

REPUBLIC OF RWANDA



MINISTRY OF INFRASTRUCTURE

ENERGY SECTOR PERFORMANCE REPORT

BACKWARD LOOKING JSR FOR FY 2017/18

October 2018

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Table of Contents

List of abbreviations.....	ii
1. INTRODUCTION.....	1
1.1. Objectives of the Backward Looking Joint Sector Review.....	1
1.2. Methodology.....	1
2. Performance on 2017/18 Energy Sector Targets and Policy Actions	1
2.1 Electricity generation capacity	2
2.2 Access to electricity	2
2.3 Electricity Transmission and Distribution.....	3
2.4 Sustainable use of biomass energy solutions.....	4
2.5 Energy efficiency and increase security of supply.....	4
3. Cross-cutting Areas	5
3.1 Capacity building	5
3.2 Environment and Gender	6
4. Priority areas for the 2019/20 fiscal year	7
5. Update on the Previous JSR Recommendations	7
6. Status of the implementation of Auditor General's recommendations for the FY 2016/2017.....	8
7. Institutional, Legal and regulatory framework and analytical studies.....	8

List of Tables

Table 1: Key Energy Indicator Matrix.....	1
Table 2: Budget execution for the fiscal year 2017/18.....	6
Table 3: Implementation of Auditor General's recommendations for the FY 2016/2017	8

List of Figures

Figure 1: Electricity Generation Mix 2017/18	2
Figure 2: EDPRS2 Electricity Connections	3

List of abbreviations

Abbreviations	
AFDB	African Development Bank
BTC	Belgian Development Cooperation
EARP	Electricity Access Rollout Program
EDCL	Energy Development Corporation Limited
EDPRS	Economic Development and Poverty Reduction Strategy
EIA	Environment Impact Assessment
EU	European Union
FY	Fiscal Year
GOR	Government of Rwanda
HPP	Hydro Power Plant
IAEA	International Atomic Energy Agency
ICS	Improved Cook Stoves
IP	Investment Prospectus
JSR	Joint Sector Review
LCPDP	Least Cost Power Development Plan
LPG	Liquefied Petroleum Gas
LV	Low Voltage
MHPP	Micro Hydropower Plant
MINILAF	Ministry of land and Forestry
MINALOC	Ministry of Administration and Local Government
MINECOFIN	Ministry of Finance and Economic Planning
MINEDUC	Ministry of Education
MOE	Ministry of Environment
MININFRA	Ministry of Infrastructure
MV	Medium Voltage
MW	Megawatt
NDF	Nordic Development Fund
REG	Rwanda Energy Group
SCBI	Strategic Capacity Building Initiative
SMM	Senior Management Meeting of MININFRA
SWH	Solar Water Heater
TL	Transmission Line
WB	World Bank

1. INTRODUCTION

Access to safe, reliable and cost effective energy is essential to achieving the levels of growth defined under the Economic Development and Poverty Reduction Strategy (EDPRS II) and the National Strategy for Transformation (NST)

Energy is a critical productive sector that plays an important role in catalysing broader economic growth and contributes significantly the achievement of the country's social economic transformation aspirations. In order to realize the desired development impact of 7-year Government Program, EDPRS-II and Vision 2020, the Government of Rwanda adopted and implements sound, comprehensive national energy policies and plans capable of taking into account dynamic factors such as, economic and population growth, natural resource constraints and dispersed settlement patterns.

1.1.Objectives of the Backward Looking Joint Sector Review.

The backward looking 2017/18 JSR has the key following main objectives:

- i. To assess progress in achieving sector objectives with focus on 2017/18 targets for: EDPRS 2 core indicators, selected sector indicators and their corresponding policy actions. This will also include a discussion on catch up plans for areas lagging behind.
- ii. To present and discuss budget execution performance for 2017/18.
- iii. To highlight priority areas for the 2019/20 fiscal year that will inform the planning and budgeting process for institutions in the sector.
- iv. To review progress against implementation of recommendations from the last JSR meetings.

1.2.Methodology.

A consultative approach was used during the preparation of the backward looking JSR report with involvement of all key stakeholders through Sector Working Group Meeting. The inputs from the SWG are incorporated into the JSR report.

2. Performance on 2017/18 Energy Sector Targets and Policy Actions

This section highlights the current progress towards implementation of the 2017/18 sector priorities and key sector policy actions and targets.

Table 1: Key Energy Indicator Matrix

Indicator	July 2016/17	Status June17/18	NST1 Target
Electricity generated in MW	208.3	218	418
% of households with access to electricity (on grid)	28.3	35.1	52
% of household with access to electricity off grid	7.3	11.6	48
% of total household connections on grid and off grid	35.6	46.7	100

