

REPUBLIC OF RWANDA



MINISTRY OF INFRASTRUCTURE

FORWARD LOOKING JSR FOR FY 2020/21 REPORT

ENERGY SECTOR

June 2020

KIGALI, RWANDA

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List of abbreviations

Abbreviations	
AfDB	African Development Bank
EDCL	Energy Development Corporation Limited
ESSP	Energy Sector Strategic Plan
EU	European Union
FL	Forward Looking
FY	Financial Year
GOR	Government of Rwanda
HH	Household
HPP	Hydro Power Plant
IAEA	International Atomic Energy Agency
ICS	Improved Cook Stoves
JSR	Joint Sector Review
LCPDP	Least Cost Power Development Plan
LV	Low Voltage
MEPS	Minimum Energy Performance Standards
MOE	Ministry of Environment
MHPP	Micro Hydropower Plant
MININFRA	Ministry of Infrastructure
MTF	Multi-Tier Framework
MV	Medium Voltage
NEP	National Electrification Plan
NST	National Strategy for Transformation
OSCs	Off grid Solar Companies
PAPs	Persons Affected by Project
PV	Photovoltaic
RBF	Result Based Financing
REG	Rwanda Energy Group
RSB	Rwanda Standards Board
RURA	Rwanda Utilities Regulatory Authority
TL	Transmission lines
SE4ALL	Sustainable Energy for ALL
SDGs	Sustainable Energy Goals
SHS	Solar Home System
SWH	Solar Water Heater
UNEP	United Nations Environmental Programme
WB	World Bank

I. INTRODUCTION

Sufficient, reliable and affordable energy supply is critical to country's economic transformation. The government of Rwanda adopted and implements sound, comprehensive national energy policy and plans to include the energy sector strategy that takes into account dynamic factors such as, economic and population growth, natural resource constraints and dispersed settlement patterns. In this regard, a sector wide approach was adopted that brings together different sector stakeholders to plan and discuss progress on the set targets as per the sector strategic plans.

The FY 2020/21 Forward Looking Joint Sector Review (FLJSR) will focus on setting strategic energy interventions targets for implementation as outlined in the NST 1 and ESSP including; access to electricity, electricity generation to meet the increasing demand, losses reduction and energy supply reliability as well as reducing dependence on biomass for cooking which will in turn catalyze ease of doing business, improve standards and quality of living in addition to the environmental benefits.

This year's Joint sector review also takes into account that, the FY 2020/21 marks the Mid Term Review for implementation of the National Strategy for Transformation (NST1) and ESSP, as well as the beginning of the implementation of Vision 2050. It further includes specific tracking of the indicators for the Sustainable Development Goals as per the voluntary national review plans.

It should also be underscored that the 2020/21 Forward Looking Joint sector review comes at a time when the globe and the country in particular is experiencing the COVID 19 pandemic which has not only affected economic progress but has also affected specific sectors including Energy. The effect of the pandemic to the sector has also meant adjustment of the implementation plans and deferring targets of the different energy projects including generation, transmission projects that were to be commissioned this financial year 2019/20 to the financial year. The implementation of off grid projects especially by the private sector has also been affected in the same regard.¹

1.2. Objectives of the Forward Looking Joint Sector Review

The 2020/21 Forward Looking Joint Sector Review has five (5) main objectives:

- i. To present and discuss areas prioritized during the planning and budgeting process.
- ii. To discuss and validate the 2020/21 sector targets and related policy actions.
- iii. To select policy related studies to be conducted in 2020/21 fiscal year.
- iv. To assess progress towards implementation of the fiscal year 2019/20 policy actions.
- v. To present plans and strategies for monitoring additional SDG indicators with clear computation methodology applicable to Rwanda not yet reported in the 2019 Voluntary National Review (VNR) report.



