursements. Procurement under their respective financing will be made using the EIB and KOEXIM procurement methods and procedures. The Bank remains the main donor.

4.1.10 <u>Financial Management</u>: In line with the provisions of the Paris Declaration on Aid Effectiveness, the Bank, like most development assistance partners, has agreed to maximise the use of national systems for project and programme management to the extent possible, including financial management. However, in the current context of Madagascar's national public finance management (PFM) system, it will not be effective to use the PFM for the financial management of this project. Consequently, the Bank and Madagascar have decided that the management of project resources will be conducted using a system autonomous from the PFM circuit. In this regard, the programme will be implemented by a PIU at MEEH. Financial management will be the responsibility of the accounting and financial section of PIU.

4.1.11 The administrative and financial officer shall be responsible for all aspects of financial and accounting management under the supervision of the coordinator. An accounting, financial and administrative procedures manual will be prepared for the project. MEEH has experience in the execution of donor-funded projects and the overall fiduciary risk is considered moderate. The project will also acquire accounting software for transaction processing and financial reporting.

4.1.12 <u>Disbursements</u>: Bank resources will be disbursed in accordance with the provisions of the Bank's Disbursement Manual, using (i) the direct payment method (for the payment of service, goods and works contracts); (ii) the reimbursement method in the event of the counterpart pre-financing expenses chargeable to the Bank's resources and previously authorised and approved by the Bank; and (iii) the special account method for operating expenses. As such, and in accordance with the regulations in force in the country, a special account in local currency will be opened with the Central Bank of Madagascar.

4.1.13 <u>Audits</u>: Audits of AfDB-financed projects for the Malagasy portfolio are carried out by private audit firms. Latest six (6) months following project effectiveness, the PIU and the Court of Auditors will be responsible for (i) the recruitment of the audit firm with the support of the project procurement specialist; (ii) the signing of the auditor's contract; (iii) the follow-up of the audit work; and (iv) the submission to the Bank of the audit report within six months of the end of each financial year.

4.1.14 An action plan has been drawn up to provide the PIU with an efficient financial management system to ensure that project resources are used for the intended purposes, that financial monitoring reports are made available on time and that reliable financial information

is provided on a periodic basis. Specifically, this action plan includes: (i) the development of the administrative and financial procedures manual; (ii) the training of the PIU in budget management and the configuration of the accounting software; (iii) the preparation and approval of the work plan and annual project budgets by the PSC within the required deadlines; (iv) the development of a system for filing and archiving accounting documents; (v) the establishment of a mechanism to follow up the recommendations of the TFP auditors or the SC; (vi) the opening of a special account at the Central Bank of Madagascar and a current account in a commercial bank acceptable to the Bank to facilitate disbursement procedures; (vii) the initiation of the auditor recruitment process as soon as the project is launched.

4.2 Monitoring

4.2.1 MEEH and the PIU are primarily responsible for monitoring and evaluating PRIRTEM-1 activities that will be undertaken at the national and local levels in accordance with the project implementation manual. To monitor the implementation of PRIRTEM-1, the PIU will ensure the collection and review of monthly activity reports prepared by contractors and consultants in charge of works supervision. The PIU will also organise site visits to verify the progress of work with the support of MEEH. The PIU will prepare and submit monthly activity reports, as well as quarterly activity reports describing the progress of work in line with the work schedule and indicators adopted in the project results-based logical framework.

4.2.2 The project outcomes and impact indicators will be monitored in the activity reports and financial statements prepared by the PIU, MEEH and in the publications of the National Bureau of Statistics, ARELEC, MEEH, MEF and all relevant stakeholders. The project has also committed to creating several direct, indirect or temporary jobs. A mechanism will be put in place to monitor job creation.

4.2.3 The PSC will meet quarterly to supervise the PIU, offer it strategic guidance, and monitor project performance.

4.2.4 The Bank will review and approve all relevant reports and documents submitted by the PIU and monitor procurement and financial management activities. The Bank will issue its non-objection notice at each relevant step in line with its guidelines. Annual audits will verify that PRIRTEM-1 procurement and financial management are adequate. The Bank may also conduct independent audits as required.