Source: EDCL performance report for fiscal year 2017/18

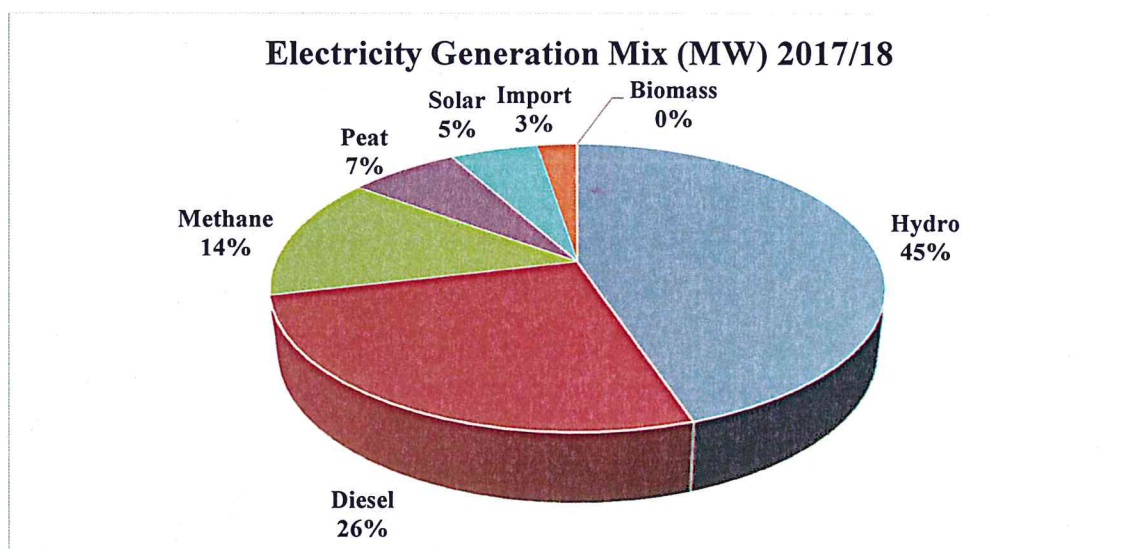
2.1 Electricity generation capacity

During the 2017/18 Fiscal Year (FY) the electricity generation capacity increased from 208.38 MW in June 2017 to 218 MW in June 2018 against the planned 214,71MW and the total energy generated is about 781.4 GWh¹ (including 81,7 GWh imported from Ruzizi 1 and 2 hydropower plants). This represents an increase of 9.7% compared to FY 2016/17 (712.1 GWh). 4.3 GWh were also exported during FY 2017/18.

The increase is a result of the commissioning of, So Energy 30MW with two generators of 10MW each were installed in Kigali while the remaining 10MW generator was placed in the Northern Province (Mukungwa) and decommissioning of 24 MW from CIMERWA and Kigali Special Economic Zone as well as other smaller Micro hydropower plants added to the grid. The current share of renewable Energy is 115.MW and about 431.3GWh² were generated from renewable sources in that period (including the 81.7 GWh imported from Ruzizi 1 and 2).

In the period 2017/18, peak demand increased to 138.7 MW from 124.7 recorded the previous indicating an increase of 11.3%. By the end of EDPRS II, a total of 87 MW were added to the installed capacity making it 218MW as of end June 2018 from 131MW recorded in 2013.

Figure 1: Electricity Generation Mix 2017/18



2.2 Access to electricity

By the end of 2017/18, significant strides have been registered in regards to access to electricity both off grid and on grid. A total of **154,886**³ new households were connected to electricity through grid connection from July 2017 to June 2018, while **101,653**⁴ new households were connected through off-grid solutions in partnership with private sector players. Therefore, a total number of **256,539 new** Households were connected to electricity by June 2018. By the End of EDPRS II period, cumulatively, the total number of households with access to electricity was recorded at 1,133,635 households with 851,829 connected to the grid and 281,806 households connected to off grid.

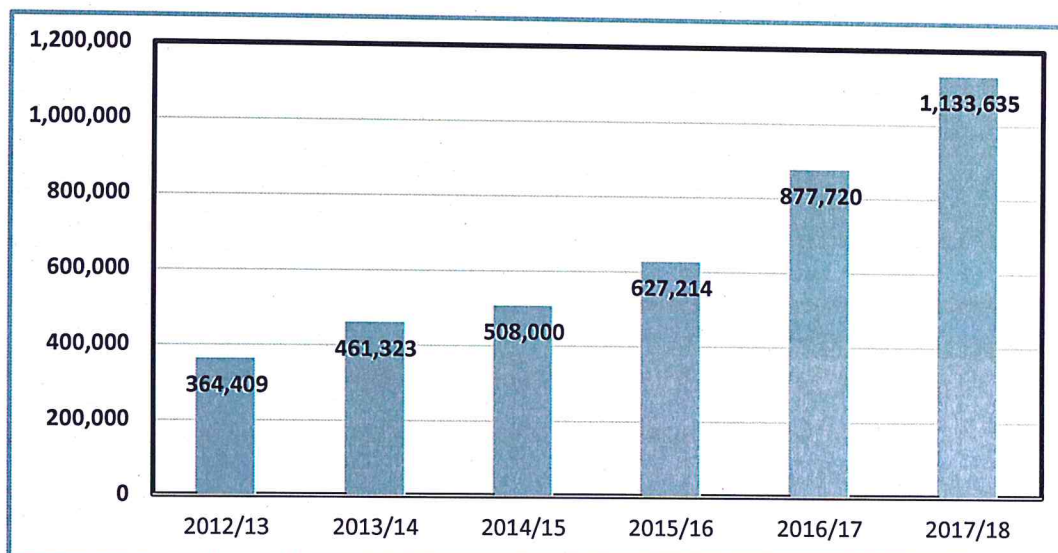
¹ Source: RURA Statistics in Electricity Sub-Sector as of June of the Year 2017 and 2018

² Source : RURA Statistics in Electricity Sub-Sector as of June of the Year 2017/18

³ Source: EDCL Annual report 2017/18

⁴ Source : EDCL Annual report 2017/18

Figure 2: EDPRS2 Electricity Connections



In a bid to accelerate economic growth, 557 productive users were connected to electricity in the FY 2017/18⁵ bringing the total of connected productive users during the EDPRS II period to 3,491. These include water pumping stations, markets; milk collection centres irrigation sites, telecom towers, Tea factories, Schools, Health centres, commercial centres, and model villages among others.