¹ Energy Private Developers survey report on impact of COVID 19 on Solar home Systems market and distribution <https://forms.gle/fduNrMdsLRetQxz5>

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1.3. Energy Sector Strategic objectives 2018-2024²

- Generation capacity increased to ensure that all demand is met and a 15% reserve margin is maintained.
- Reliability of electricity supply improved: average number of power interruptions per year reduced to 14.2 and average number of hours without power to 91.7.
- Household access to electricity increased to 100%.
- Productive user access to electricity increased to 100%.
- Existing, New major national and urban roads provided with street lighting.
- Losses in the transmission, distribution networks and commercial reduced to 15%.
- Halve the number of HH using traditional cooking technologies to achieve a sustainable balance between supply and demand of biomass through promotion of most energy efficient technologies
- Petroleum strategic reserves increased to cover three months' supply.

II. ENERGY SECTOR PRIORITIES FOR THE FISCAL YEAR 2020/21

2.1. Areas prioritized during planning and budgeting process.

Table 1: Linking Priority Areas FY 2020/21 and NST

NST1 / Sector outcome indicators	Sector priority/ outputs
Economic Transformation Pillar	
<p>1. Increase generation capacity to ensure that all demand is met and a 15% reserve margin is maintained.</p>	<p>Increase electricity generation installed capacity from the current 226.742MW to 309.7MW.</p> <p><u>Projects to be completed by 2020/21 FY:</u></p> <ul style="list-style-type: none"> ▪ Hakan Peat to Power Plant (80 MW) ▪ Rukarara V & Mushishito Phase II (3MW) ▪ Giciye III (7.2 MW) <p><u>Ongoing Key Generation Projects to be completed beyond 2021.</u></p> <ul style="list-style-type: none"> ▪ Shema(Symbion) Methane Project (50MW) ▪ 43.5MW Nyabarongo II Hydro Power Plant constructed. ▪ Rusumo Falls HPP (80 MW with 26.7 MW as share of Rwanda) ▪ Rusizi III (145 MW with 48 MW share for Rwanda) ▪ Ntaruka HPP rehabilitation <p><u>Micro hydro projects to be completed beyond 2020/21:</u></p> <ul style="list-style-type: none"> ▪ Development of new IPPs MHPPs <ul style="list-style-type: none"> - Muhembe 0.3MW - Nyirahindwe I&II HPPs (359kW) - Nyundo III (4.5MW) - Base I&II- 2X2.9MW, - Rwondo- 2.3MW, - Ngororero- 2.7MW, and - Ntaruka A-2.0MW
<p>2. Halve the number of HH using</p>	<ul style="list-style-type: none"> ▪ Dissemination of improved cook stoves through FONERWA, Ministry of environment and private sector.

² Energy Sector Strategic Plan 2018-2024

NST1 / Sector outcome indicators	Sector priority/ outputs
<p>traditional cooking technologies to achieve a sustainable balance between supply and demand of biomass</p>	<ul style="list-style-type: none"> ▪ Carry out awareness campaigns to reduce the use of charcoal and firewood. ▪ Carry out inspection biogas plants and support in the rehabilitation of the defected ones. ▪ Carry out technical Inspection of stoves disseminated in 2019/2020 to ensure proper use ▪ Start construction of LPG strategic reserves in partnership with the private sector.
<p>3. Improve energy efficiency and reduce losses</p>	<p>Implement loss reduction projects:</p> <ul style="list-style-type: none"> ▪ Kigali Distribution Network Strengthening by upgrading distribution lines and transformers completed (8 to be completed in this coming fiscal year) ▪ Rubavu distribution network upgraded from 6.6kV to 30kV completed. ▪ Eastern Province Distribution Network upgraded from single phase to three phase in Easter province of Rwamagana, Kayonza and Ngoma districts works completed at 30%. ▪ Improvement of Substations and Distribution network (JICA-III, Upgrade of Gasogi s/s constructed at 20% ▪ Implementation of projects under RBF / SEAP II on network improvement. ▪ Installation of the distribution Management system procurement of firm to supply and install the system is completed. ▪ Procurement of firm to supply and install the Distribution Management system completed. ▪ Finalize energy efficiency standards and labeling ▪ Develop energy efficiency database. ▪ Implement the national cooling strategy in partnership with the Ministry of Environment and other stakeholders.
<p>4. Petroleum strategic reserves increased to cover three months' supply.</p>	<ul style="list-style-type: none"> ▪ 20% expropriation completed along the buffer zone for the 60 million liters Strategic fuel storage facility.
Social Transformation Pillar	
<p>5. Increase access to electricity through on grid and connect new productive use areas</p>	<p>Increase electricity access by adding 118,657 household connections and 260 productive use areas to the grid and 50,000 households connected through off grid:</p> <p>Priorities 2020/21 FY</p> <ul style="list-style-type: none"> ▪ Construct High Voltage (HV) transmission (interconnectors & Domestic lines) lines. ▪ Construct new MV and LV lines to connect new households with more focus to districts with low access rates. ▪ Connect socio and economic productive use areas: Administrative offices, Health centers, Milk Collection Centers, water pumping stations, coffee washing stations, Schools (preprimary, primary, secondary and vocation