4.2.5 The Bank with the GoM will field up to 2 supervision missions each year and will present a half-yearly report on the status of implementation and outcomes. The reports will be used to establish the necessary actions with the PIU to improve project performance and implementation. A project review will be undertaken at project mid-point. This review will assess progress made in relation to the outputs and outcomes of the logical framework and draw lessons for monitoring operations. Once the project is completed, the project team will prepare the project completion report (PCR) to evaluate progress against the results-based logical framework and to draw lessons for future initiatives.

4.2.6 The annual country portfolio performance review and regular portfolio monitoring will supplement the project monitoring mechanisms.

4.3 Governance

4.3.1 Governance risks concern inefficient use of project resources due to possible shortcomings by actors involved in its implementation. These risks may relate to the procurement process and the quality of infrastructure/works or services. Consequently, specific fiduciary and governance risk mitigation measures will be put in place. The PIU shall produce periodic progress reports. The financial statements and procurement processes will be audited annually by an independent firm. Annual budgets and work plans will be reviewed and

approved by the PSC. Lastly, the consulting engineering firms will ensure that project norms are met.

4.3.2 It is also worth noting that the fight against corruption is a key objective of the Malagasy Government. This commitment is part of the EMP and will be implemented through the National Anti-Corruption Strategy (SNLCC) 2015-2025.

4.3.3 State capacity building, effective institution building and the promotion of inclusive growth remain at the centre of measures to contain the effects of fragility and build greater resilience. The elements of fragility to which Madagascar is not immune include, among others: (i) lack of basic road infrastructure to facilitate trade; (ii) limited economic opportunities; (iii) vulnerability to natural disasters and climate change (droughts, cyclones, and floods); (iv) weak institutions and governance issues; (v) the high incidence of poverty; and (vi) gender inequality. The project will contribute to addressing these causes of fragility by strengthening the power transmission networks to reduce electricity costs, promote economic competitiveness and improve the people's quality of life. In addition, the MDG has undertaken several reforms to strengthen governance, transparency and accountability.

4.3.4 Risks to project governance could arise from decisions related to contracting and the use of project resources. These risks will be mitigated through the governance structures put in place, financial management, procurement procedures and monitoring systems built around project implementation. The PIU shall produce periodic progress reports on the project and financial statements audited by external auditors. The Bank will monitor governance issues through annual works and budgets, project implementation and progress reports, supervision missions, procurement plans and audit reports.

4.4 Sustainability

4.4.1 PRIRTEM was initiated following a request from GoM to AfDB for a pre-feasibility study. Thus, on 12 February 2018, a loan of UA 1 million was signed as advanced funding under the Project Preparation Facility (PPF). JIRAMA, the main project owner, set up a project preparation unit that immediately started the procedures for the recruitment of a consulting firm to conduct studies on all project components. For the financing of the first phase of the project (PRIRTEM-I), GoM submitted requests to the financial institutions that had expressed their willingness to support this project, including KOEXIM, EIB and AfDB. To ensure an efficient organisation for project implementation and monitoring, MEEH supported the proposal by the project team to link the PIU coordination to this ministerial department. During meetings to prepare and evaluate the project, GoM, through various public institutions working for the sector (JIRAMA, ARELEC, ADER, ONE, MEDD, MEF, MEEH), was widely represented, demonstrating its firm desire to be involved in its implementation.

4.4.2 To ensure the sustainability of project achievements, MEEH proposed to integrate the training of JIRAMA staff on new technologies generated thanks to the implementation of PRIRTEM into its activities, among others. The training will enable them to take better ownership of the project and ensure the availability of local technical skills for future transmission line projects. Furthermore, GoM developed a programme in 2018 for the Least Cost Electricity Access Development (LEAD). LEAD specifically provides for the availability of the interconnection line between RIA and RIT for the extension of transmission networks and the integration of major hydropower projects (Sahofika, Volobe). In the context of the ESMP and RAP implementation, GoM, through MEEH, presented its commitment to cover the costs of compensation for project-affected persons (PAPs) and to monitor/evaluate related activities.