2.3 Electricity Transmission and Distribution.

In a bid power supply and reduce transmission and distribution losses, significant efforts have been directed towards extending transmission and distribution network

a) Transmission.

By end June 2018, 1,139.62 km⁶ of transmission lines had been laid across the country. Of the total transmission network laid already, 425.1 km are of 220 kV network while 714.5 km are for 110 kV transmission infrastructures. In the FY 2017/18, only one transmission line 119 km of 110 kV Rulindo-Gabiro-Musha and associated substations was completed.

Other projects underway include the following;

- 220kV TL: Mamba - Rwabusoro - Rilima: To evacuate power from the country's peat-to power plant in Gisagara District. The project whose construction started in August 2017 is at 55% progress and expected to be completed in 2019.
- 220kV Single circuit TL: Rusumo - Rilima Shango -To evacuate power from Rusumo regional HPP in the Eastern Part of Rwanda. The project contract has been signed in October 2018 and expected to be completed in 2020.

⁵ Source: EDCL Annual report 2017/18, including details on productive users

⁶ EDCL Annual Report 2017/18

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- Project for “improvement of substation and distribution network”-Reliability of supply and loss reduction especially in Kigali areas. The overall project is at (99%) expected to be completed by end November 2018.
- 110kv/30kv TL: Mukungwa - Nyabihu -To boost power supply in the North, targeting the planned industrial part in Musanze. In contract signing process. Project expected to be completed in 18 months from the signature date.
- 110kv TL: Butare - Gisagara TL-To connect Rwanda with Burundi, for future regional power trade. Contract signed in August 2018, project expected to be completed in 2020

b) Distribution Projects

By end June 2018, 1,049 Km of MV and 2,204 Km of LV were completed and commissioned⁷ against the planned 1,268 Km of MV and 2,530 Km of LV as per the 2017/18 Forward looking report. By the end of EDPRS II, cumulative total of 19,285 km of distribution network (MV and LV) had been laid across the country, both MV (6,443) and LV (12,842) lines

2.4 Sustainable use of biomass energy solutions.

Between July 2017 and June 2018, EDCL provided training to ICS promoters in eight districts. Promotion and awareness campaign has also been done country wide. In partnership with the private sector, over 9,000 ICS were disseminated. Technical inspection was also done for 355 biogas systems countrywide. 72 % were found functioning and 38% non-functional. Follow up is being made to repair non-functional biogas systems. The Biomass to energy strategy is under review as well, the. The development of the Biomass action plan with the final plan expected end November 2018

2.5 Energy efficiency and increase security of supply.

Petroleum storage reserves: For security of petroleum products supply, the national petroleum storage reserves stand currently at 74 Million litre capacity. The contract for rehabilitation of Rwabuye fuel storage facility was terminated with the 1st contractor and the decision has been taken to lease the facility to a competent contractor who will rehabilitate and operate the facility. In addition, construction of the 60 million national strategic reserves is on-going to be completed by 2020, So far 43 Million litre structure have been completed The government through REG is also planning to expropriate the buffer zone for the Rusororo oil strategic reserves with the aim of improving safety and environment protection for the surrounding communities.

Dissemination of Solar Water Heaters: 519 new SWHs have been installed through the Solar Rwanda Program from July 2017 to June 2018. Bringing the total of 2,631 systems supplied across the country under the program.

Electricity Loss Reduction: The number of losses both technical and commercial has also been reduced. This is a result of a number of on-going projects to improve the grid network were initiated with support of Development Partners i.e. European Union and World Bank.

⁷ Source: EDCL Annual Performance report, Annex 4.

Though there was significant improvement in the final years of EDPRS II, the energy sector recorded an average performance in regards to achievement of targets. During the development of the ESSP, NST and Vision 2050, catch up plans for sectors lagging behind were considered and the bar has been raised with seemingly ambitious targets set. However in order to achieve these targets, a number of key challenges that have to be addressed these include:

- (i) Limited Access to off grid electricity. There has been a down ward slump in off grid connections due to reduction in incentives and lack of clear coordination plan. However, with the development of NEP and the entry of different financing in the sector such as the Renewable Energy Fund supported by the World Bank. The numbers are expected to surge compared to last year. In addition, improvement in grouped settlement would lead to increased connections.
- (ii) Planning challenges of grid extension extension/off-grid access to achieve universal access with policy aligned to urban and rural settlement.
- (iii) Meeting high level of quality of supply to improve operations of customers and anticipated growth of industrial parks remain a challenge;
- (iv) Insufficient strategic fuel and gas storage capacity poses a threat to the national energy security targets exposing the country to price vitality risks;
- (v) Over 80% on the national population still rely on the use of traditional and inefficient ways for cooking, this causes health problems, environmental degradation and as well as financial and economic challenges to the community. This has been due to lack of a proper coordination framework. The development of the BEST and Long term Action Plan would provide a clear framework in which the subsector cans improve.
- (vi) Need to increase capacity development to cater for new emerging complex technologies and realities required in the management of the sector.