NST1 / Sector outcome indicators	Sector priority/ outputs
	<p>training centers), markets, telecom towers Tea Factories and IDP model villages.</p> <p><u>Key HV Projects to be completed by FY 2020/21</u></p> <ul style="list-style-type: none"> ▪ 220kV HV TL Rusumo-Rilima-Shango (119 km); substation construction completed. ▪ 220kV TL Mamba-Rwabusoro- Rilima (61.8 Km) and 110kV Rilima-Gahanga (17,5 Km) with associated substations (Mamba, Rwabusoro and upgrading Rilima substation); ▪ 220kV HV TL Kigoma (Rwanda) – Gitega (Burundi) (63.5 km) Transmission line and associated substation. ▪ 220kV Interconnection Substations (Rwanda-DRC) constructed. Construction of three 220 kV Substations (Rubavu, Bwishyura and Kibuye). ▪ Construction of 48.06 km of 30kV line from Gabiro SS to Gabiro Commercial Farm. <p><u>Key HV Projects to be completed beyond 2020/21 FY</u></p> <ul style="list-style-type: none"> ▪ 110kV- Mukungwa-Nyabihu (29 Km) and Nyabihu substation; ▪ 220KV Line -Bwishyura - Kigoma- Rwabusoro 75Km band related substation
6. Increase access to electricity through off grid	<ul style="list-style-type: none"> ▪ Provide 50,000 households with access to electricity through Solar PV systems and minigrids in partnership with solar private companies and development partners ▪ Carry out awareness campaign and monitor private companies involved in dissemination of solar home systems.
7. Street Light installed on existing, major national (new) and urban roads	<ul style="list-style-type: none"> ▪ Installation of street lights on National and urban roads

The detailed energy sector targets and policy actions for FY 2020/21 highlighted above are provided for in **Annex 2** and NST 1 core indicator targets are in **Annex 3**.

2.2 Budget allocated to energy sector for FY 2020/21

The Energy Sector was allocated Frw.122Billion for the FY 2020/21 budget and of this, electricity transmission and distribution subprogram takes 71% of the total budget while administration, generation, energy efficiency and security supply subprograms represent respectively 12%, 5 % and 11 % of the total budget respectively (Details are in **Annex 1**). The budget for transmission has continued to take a larger share due to the government prioritization of network improvement and expansion which improves

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power supply and reliability since they will enable power evacuation, expand grid electricity access and distribution.

2.3 Sector Policy-related studies selected in 2020/21 FY

During FY 2019/20, there are ongoing studies that will be completed as well as new ones to be initiated in FY 20/21. The purpose of these studies is to either provide baseline situation or guidance for the implementation of the Energy Sector Strategic Plan, policy and NST1. Some of these studies include;

2.3.1 Ongoing Studies/ Analytical works;

- ❖ Finalize national survey on cooking fuel energy and technologies in households, commercial and public institutions in Rwanda.
- ❖ Finalize evaluation of the national biogas program.
- ❖ Development of guidelines to shift from traditional woody biomass to modern clean cooking technologies.
- ❖ Finalize the development of energy efficiency indicators and data base to provide framework of measuring progress on implementation of the energy efficiency strategy.
- ❖ Update the Least cost power development plan
- ❖ Complete the review of the Lake Kivu Management Prescriptions

2.3.2 New Studies;

- ❖ Development of LPG Master Plan to guide penetration of LPG usage.
- ❖ Conduct assessment of the impact of tax and fiscal incentives on the energy sector
- ❖ Institutional Reform And Performance Review of Energy sector reforms

The studies to be conducted and their associated source of funds are detailed in **Annex 4** while the progress on ongoing studies is in **Annex 5**.