4.5 Risk Management

4.5.1 The project implementation risks identified are as follows:

Risks	Mitigation Measures
Payment of environmental compensations/permits: Given GoM's limited financial resources, the implementation of the RAP and the granting of environmental permits could take longer than scheduled and cause delays in project execution. GoM's equally limited capacity in ESMP and RAP implementation could also delay project execution.	Based on the estimates of the ESIA consultant, MEEH and MEF plan a budget line dedicated to the ESMPs and RAPs implementation in the GoM 2020 annual budget to be adopted in November 2019. The project also plans to support the ESMP/PAR implementation (dedicated experts).
Introduction of new technology in the JIRAMA network: PRIRTEM will create a new operating voltage (220 kV) that does not exist on current JIRAMA networks. Therefore, new generation equipment (digital) will come with the new infrastructures.	The project will include training activities for operating and maintaining these new facilities, and reviewing JIRAMA's organisational structure.
<u>Road transport network capacity:</u> Madagascar's road network capacity is limited to 50 tonnes, which restricts the weight of some equipment, especially power transformers.	The studies take into account the limited 50-tonne capacity of the road network in the design of the facilities and equipment specifications (transformers will weigh less than 50 tonnes).
<u>Climate change:</u> Madagascar is exposed to extreme winds caused by cyclones. These climatic conditions can damage infrastructure in the short term once after commissioning, particularly the high- voltage line.	The infrastructure is sized to withstand acceptable extreme conditions. The consultant will ensure that the long-term impact of climate change is also taken into account in the design of the structures.
Overlap of JIRAMA/ADER concessions: There is a high risk of overlap between JIRAMA's concessions and ADER private operators in the PRIRTEM area. The current regulatory framework is not always followed or respected.	Through the new PIU. GoM will provide necessary coordination for the signing of concession agreements between JIRAMA and ADER's private operators. A new Electricity Code has also been adopted and effective. The implementing decrees are awaiting promulgation.

4.6 Knowledge Building

4.6.1 Training sessions on Bank rules and procedures for procurement, disbursement and financial management, and E&S management will be provided to PIU staff at project inception and, if necessary, during supervision missions. In addition, awareness campaigns on electrical safety and consumption control for the population concerned by the project will be organised as part of PRIRTEM-1 during and after the work is completed.

4.6.2 PRIRTEM-1 also provides for training for MEF, MEEH and JIRAMA staff. This will include training staff in new technologies introduced by the project (new voltage level and the digital network monitoring system).

4.6.3 The project will strengthen ADER's capacity for technical, economic and financial analysis, monitoring and evaluation of mini-grid projects. Technical capacity building activities for key actors (MEEH, ADER and private operators) are also planned. These may cover specific technical subjects (works sizing, operation and maintenance, support for the connection marketing strategy).

4.6.4 The support of consulting engineering firms in project implementation will enable PIU staff and other stakeholders to quickly acquire expertise in supervising the works. Works implementation will also expose project stakeholders to best practice in the construction of overhead lines and transformer substations, and to the realities of major infrastructure projects. Information meetings and training sessions, as well as the twinning of local and international staff, will be organised to ensure knowledge transfer.

4.6.5 It should also be noted that AfDB is currently financing PRIRTEM studies, the

deliverables of which will enable GoM to mobilise the necessary financing for the interconnection of Madagascar's major networks.

4.6.6 The knowledge acquired as part of the project will be disseminated through various reports produced (progress, financial audit, procurement audit). In addition, the Bank will produce supervision reports, a completion report, and an evaluation report. Lessons from project implementation will enable the Bank to better structure future operations in the country and the sector.

5 LEGAL FRAMEWORK

5.1 Legal Instrument

- 5.1.1 The financing instruments selected are:
 - a) A loan agreement between the ADF and the Republic of Madagascar (the "Borrower") for a loan of UA 9.65 million;
 - b) A loan agreement from the resources of the TSF Supplementary Support Window (Pillar I) between the ADF and the Bank acting as the TSF administrators, on one side, and the Republic of Madagascar, on the other, for a loan of UA 18.17 million.