3. Cross-cutting Areas

3.1 Capacity building

There are a number of on-going initiatives to improve the capacity of the sector through technical assistance and trainings with the support of different partners. These included the following;

- ▶ A (~€3Million) EU funded Technical Assistance for the Ministry has been mobilised in May 2018 through the functional review study recommendations.
- ▶ In REG/EDCL specifically, between July 2017 and June 2018, over 154 employees were trained in different fields. Among these 127 staff attend short courses whereas 27 employees have benefited from professional courses with support from the Kingdom of Netherlands, Government of India, Enabel/BTC, AfDB, and USAID among others. Going forward, for the fiscal year 2018/2019, EDCL plans to train about 50 employees with an estimated budget of 200 Million Frw covered by the government of Rwanda. REG is also planning to establish an Energy training centre which will offer specialized training to its staff onsite.
- ▶ REG.EUCL staff were trained in the framework of various grid related investments (KfW, WB, AfDB, JICA, EU);
- ▶ The African Legal Support Facility with of AfDB has continued to provide technical assistance will provide Legal support to both MININFRA and REG;

There is also on-going collaboration with the IAEA in capacity building where different stakeholder institutional personnel have benefited from different trainings on energy planning in demand and supply i.e Model for Analyzing Energy Demand (MAED) and Model for Energy Supply Strategy Alternatives and their General Environmental impact (MESSAGE)

3.2 Environment and Gender

Awareness continue countrywide in partnership with the private sector and other stakeholders for the use of more efficient cooking technologies coupled with the dissemination of improved carbonization techniques across the country as some of programs being implemented to reduce the pressure on forests. The awareness campaign for LPG use mainly in Kigali city and secondary cities is also a priority.

The Environment Impact Assessment (EIA) as a precondition to all power projects and the protection of rivers near Micro Hydro projects is one of measures taken for the protection of environment.

Gender is another cross-cutting issue which is always considered during the implementation of government and donor funded projects. All projects under implementation are encouraged to consider women in the recruitment of workers. A considerable number of women have then access to jobs and incomes contributing to the welfare of the entire family.

However, challenges due to minimal number of qualified personnel have been encountered at higher technical levels (System Planning, design, etc.). Reports have shown minimal numbers of female applicants in such positions probably due to few females undertaking science courses.

MININFRA in 2016/17 developed a gender mainstreaming strategy.⁸ to provide guidance undertaking the development of gender mainstreaming strategy to provide an overall outlook of gender mainstreaming in infrastructure sector by providing strategic actions based on identified gaps and strategic entry points in order to facilitate gender evidence based programming, budgeting and accountability.

Table 2: Budget execution for the fiscal year 2017/18

Programme/Sub-Programme	Allocation (bn Frw)	Execution (bn Frw)	% Execution
Programme: Administrative and support	25.1	24.8	98.8
Sub Programme: Administrative and support	25.1	24.8	98.8
Programme: Fuel and Energy	55.2	53.1	96.1
Sub Programme: Electricity Generation	2.9	2	69
Sub Programme: Electricity transmission	32.2	31.8	98.8
Sub Programme: Alternative energy sources	0.2	0	0
Sub Programme: Energy efficiency & supply security	16.3	15.8	97
Sub Programme :Energy Program Under Districts	3.6	3.5	97
Total Energy Sector	80.3	77.9	97%

Energy sector has one development budget program “Fuel and Energy “and 4 subprograms as well as the Energy program under districts (Government allocation under MINALOC/LODA). Electricity transmission and distribution subprogram takes 85% of the total budget while

⁸ Ministry of Infrastructure Gender Mainstreaming Strategy 2016/17

generation, energy efficiency and security supply subprograms represent respectively 4 % and 7.1 % of the total budget respectively.

As indicated in Annex 1.2, budget execution for domestically funded projects was positive, however the challenges were encountered in execution on external funded projects and this was mainly caused by poor performance of some contractors especially in distribution and transmission as well as procedural delays on some development partner funding.

4. Priority areas for the 2019/20 fiscal year

The key priority areas to be considered during planning and budgeting for the 2019/20 Fiscal Year are:

- a) Implementation of on-going generation projects: Committed generation projects in micro hydropower plants, methane, peat and regional Hydro power plants will be monitored for timely implementation.
- b) Electricity Access Rollout: Government funding will mainly focus on social and productive use areas; the private sector support is envisaged for reaching off-grid electrification targets.
- c) National Grid Network Strengthening: The government will focus on network upgrade initiatives, transmission system expansion and protection.
- d) Provide existing major national and urban roads with street lighting in partnership with RTDA and Districts.
- e) Promotion of biomass alternatives: Biomass alternatives such as LPG, Pellets, Briquettes, and Biogas systems will be promoted. Various initiatives have already been initiated including the development of Biomass to Energy Strategy (BEST) by REG, MININFRA, MINILAF and MoE technical teams.; establish mechanisms of eradicating use of wood and charcoal in hotels, restaurants, schools and prisons. In addition MININFRA looks to priorities the development of LPG Subsector especially in urban areas with focus on developing the strategic reserves and work with RURA to establish regulation mechanism.
- f) Development of the strategic fuel reserve: Implementation of the national strategic fuel storage facilities is underway. The construction of the 60 Million Litre facility started in July 2017 is expected to be completed in 2020.

5. Update on the Previous JSR Recommendations

The forward Looking Joint Sector Review report was discussed approved during the 13th June 2017 Sector Working Group Meeting. Most of the recommendations on the discussion items were implemented and some others have been captured in this report.