III. PROGRESS ON 2019/20 SECTOR TARGETS AND POLICY ACTIONS

This section highlights the current progress towards implementation of the 2018/19 sector priorities and **annex 6** summarized the progress against 2018/19 key sector policy actions and targets.

3.1. Electricity generation capacity

During the 2019/20 Fiscal Year (FY), electricity generation capacity increased from 224.6 MW in June 2019 to 226.74 MW in May 2020 against the planned 305 MW by June 2020. This indicates an increase of 2.1MW resulting from the commissioning of Nyirantaruko 1.84 MW and Kigasa 0.27MW. The meagre performance in generation this year is a result of delays of the planned completion and commission of 80MW Hakan Peat to Power Plant and Rukarara V Mushishito 3M whose completion and commissioning was been affected by COVID Pandemic.



The current share of renewable Energy is 123.9 MW (installed capacity) accounting for the 401.9GWh³ of renewable electricity generated in the period July 2019-April 2020 against the total electricity generated as of end April was about 728.27 GWh. equivalent to about 369.93 GWh generated. In order to optimize generation planning, REG has continued to periodically update the LCPDP with the latest update completed in February 2020.

3.2. Access to electricity

In the period between July 2019-May 2020, over 118,071 households were connected to the grid against the planned target of 83,000 households bringing the total households connected to the grid to 1,116,237(41%⁴) from the 998,166(38%) connected end June 2019.


During the same period over 48,730 households were connected to electricity through off grid solutions i.e. standalone home systems and mini grid connections against the planned 68,980 households increasing the total number of households connected through off grid to 406,926 (15%) from 358,196 (14%) households registered in 2018/19. Thus the total number of households connected through both off grid and grid connection during this period is over 1,523,620 (56%)⁴ indicating an increase of 166,801 households from 1,356,819 (51%) households registered the previous fiscal year.

In addition 333 social and economic productive use areas were connected to electricity between July 2019 and May 2020. These include; commercial centers, coffee washing stations, milk collection centers, water pumping stations, schools, health centers among others

The national electricity grid had extended distribution lines across the country as well as construction of high voltage transmission lines for regional interconnection and power evacuation.

Note: The number of households and productive use areas connected as well as grid extension figures are expected to increase by end June 2020.

Figure 1: Graph Showing Access Rate per District

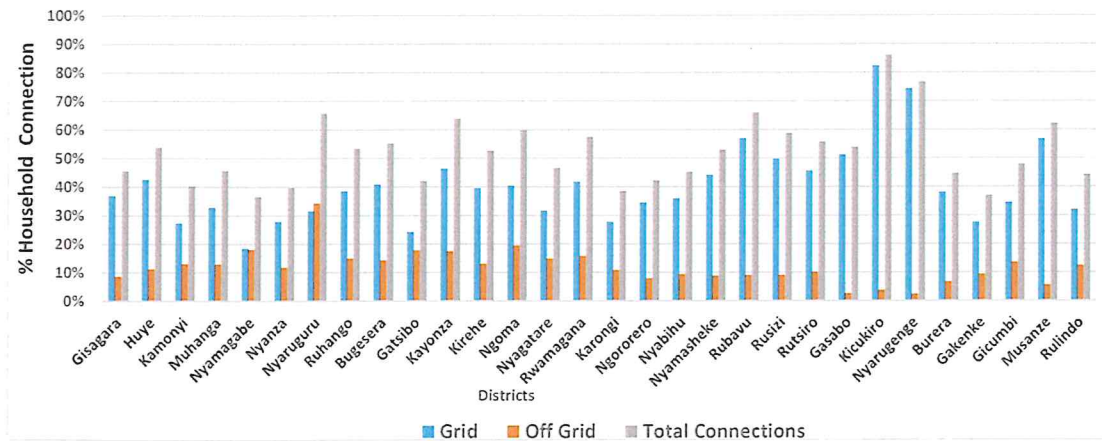


³ Renewable Electricity generation is the proxy measure for the SDG indicator 7.2.1 for Rwanda

⁴ The current percentage progress of households connected to electricity is based on EICV5 number of households



Access Status Per District End May 2020



As indicated in the above graph, Gakenke District and Nyamagabe still have the lowest connection rate where as Nyarugenge and Kicukiro register the highest connection rate. Urban districts account for more connections to the grid whereas rural districts account for the largest off grid connections.