5.2 Conditions for the Bank's Involvement

5.2.1 Conditions precedent to entry into force of the loan agreements

The entry into force of the loan agreements shall be subject to the Borrower fulfilment of the conditions set out in Section 12.01 of the General Conditions Applicable to Loan Agreements and Guarantee Agreements of the African Development Fund, to the satisfaction of the Fund.

5.2.2 <u>Conditions precedent to the first disbursement of loans</u>

In addition to the entry into force of the loan agreements, the first disbursement of resources for these loans is subject to the Borrower fulfilling the following conditions to the satisfaction of the Fund and the Bank, as applicable:

- a) The submission of a subsidiary agreement duly signed between JIRIMA and the Borrower, satisfactory to the Fund in form and substance;
- b) The submission of evidence for the inclusion of the Borrower's counterpart contribution in the 2020 Finance Act;
- c) The submission of supporting documents for the establishment of the PIU within the executing agency;
- d) The submission of evidence for the recruitment of key PIU staff, especially including: (i) a project coordinator; (ii) a legal counsel; (iii) an administrative and financial officer; and (iv) a procurement specialist, whose qualifications and terms of reference would have been deemed acceptable by the Fund.

5.2.3 <u>Conditions precedent to disbursement for works requiring resettlement</u>

The obligation of the Fund and the Bank, as applicabe, to disburse resources and loans for works involving resettlement is subject to the Borrower fulfilling the following additional conditions to the satisfaction of the Bank/Fund:

a) Submit a work and compensation schedule prepared in accordance with the Comprehensive Resettlement Plan (CRP) and Fund/Bank Safeguards Policies satisfactory to the Fund/Bank in form and substance, detailing: (i) each project work area; and (ii) the timeframe for compensation and/or resettlement of all PAPs for

each area; and

- b) Provide satisfactory evidence that all PAPs in the work area have been compensated and/or resettled in accordance with the ESMP, the CRP and/or the Works and Compensation Schedule as agreed, and in line with the Fund/Bank Safeguards Policies, prior to the commencement of such work and, in any event, before the displacement and/or acquisition of the land and/or related assets belonging to PAPs; or
- c) If the compensation and/or resettlement could not be completed in accordance with paragraph (b) above, provide satisfactory evidence that the resources allocated for the compensation and/or resettlement of PAPs have been deposited in a dedicated account acceptable to the Fund/Bank or deposited with a trusted third party acceptable to the Fund/Bank, where the Borrower can prove to the satisfaction of the Fund/Bank that the compensation and/or relocation of PAPs, pursuant to paragraph (b) above, could not be completed in whole or in part, for the following reasons:
 - The identification of PAPs by the Borrower is not feasible or possible;
 - There are ongoing disputes involving PAPs and/or affecting the compensation and/or resettlement exercise or;
 - Any other reason beyond the Borrower's control, as discussed and agreed with the Fund/Bank.
- 5.2.4 Other conditions and undertakings.
- i. In addition, the Borrower undertakes to act as follows, latest six (6) months following the first disbursement of loan resources:
 - a) Present evidence to the Fund of the recruitment of key specialists in the Executing Agency, whose qualifications and experience would have been deemed satisfactory by the Fund (paragraph 4.1.2.);
 - b) Procure and configure the integrated accounting management software and train the PIU financial management staff to use the software (paragraph. 4.1.14);
 - c) Present evidence to the Fund of preparing the project administrative, financial and accounting manual, in accordance with recommendations by the Fund (paragraph 4.1.14); and
 - d) Set up the Project Steering Committee (PSC) comprising representatives of structures involved in project implementation (paragraph 4.1.5).
- ii. The Borrower undertakes to:
 - a) Show evidence of the recruitment of an external audit firm by the project (paragraph 4.1.13);
 - b) Show evidence of EU's approval of project financing or submit satisfactory evidence of obtaining other resources to fill the financing gap created by the absence of EU co-financing (paragraph 1.3.2);
 - c) Show evidence, at the latest by 30 June 2021, of the adoption by the Council of Ministers of a decree acceptable to the Fund in terms and substance, declaring of public interest the plots of land and/or assets owned by the PAPs that will be subject to expropriation as part of the project implementation;
 - d) Show evidence, as works progess, of the registration with the competent authorities of the servitude contracts in favour of the Borrower encumbering the PAPs lands, and thus providing publication and enforceability of such servitudes;
 - e) At the latest by 31 March every year, show evidence of inclusion of the Borrower's counterpart contribution in the annual Finance Act for the year concerned, in accordance with the Borrower's cashflow plan prepared based on the project