- a) **Review the model used in developing the least cost power development plan and present the revised version in the SWG Meeting.** The LCPDP was revised , presented and adopted in the SWG of 3rd October 2018

- b) **REG to finalize the NEP report and circulate it through MININFRA for review.** NEP report Stage 1 and 2 was finalised , presented and adopted in the sector working group meeting
- c) **REG and MININFRA to review the off-grid targets in the ESSP.** The targets were reviewed and aligned with the NEP. The ESSP has since been published.
- d) **To engage NISR to review and harmonise baselines and confirm their adequacy to monitor biomass targets:** The discussions are on-going to finalise the NST1. In addition NISR was engaged to capture the MTEF targets in EICV V. Report expected before the end of 2018
- e) **The Energy Efficiency Strategy to be presented in the next SWG meeting:** The Energy Efficient Strategy document was presented to SWG and adopted in principle pending completion of the Action Plan. The Labelling standards and the Renewable & Energy Efficiency law shall be presented in the next SWG as well.

6. Status of the implementation of Auditor General's recommendations for the FY 2016/2017

The 2016/17 Auditor General's queries published in 2017 were in total 249 audit findings for REG, EUCL&EDCL/Projects 2016/2017 202 Audit queries have been fully addressed representing 81% 47 Audit queries are partially implemented representing 19% The table below illustrates the implementation status as of June 2018.

Table 3: Implementation of Auditor General's recommendations for the FY 2016/2017

Audit Recommendations	EUCL		EDCL		EARP Projects	
	Number	%	Number	%	Number	%
Implemented	58	84%	47	71%	53	76%
In Progress	11	16%	17	26%	17	24%
Not yet implemented	0	0%	2	3%	0	0%
Total	69	100%	66	100%	70	100%

7. Institutional, Legal and regulatory framework and analytical studies

During the FY 2017/18 various sector documents i.e. laws, policies, strategies and studies were elaborated and approved while others are still under development:

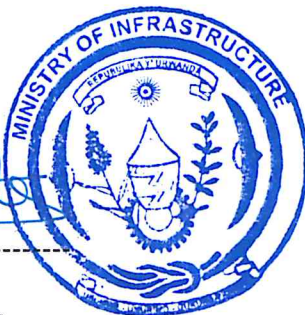
- a. **National Electrification Plan:** Stage 1 and 2 developed, presented and adopted by the SWG. The consultant has embarked on the detail report for stage 3 and 4.
- b. **National Power Master Plan for Rwanda:** Modelling of a comprehensive current and future Generation & Transmission Model for Rwanda grid, using the software available at the utility level was completed with the assessment of current situation of the power sector in Rwanda.

- c. **The Least Cost Power Development Plan:** The LCPDP has been developed, presented and opted by the SWG.
- d. **Ministerial Guidelines on Minimum Standards Requirements Solar Home Systems**
The ministerial guidelines were developed and presented to MININFRA SMM and have been published; a discussion on the Minimum Requirements will be organised with the private sector to assess the impact of the Guidelines;
- e. **Sustainable Energy for All Investment prospectus:** The draft IP has been developed; Consultations are on-going with stakeholders. The final draft is expected by November 2018.
- f. **Biomass Strategy Review and Action Plan Development:** The strategy under review and the draft Action Plan have been presented in the TWG Meeting of October 2018, the consultant has been tasked to incorporate comments and submit final draft before end November 2018.
- g. **Development of Renewable and Energy Efficiency Law:** The draft law is available and under translation before submission to Law Reform Commission for Review. Expected to be completed before the end of FY 2018/19
- h. **Multi – Tier Framework survey:** Electricity and Biomass draft report findings were published

Signed on: ..31.../10/2018

Chair of the SWG

Patricie UWASE
Permanent Secretary
Ministry of Infrastructure



Co- Chair of the SWG

Norah KIPWOLA
On behalf of the Co-Chair of the
Energy SWG
World Bank Group

Annex. 1.1 EDPRS 2 Core Indicators Matrix

No.	EDPRS OUTCOME	INDICATORS	UNIT	BASELINE VALUE (2016/17)	EDPRS 2 Targets	Sector 2017/18 Targets (as per 2016/17 FL JSR)	Actual Performance (as per 2016/17 FL JSR)	Indicator Score	Policy Actions	Brief Narrative Progress against Policy Actions	Responsibility for Reporting	Catch up Plans for areas lagging behind
ECONOMIC TRANSFORMATION												
1	Increased electricity generation capacity	1. Electricity generated	Mega Watts	218	563	214.714	218	39%	Power installed capacity increased by 10 MW	During the 2017/18 Fiscal Year (FY) the electricity generation capacity increased from 208.38 MW in June 2017 to 218 MW in June 2018.	Energy	Least Cost Power Development Plan is developed to provide the optimal solution for generation. Plans are in place to increase generation to meet pecked demand while maintaining 15% reserve margin. These include: - 80MW Hakan Peat to power plant under construction expected early 2020. - Rusumo 80 MW HPP to be shared with Tanzania and Burundi expected to be completed by 2024. - 30 MW Solar power plant to be constructed in partnership with International Solar Alliance
RURAL DEVELOPMENT												
8	Increased access to basic infrastructure for households and enterprises	11. Households with access to electricity	Percent	34.50%	70%	42.3% 31.1% (on-grid) 11.2% (off-grid)	46.7% 154,886 HH (on-grid) and 101,653 HH (Off-grid)	67%	Provide household connections to the Grid 48% grid and 22 % off grid	A total of 154, 886 households were connected to the grid against the planned 96,942 household connections. 101,653 households were connected using off grid solutions bringing a total number of household to 256,539 HH connected to both on grid and off grid in the FY 2017/18.	Energy	Implementation of the national electrification plan. Increased private sector investment