3.3. Street Light Provision.

During the period July 2019 to May 2020, 143.81km of street lights were installed on the roads Kitabi-Ntendezi-& Pindura -Bweyeye (97km), Huye-Gisagara (9.76km), Kitabi-Gasarenda: (9.9km) and Nyaruguru (27.15km). The Government of Rwanda through the Rwanda Energy Group (REG) recently concluded procurement of a company that will construct 603Km of street lighting on both major and national roads. Construction is expected to begin next financial year.

3.4. Sustainable use of biomass energy solutions.

▪ Promotion of clean cooking technologies:

During the period July 2019 to April 2020, REG conducted 11 awareness campaigns country wide to promote clean cooking technologies in both urban and rural areas of Nyabihu, Burera, Gakenke, Rusizi, Karongi, Rubavu, Ngororero, and Rutsiro. They also conducted others through use of electronic (Radio) and print media. However this exercise was halted by the COVID 19 Pandemic outbreak.

In addition over 12,300 improved cook stoves were distributed in partnership with the private sector, the Ministry of Environment (MoE) and other stakeholders. 428 biogas plants were inspected in 23 districts and of these 294 (68.7%) that were not fully operational were rehabilitated. 30 ICS producers and 24 promoters respectively were supported through training and testing. There are 33 types of stoves and 10 fuels (mainly briquettes) that were tested.

▪ Promotion of LPG:

LPG has continued to be promoted as the quick solution for clean cooking especially in urban areas with the private sector leading in its distribution and supply chain. To ensure

reliable supply the Government is also in negotiations with the private sector on the development of LPG strategic reserves. Construction works for the 17,100 Metric ton Facility is expected to start next financial year.

In a bid to promote and regulate the LPG subsector, the government through Rwanda Utilities Regulatory Authority (RURA) established regulation governing liquefied petroleum gas business in Rwanda.⁵

In addition to the above, the government is currently mobilizing funds to promote clean cooking in Rwanda. The funds which are expected to come from the World Bank will be implemented as result based and the institutions that will execute the project are REG-EDCL and BRD.

3.5. Energy efficiency and increase security of supply.

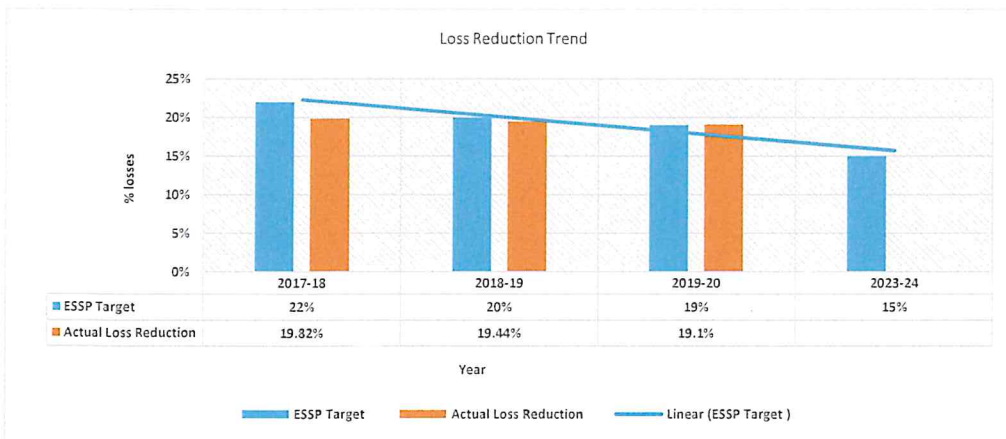
Petroleum storage reserves:

The national petroleum storage reserves currently stand at 111 -Million-liter capacity after the completion of construction of 60 Million Liter storage facility in partnership with the private sector. To enhance safety and environmental protection for the community around the Rusororo oil strategic reserves, government has continued the expropriation exercise for the buffer zone and over 12% of the total amount has been paid to compensate the affected people and the remaining PAPs are planned in the subsequent years.