disbursement schedule approved by the Fund.

5.3 Compliance with Bank Policies

5.3.1 The project complies with all applicable Bank policies.

6 CONCLUSION AND RECOMMENDATION

6.1.1 To finance this project and under the conditions set out in this report, Management recommends that: :

- a) the Board of Directors of the Fund approve an ADF loan of UA 9.65 million to the Republic of Madagascar; and
- b) the Boards of Directors of the Bank and the Fund approve a loan of UA 18.17 million loan from the resources of the TSF Supplementary Support Window (Pillar I) to the Republic of Madagascar.

Annex I - Country Comparative Socio-economic Indicators

A table of comparative socio-economic indicators should be developed for this annex (if possible, the main indicators should be disaggregated by gender)

Indicators	Unit	2010	2014	2015	2016	2017	2018 (e)	2019 (p)
National Accounts								
GNI at Current Prices	Million US \$	8,853	10,372	10,179	9,966	10,245		
GNI per Capita	US\$	419	440	420	400	401		
GDP at Current Prices	Million US \$	8,730	10,674	9,741	10,001	11,474	11,833	12,784
GDP at 2000 Constant prices	Million US \$	5,044	5,542	5,738	5,969	6,220	6,529	6,878
Real GDP Growth Rate	%	0.7	3.3	3.5	4.0	4.2	5.0	5.4
Real per Capita GDP Growth Rate	%	-2.1	0.5	0.8	1.3	1.4	2.2	2.6
Gross Domestic Investment	% GDP	23.4	15.6	13.1	15.3	15.9	17.1	17.9
Public Investment	% GDP	5.0	3.9	3.5	5.2	6.3	7.1	8.0
Private Investment	% GDP	18.4	11.6	9.6	10.0	9.6	10.1	9.8
Gross National Savings	% GDP	13.2	15.3	11.2	15.8	12.5	13.5	15.0
Prices and Money								
Inflation (CPI)	%	9.3	6.1	7.4	6.7	8.3	7.7	7.1
Exchange Rate (Annual Average)	local currency/US\$	2,090.0	2,414.8	2,934.4	3,176.5	3,116.1	3,314.7	3,473.3
Monetary Growth (M2)	%	9.9	5.8	16.5	18.1	15.0		
Money and Quasi Money as % of GDP	%	33.8	32.5	34.1	36.3	37.1		
Government Finance								
Total Revenue and Grants	% GDP	13.2	12.4	11.8	15.4	14.8	15.4	14.8
Total Expenditure and Net Lending	% GDP	14.0	14.7	15.1	17.5	17.2	17.6	18.6
Overall Deficit (-) / Surplus (+)	% GDP	-0.9	-2.3	-3.3	-2.1	-2.4	-2.3	-3.8
External Sector								
External Sector	0/	0.0	0.2	7 1	1.2	0 E	0.0	6.0
Imports Volume Crowth (Goods)	70 0/	-9.0 13.4	0.J	7.1	1.3	-0.0	-0.0	0.2
Torms of Trade Crowth	78 9/_	-13.4	12.0	-7.0	19.7	11.3	1.0	1.5
Current Account Balance	Million LIS \$	-845	-34	-7.5	57	-36	-1.0	-425
Current Account Balance	% GDP	_9 7	-03	-19	0.6	-0.3	-2.0	-3.3
External Reserves	months of imports	29	2.4	29	3.8	3.3	3.0	0.0
		2.0		L.0	0.0	0.0	0.0	
Debt and Financial Flows								
Debt Service	% exports	20.6	20.2	20.8	19.0	15.0	13.0	11.3
External Debt	% GDP	38.1	41.2	44.9	42.4	38.1	36.5	36.9
Net Total Financial Flows	Million US \$	999	565	640	637	851		
Net Official Development Assistance	Million US \$	477	588	677	622	780		
Net Foreign Direct Investment	Million US \$	808	351	517	541		<u></u>	