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Annex 1.2 Sector Indicators Matrix (For the selected 10 sector indicators)
 NB: The 10 Sector selected indicators (including the EDPHS 2 Core Indicators) should be consistent with those reported in the 2016/17 Backward Looking ASIS

No.	EDPHS/SECTOR OUTCOME	INDICATOR	UNIT	BASELINE (2016/17 VALUE)	2017/18 Target	Actual Performance	Indicator Score	Policy Actions	Brief Narrative Progress against Policy Actions	Catch up Plans for areas lagging behind
	Increased electricity generation capacity	Electricity generated (MW)	Mega Watts	208.83	214.7	218	102%	1. Completion and commissioning of Karumu MHP (334kw) and Kiyamba/HPP (195 kw) 2. 30 MW Liquid Fuel Oil Plant to replace the 24MW from decommissioned rental thermal plants at KSEZ (M asorok & CIMERVA)	Mwange-Karumu (COD signed in May 2017. Construction activities stopped. Negotiations on contract amendment still on). 30 MW LFO Plants installed at Makungu, Bimbo and Kiyali Social Economic Zone and 24MW decommissioned rental thermal plants Upgrade of Giessej MHP from 1.2 MW to 1.7 and commissioning of Ruwaa Mho 2.6MW	
	Increased access to electricity for households and enterprises	Households with access to grid electricity	Number of Households connected to the grid	696,942 connections	96,648	154,886	169%	Complete construction HV transmission lines and Substations. Construction of MV and LV lines including installation of transformers to increase access to electricity by 96,648 households and 276 socio economic productive areas.	A total of 154, 886 households were connected to the grid against the planned 96,942 household connections. 119 km of 110 KV and 483.1 km of 1,049 km of MV and 2,204 LV constructed 557 productive use areas were connected to electricity in 86,645 Households were connected using off grid solutions.	
	Increased fuel storage capacity to 150 million litres by 2017	Concession relating to 60 Million petroleum storage	Number of Solar Home systems installed/households connected to the grid	172,486 connections	98,977	101,653	165%	Implementation of Rural Electrification Strategy. Continue awareness campaign and monitor private companies involved in dissemination of solar home systems (new 98,977 SHS)	Awareness campaigns were also conducted in partnership with private sector to promote dissemination of SHS.	
	Increased use of Solar Water Heaters (SWHs)	SWHs installed	Number	2,853	519	519	100%	1. Monitor the rehabilitation of Ruvyeye Fuel Storage 2. Supervise the feasibility study for new storage facility	The contract for rehabilitation was executed and REG has opted to lease the facility to a private operator who will rehabilitate and manage the facility. Procurement is ongoing	
PRODUCTIVITY AND YOUTH EMPLOYMENT										
	Increased use of domestic biogas digesters	Domestic biogas digesters constructed	Number inspected	9,163 domestic constructed	275 systems inspected and monitored	355 systems inspected	77%	10 conduct technical assessments of existing biogas digesters to ensure quality compliance	Technical inspection conducted for 355 biogas systems country-wide. 72% found functioning and 38% nonfunctional. Follow up is being made with owners and contractors to repair nonfunctional systems. Awareness campaign carried out in partnership with UNECA	A clear coordination framework is being developed in terms of the Biomas to Energy Strategy and an action Plan to guide implementation of the initiatives to halve the number of households using traditional cooking technologies
	Increased Number of institutional biogas digesters constructed	Institutional biogas digesters constructed	Number inspected	85 institutional biogas constructed	74 systems	74 systems inspected	100%	Working with MINEDUC for the dissemination of biogas in schools. Provide technical support to Magerengeri Prison for the construction of 2 additional biogas	Feasibility study for five schools to develop a proposal on installation of five biogas systems. Technical support provided and in collaboration with IPPC North, two additional digesters have been constructed and completed in May 2018	
	Increased use of efficient cooking methods	Technical support provided to CSCs producers and promoters	Number of awareness campaigns conducted.	Improved Cooking Stove (CS) producers in 20 districts of the country trained. 300 CSC promoters were supported in CSC manufacturing in 11 districts country wide.	Awareness campaign conducted in 9 districts	Awareness campaign were conducted in -Huye, Nyamugabe, Gicumbi, Nyabihu, Rubavu, Nyagatare, Gashibo,Kicukiro and Nyungwe		Assessing CSC producers and the type of the stove produced. Monitoring CSC Standards compliance Technical assessment of existing CSCs	EDCL has provided training to CSC promoters in eight districts (Huye, Nyamugabe, Gicumbi, Nyabihu, Rubavu, Nyagatare, Gashibo,Kicukiro and Nyungwe.) 9,082 CSCs disseminated in collaboration with private companies. I save 805,5000 distributed in partnership with CARIKIVAS/Rubye Diocese, 3000 Communitative and others in IDP Model Villages) Continuous technical assessment is done with producers on imported equipments used in manufacturing of CSCs	
	Increased use of Liquefied Petroleum Gas (LPG) enhanced	Awareness and use of Liquefied Petroleum Gas (LPG) enhanced	Number of awareness campaign conducted		Awareness campaign conducted in 9 districts	Awareness campaign were conducted in -Huye, Nyamugabe, Gicumbi, Nyabihu, Rubavu, Nyagatare, Gashibo,Kicukiro and Nyungwe		Awareness campaign of LPGs Supervision of LPGs dissemination	Awareness campaign done in 8 Districts (Huye, Nyamugabe, Gicumbi, Nyabihu, Rubavu, Nyagatare, Gashibo,Kicukiro and Nyungwe.)	Develop an LPG penetration strategy with support from GT PG and engage private sector to develop gas storage reserves.