Source : AfDB Statistics Department: African; IMF: World Economic Outlook,October 2018 and International Financial Statistics, October 2018; AfDB Statistics Department: Development Data Portal Database, October 2018. United Nations: OECD, Reporting System Division.

Notes: ... Data Not Available (e) Estimations (p) Projections

Last Update: March 2019

Annex II - Table of AfDB Portfolio in the Country as of 13th November 2019

The appropriate information must be provided in the table (see template). For each project, indicate the performance evaluation.

N	Division	Project name	Sector	Approval Date	Amount (UC M)	Disbursement Rate	Age
1	RDGS2	PROJECT FOR AN INTEGRATED AGRO-INDUSTRIAL GROWTH POLE IN THE SOUTH	Agriculture	11/10/2017	1,000,000.0	35.3	2.1
2	PDCS4	MID-WEST NASCENT RURAL ENTERPRISES PROJECT	Agriculture	9/23/2015	16,610,000.0	32.6	4.2
2	KDG54	(PROJERMO)	Agriculture	9/23/2015	8,000,000.0	9.7	4.2
		PROGRAM FOR PROMOTING YOUTH	Agriculture	1/11/2018	700,000.0	9.0	1.9
3	RDGS2	ENTREPRENEURSHIP IN AGRICULTURE AND AGRO- INDUSTRY (ENABLE YOUTH) P1	Agriculture	1/11/2018	4,300,000.0	39.5	1.9
4	DDCS4	BAS MANGOKY SCHEME EXTENSION PROJECT -	Agriculture	11/26/2014	16,140,000.0	52.4	5.0
4	KDG54	PHASE II (PEPBM)	Agriculture	11/26/2014	24,000,000.0	49.6	5.0
		COUTH WEST ACRICHTTUDAL INFRASTRUCTURE	Agriculture	6/19/2013	18,300,000.0	78.4	6.5
5	RDGS4	DELLA DILITATION DEOLECT (DELASO)	Agriculture	6/19/2013	6,500,000.0	79.9	6.5
		REHABILITATION PROJECT (PRIASO)	Agriculture	6/19/2013	4,566,502.6	64.6	6.5
			Agriculture Total		100,116,502.6	51.1	4.4
6	RDGS2	PROTECTED AREA AND ECOTOURISM DEVELOPMENT PROJECT STUDY	Environment	5/24/2018	1,000,000.0	14.5	1.5
7	AHFR2	DISASTER RISK MANAGEMENT SUPPORT PROJECT	Environment	5/30/2019	1,500,000.0	0.0	0.5
			Total Environment		2,500,000.0	5.8	0.5
0	ECCE	INVESTMENT DROMOTION SUDDORT DROJECT (DADI)	Multi-Sector	7/9/2015	4,000,000.0	30.2	4.4
0	ECGF	INVESTMENT PROMOTION SUPPORT PROJECT (PAPI)	Multi-Sector	7/9/2015	3,000,000.0	23.6	4.4
9	RDGS4	SUPPORT FOR CAPACITY BUILDING AND PROMOTION OF BLUE ECONOMY	Multi-Sector	3/25/2019	1,000,000.0	6.5	0.7
10	RDGS5	SUPPORT FOR THE MOBILIZATION OF PUBLIC REVENUES	Multi-Sector	4/12/2019	1,000,000.0	6.0	0.6
11	ECGF	CONOMIC COMPETITIVENESS SUPPORT PROGRAMME - PHASE II (PACE II)	Multi-Sector	7/20/2018	10,000,000.0	100.0	1.4
			Multi-Secteur Total		19,000,000.0	63.4	2.3
12	RDGS1	PPF- FEASIBILITY STUDY ON THE POWER NETWORK INTERCONNECTION STRENGTHENING PROJECT	Energy	11/21/2017	1,000,000.0	33.0	2.0
			Total Energy		1,000,000.0	33.0	1.2
13	RDGS2	GRANT FOR THE FIGHT AGAINST MEASLES EPEDIMIC	Social	4/4/2019	364,038.8	100.0	0.7

N	Division	Project name	Sector	Approval Date	Amount (UC M)	Disbursement Rate	Age
			Total Social		364,038.8	100.0	1.2
		DOAD INED ASTRUCTURE DEVELORMENT DROJECT	Transport	10/18/2013	33,684,000.0	86.4	6.1
14	RDGS4	(RNQ DON	Transport	10/18/2013	88,000.0	88.5	6.1
		(117),101	Transport	12/14/2012	13,105,396.5	0.0	7.0
			Transport	11/27/2018	8,450,000.0	0.0	1.0
15	PDCS/	MADAGASCAR-INDIAN OCEAN: PROJECT TO	Transport	11/27/2018	22,680,000.0	0.0	1.0
15	KD054	DEVELOP CORRIDORS AND FACILITATE TRADE	Transport	11/27/2018	31,250,000.0	0.0	1.0
			Transport	11/27/2018	31,491,508.5	0.0	1.0
			Total Transport		140,748,905.1	20.7	3.3
16	RDGS2	EMERGENCY ASSISTANCE PROJECT TO COMBAT THE OUTBREAK OF PLAGUE	Water and San	12/13/2017	728,077.6	100.0	2.0
17	RDGS4	MADAGASCAR SDAUM - URBAN SANITATION MASTER PLANS	Water and San.	12/24/2015	1,448,850.4	47.5	3.9
			Total Water and San		2,176,928.0	65.1	3.0
			Grand total		265,906,374.4	35.6	2.9

Annex III - Main related Projects Financed by the Bank and Other Development Partners in the Country

PROJECT NAME	FINANCING
ELECTRICITY SECTOR OPERATIONS AND GOVERNANCE IMPROVEMENT PROJECT (PAGODA)	WORLD BANK (initial and additional financing)
LEAST-COST ELECTRICITY ACCESS DEVELOPMENT (LEAD)	WORLD BANK
JIRAMA ANDEKALEKA HYDRO EXPANSION	EUROPEAN INVESTMENT BANK



Annex IV - Map of the Project Area



Figure 2: Map – Small Hydropower Projects (PAH) and Associated Mini-grids

AFRICAN DEVELOPMENT FUND

BOARD OF DIRECTORS

Resolution N° F/MG/2019/140

Adopted by the Board of Directors on a lapse-of-time basis, on 16 December 2019

<u>Loan to the Republic of Madagascar to finance part of the costs of the Power Transmission</u> <u>Network Reinforcement and Interconnection Project in Madagascar – Phase I (PRIRTEM)</u>

THE BOARD OF DIRECTORS,

HAVING REGARD TO: (i) Articles 1, 2, 11, 12, 14, 15, 16, 26 and 30 of the Agreement Establishing the African Development Fund (the "Fund" or "ADF"); (ii) the Report on the Fourteenth General Replenishment of the Resources of the Fund ("ADF-14"); (iii) the applicable ADF-14 Country Resource Allocation; and (iv) the appraisal report contained in Document ADB/BD/WP/2019/300/Approval - ADF/BD/WP/2019/205/Approval (the "Appraisal Report");

NOTING the availability of sufficient resources to enable the Fund to commit the amount of the Loan;

DECIDES as follows:

- 1. To award to the Republic of Madagascar (the "Borrower"), from the resources of the Fund, a loan of an amount not exceeding the equivalent of Nine Million, Six Hundred and Fifty Thousand Units of Account (UA 9,650,000) (the "Loan") to finance part of the costs of the Power Transmission Network Reinforcement and Interconnection Project in Madagascar Phase I (PRIRTEM I);
- 2. To authorize the President to conclude a loan agreement between the Fund and the Borrower (the "Loan Agreement") on the terms and conditions specified in the General Conditions Applicable to the African Development Fund Loan Agreements and Guarantee Agreements (Sovereign Entities), the Appraisal Report and, in particular:
 - (i) The ADF-14 Loan Financing Terms applicable to Regular Countries; and
 - (ii) The Loan will be amortized in equal and consecutive semi-annual instalments payable on 15 February and 15 August of each year;
- 3. The President may cancel the Loan if the Loan Agreement is not signed within ninety (90) days from the date of approval of the Loan by this Board; and
- 4. This Resolution shall become effective on the date above-mentioned.

BOARDS OF DIRECTORS

Resolution N° B/MG/2019/131 - F/MG/2019/141

Adopted by the Boards of Directors of the Bank and of the Fund on a lapse-of-time basis, on 16 December 2019

Loan to the Republic of Madagascar, from the resources of the Transition Support Facility, to <u>finance part of the costs of the Power Transmission Network Reinforcement and</u> <u>Interconnection Project in Madagascar– Phase I (PRIRTEM I)</u>

THE BOARDS OF DIRECTORS,

HAVING REGARD to: (i) Articles 1, 2, 32 and 37 of the Agreement Establishing the African Development Bank (the "Bank"); (ii) Articles 1, 2, 26 and 30 of the Agreement Establishing the African Development Fund (the "Fund" or "ADF"); (iii) the Report on the Fourteenth General Replenishment of the Resources of the Fund ("ADF-14"); (iv) the Operational Guidelines for the Implementation of the Strategy for addressing Fragility and building Resilience in Africa and for the Transition Support Facility (the "TSF Operational Guidelines"); and (v) the appraisal report contained in Document ADB/BD/WP/2019/300/Approval-ADF/BD/WP/2019/205/Approval (the "Appraisal Report");

RECALLING

- (i) Resolution N° B/BD/2008/05 F/BD/2008/03 approved by these Boards on 28 March 2008 establishing the Fragile States Facility;
- (ii) Document ADB/BD/WP/2014/46/Rev.2 ADF/BD/WP/2014/30/Rev.2 entitled "Addressing Fragility and Building Resilience in Africa: The African Development Bank Group Strategy 2014 – 2019"; and
- (iii) Document ADB/BD/WP/2017/175 ADF/BD/WP/2017/123 entitled "Fourth Cycle Assessment of Eligibility for Countries to the Transition Support Facility (TSF) Supplemental Support Funding (Pillar I) Resources" and the corrigendum thereto which confirmed, *inter alia*, the eligibility of the Republic of Madagascar to receive financing from the TSF Supplemental Support Window (Pillar I);

DECIDE as follows:

- 1. To award to the Republic of Madagascar (the "Borrower"), from the resources of the TSF Supplemental Support Window (Pillar I), a loan of an amount not exceeding the equivalent of Eighteen Million, One Hundred and Seventy Thousand Units of Account (UA 18,170,000) (the "Loan") to finance part of the costs of the Power Transmission Network Reinforcement and Interconnection Project in Madagascar Phase I (PRIRTEM I);
- 2. To authorize the President to conclude a loan agreement amongst the Bank, the Fund and the Borrower (the "Loan Agreement") on the terms and conditions specified in the General Conditions Applicable to Loan Agreements and Guarantee Agreements of the African Development Fund (Sovereign Entities), the TSF Operational Guidelines, the Appraisal Report and, in particular:
 - (i) The ADF-14 Loan Financing Terms applicable to Regular Countries; and

- (ii) The Loan will be amortized in equal and consecutive semi-annual instalments payable on 15 February and 15 August of each year;
- 3. The President may cancel the Loan if the Loan Agreement is not signed within ninety (90) days from the date of approval of the Loan by these Boards; and
- 4. This Resolution shall become effective on the date above-mentioned.