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Annex.2.1 Execution Performance against Domestically Financed Budget

Table.1 2017/18 Budget Execution by Programme and Sub Programme			
	Allocation in Billion (Frw)	Execution in Billion (Frw)	% execution
Programme: Amministrative and support	25.1	24.8	98.8
Sub Programme: Amministrative and support	25.1	24.8	98.8
Programme: Fuel and Energy	53.6	53.4	99%
Sub Programme:Electricity Generation	2.9	2	69%
Sub Programme: Electricity transmissio	30.6	32.1	105%
Programme Z			
Sub Programme:Alternative energy sources	0.2	0	0%
Sub Programme: Energy efficiency & supply security	16.3	15.8	97%
Sub Programme :Energy Program Under Districts	3.6	3.5	97%
Total Energy Sector	78.7	78.2	99%

Project Name	Finance Type	Funder	Start date	Initial end date	Current End date	Total Cost (Fw)	Ongoing (2017/18) Approved budget by the Dev. Partners (externally funded projects only)	(2017/18) FY Annual spending at the end of the reporting period	Cumulative project spending at the end of the reporting period	Annual execution rate (dev partners)	Cumulative exec rate	Time execute	ASSESSMENT ON PROJECT PERFORMANCE (*)
Electricity loss Reduction	Grant	EU	19-Mar-15	17-Mar-20	17-Mar-20	20,010,000,000	3,000,000,000	4,495,344,515	13,101,259,911	150%	65%	62%	1) 27 Km of 110KV TL Jabana-Mt Kilgali - chhanga: 80% 2) Gahanga substation: 70 3) Extension of 110 KV Jabana Substation: 76% 4) Upgrade of Mt Kilgali substation: 80% 5) Upgrade of Birembo substation: 80% 6) Upgrade of Birembo substation: 80% 7) Provide Technical Assistance Services to REC: 75.87% 8) Process compensation for damaged properties: 80%
Scaling Up Energy Access Project-32A	Grant	AfDB	7-May-14	30-Jun-21	30-Jun-21	21,247,524,831	14,459,783,561	5,768,140,962	21,866,126,531	40%	56%	59%	1) Rutindo and Gifurwe substations completed. 2) Rural Electrification of Northern Region: 92826 HH connected 3) Rural Electrification of Western Region: 6973 HH connected
Scaling Up Energy Access Project-32B	Loan	AfDB	7-May-14	30-Jun-21	30-Jun-21	17,999,346,613							
Rural electrification Project in Burera and Nyagatare Districts	Loan	BAfDEA	4-Dec-14	8/30/2016	8/31/2018	9,464,000,000	6,888,855,694	2,040,419,332	2,040,419,332	30%	22%	81%	1) Construction materials supplied (10,000 wooden poles; 900 Steel poles; 300 concrete poles) 2) study design for network extension and service connection of 13,000 HHs started
Increasing Access to Electricity to Some Areas in Rwanda Project (Loan)	Loan	SAUDI Funds	4-Jun-11	12/25/2016	30-Jun-19	9,916,920,000	4,985,740,260	2,402,443,821	3,399,516,835	48%	34%	88%	1) Construction material supplied 2) Electrification of Gishubi, Mamba, Nyazo, Kibirira, Muyira, Kigoma, Mgenza and Mutundo sectors in Nyanza and Gisagara Districts completed at 70%
Sustainable Energy Development Project (SEDP)	Grant	NDF	1-Apr-11	12/31/2017	12/31/2018	4,036,000,000	#REF!	700,087,747	2,697,690,632	#REF!	67%	93%	453 SWH disseminated in 2017/18FY, which make a cumulative of 2,855 out of 3,000
Rwanda Electricity Sector Strengthening Project-RESSP	Loan	IDA	10-May-16	10/31/2021	10/31/2021	70,300,718,010	18,608,502,691	393,371,839	2,035,041,184		3%	44%	Three EPC contracts to Design, Supply, Install and Commission of MV and Lines awarded. Design studies started
Electricity Access Scale Up (EASDP)	Loan	IDA	1-Jun-10	11/30/2017	11/30/2017	126,750,000,000	19,558,018,060	11,552,304,323	100,690,920,509	59%	79%	108%	1. 4,188 HHs connected 2. 10 Crane Trucks have been delivered
Improving Access to Reliable On-Grid Electricity Services for Households and Priority Public Institutions (BeLAMP)	Grant	Kingdom of Belgium	15-May-14	14-May-18	14-May-18	13,809,991,990	8,541,219,494	2,640,449,306.0	6,939,347,475	30.9%	50%	100%	Three ERCS recruited and 7,970 households were connected.
Improving Access to Reliable On-Grid Electricity Services for Households and Priority Public Institutions (BeZAMP)	Grant	Kingdom of Belgium	17-Dec-15	16-Dec-19	16-Dec-19	9,748,229,640	3,884,731,731	1,628,710,258.0	2,210,769,995	42.3%	23%	63%	Supply of materials completed and survey and design completed
Improving Access to Reliable On-Grid Electricity Services for Households and Priority Public Institutions (BeSAMP)	Grant	Kingdom of Belgium	16-Feb-17	15-Feb-21	15-Feb-21	8,722,323,010	33,308,312	32,284,576.0	50,087,549	96.9%	0.57%	33%	Upgrade Rubovu Network from 6kV to 30kV. Contract negotiation completed to recruit EPC contractor. Upgrade of single phase to three phase networks in Eastern Province. Procurement initiated
CoR counterpart for New Households connected to the grid (MV and LV lines included)	CP	CoR				21,514,145,309		11,942,977,479.00	24,547,028,824	#REF!	114%	N/A	The budget line is dedicated to pay expropriation and taxes for service connections related activities.
	Loan	Candidates: WB, EIB, AfDB, KfW and AfD	1-Jul-17	31-Dec-24	31-Dec-24	552,500,000,000		0	0%		0%	17%	The Project Documents (Power Purchase Agreements, Project Implementation Agreement, Agent Agreement, Tripartite Agreements, Common Power Purchase Agreement, etc) were expected to be executed in November 2017. Property valuation will be done upon the Project Documents approval by the general assembly of Rusizi SPV.

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Construction of 220 Kv Transmission Line between Shango Substation-Mirama-Uganda Border	Grant	AfDB	13-Nov-13	13-Jun-15	31-Dec-15	17,122,247,328	0	16,309,505,071	95%	139%	93km of 220 kv Transmission Line between Shango Substation-Uganda Border fully completed and commissioned on 8th December 2015 but not energized due to incompleteness of Shango Substation.
179.86km of 220KV TL Karongi-Rubunyu-Coma-Kigali/Shango TL and affiliated substations (Shango, Birimbo, Rubunyu, Bwalyura and Kibyo)	Grant	AfDB/KfW	16-Mar-09	31/12/2014	31/12/2017	51,800,966,257.24	0	38,248,275,764	74%	106%	1) Final settlement of the detailer-contractor for five substations (ISOLUX) (Lot I); Draft final agreement ready for signature; date and venue to be agreed between concerned parties 2) Recruitment of new contractor; bank tenders (AfDB and KfW) granted their no-objection on tender documents upon settlement with ISOLUX signed. 3) Supervision contract; C&K and bank tenders agreed to extend the current supervising firm (ALCO) and final draft contract shared with involved parties for comments.
220KV TL Kigoma-Butare (Rwanda)-Ngazi-Gitega (Burundi) with associated substations at Kigoma & Gitega constructed (GCR contribution)	Loan	KfW	12-Dec-12	31-Dec-16	31-Dec-19	19,076,000,000	3,815,200,000	0	0%	79%	1) Construction of 64 km of 220kv Transmission Line Kigoma-Gitega-Burundi boarder 2) Construction of Gitega substation 3) Upgrade of Kigoma S/S Contract signed on 04th April 2018. The project is at stage of preparatory works of site mobilisation after the kick-off meeting held in June 2018.
Lake Kivu Monitoring Program	Grant	Embassy of the Kingdom of Netherlands	1-Aug-13	31-Jul-16	30-Jun-19	9,072,284,369	3,232,178,402	5,399,884,183	60%	83%	1) The contractor submitted final designs reports and have been partially paid (70% of the total invoice) 2) Conduct study on Biodiversity in Lake: Phase one of inception report has been completed (45%) 3) Conduct study on Kivu Lake Gas Reserves: The MoU is under preparation. 4) Carry out regular measurement of current at different depths. Phase II (Development of Methodology and the installation of equipment) was completed. The redeployment of equipment at the second location was completed. The implementation is at 55%. 5) Management of Robust Database: The activity has been completed. 6) Develop Data sharing Policy: Contract was signed and effective. Inception report was provided. 7) Subsidies: three institutions received 1st installments of operating fees. 1st installments of operation fees have been paid for 3 institutions (INES Rubengeri, ISP Bukuru and OVG).
Prepaid Energy - Rent to own solar home system (off grid)	Grant	EU	16-Jul-14	16-Jul-18	27-Jan-19	6,024,000,000	0	2,888,676,672	48%	85%	Electrification of 49000 households through the Prepaid Energy Rent to Own solar home systems: A total cumulative of 11166 home systems out of 49,000 (23%) were installed as of end June 2018, the 2017/18 accounts 2,313 solar home systems
Construction of Gasogi-KSEZ Transmission line and associated substations (The project for improvement of Substations and Distribution network Phase 2)	Grant	JICA	8-Mar-16	28-Feb-20	28-Feb-20	16,657,400,000			N/A	56%	1. Kibungu Ring Main Unit (RMU) Switching station: 95% 2. Ndara S/S: 93% 3. Mutinda RMU switching station: 94% 4. 2.2 km 110KV Line (Tower 212 to Ndara SS): 79% 5. 6.5 km 15KV Gasogi-Kibungu Line (Gasogi SS-Kibungu SS: 43 towers): 94% 6. 0.4 km 15KV Tower around Ndara SS (Ndara SS-Bk. Free zone 2: 4 towers): 78.5% 7. Distribution Line Route-3 (Route along 110KV TL-2 towers): 76.5% 8. Taxes and expropriation paid: Fw 3,357,636,329 paid among of them Fw

N/A.