Electricity Loss Reduction:

The number of losses both technical and commercial has been reduced from 19.4 % recorded in 2018/19 to 19.1% registered in May 2020.

Figure: Graph Showing Loss Reduction Trend.



The reduction reflected above is a result of a number of ongoing investment projects in network improvement including network upgrades in the city of Kigali including 11 cabins with support from World Bank, Upgrade Rubavu Distribution network from 6.6 to

⁵ Regulation N 001/LPG/R/GP-EWS /RURA/2018 OF 10/01/2018 Governing Liquefied Petroleum Gas Business In Rwanda; https://rura.rw/fileadmin/Documents/Energy/RegulationsGuidelines/LPG_Regulations_in_Rwanda.pdf

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30kv supported by Kingdom of Belgium as well as reinforcement and upgrade of distribution network from single phase to 3 phase in the different parts of the country.

3.6. Other Ongoing Energy Efficiency Initiatives:

3.6.1. Implementation of the energy efficiency strategy:

Various activities are ongoing to foster implementation of the energy efficiency strategy. This year, the Rwanda Standards Board (RSB) concluded the adoption of minimum energy performance standards (MEPS) and labelling for residential and street lighting developed in 2018/19 by the Ministry of Infrastructure with support from European Union. Development of MEPS for other appliances is expected to follow.

MININFRA is also collaborating with the MoE on the Implementation of the cooling program supported by United Nations Environmental Programme (UNEP).

IV. CROSS-CUTTING AREAS:

4.1 Capacity building

There are a number of ongoing initiatives aimed at improving the capacities of the sector through technical assistance and trainings with the support of different partners. These included the following;

- ❖ During the period July 2019-May 2020, over 85 REG staff were trained in different fields including; occupational health and safety policies and tools; customer management system operation.
 - ❖ In addition, REG developed a performance management framework to guide institution performance management.
 - ❖ REG in partnership with Power Africa has also initiated an apprenticeship program where 45 for young graduate women engineers will be provided with internship placement. Their apprenticeship is expected to start next financial year.
- **Implementation of the functional review for MININFRA energy Division:** With support from European Union, the energy division at the Ministry is also implementing the recommendations of the functional review. This includes capacity and institutional development of the energy division to deliver to its mandate.
 - **IAEA Cooperation:** There is also an ongoing collaboration with the IAEA in capacity building where different government stakeholder personnel have benefited from different trainings on energy planning.

4.2 Environment and Gender

Awareness campaigns for the use of more efficient clean cooking technologies coupled with the dissemination of improved carbonization techniques continue being carried out countrywide and some of programs being implemented with the aim to reduce the pressure on forests. Promotion of LPG use as a priority is currently being carried out in mainly Kigali city and the satellite cities.

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.

V. PLANS AND STRATEGIES FOR MONITORING ADDITIONAL SDG INDICATORS:

The Sustainable Development Goal 7(SDG7) aims at ensuring access to affordable, reliable, sustainable and modern energy for all. In order to achieve this, six (6) indicators were identified and of these, three are currently measured and reported by Rwanda. These include; 7.1.1 Proportion of population with access to electricity, 7.1.2 Proportion of population with primary reliance on clean fuels and technology, 7.2.1 Renewable energy share in the total final energy consumption (proxy indicator).

There are two indicators under investigation on how to measure; 7.3.1 Energy intensity measured in terms of primary energy and GDP, 7.b.1 Investments in energy efficiency as a proportion of GDP and the amount of foreign direct investment in financial transfer for infrastructure and technology to sustainable development services while one is not applicable or not measured by Rwanda, 7.a.1. International Financial Flows to developing countries in support of the clean energy research and development, renewable energy production including hybrid systems.

Signed, on ^{8th}..... /June 2020

Charles K. KALINDA
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Annex 1: Linking Sector Outcomes Budget programme and sub-programmes

Sector Outcome 1: Improved administration and support			
No.		Sub-programme	2020/21 Budget allocated
1	Programme 1 Administration and support services	SP 1.1 Administration and support services	14,808,463,612
Sector Outcome 1: Increased Electricity Generation Installed Capacity from 218.6MW to 220.6MW by June 2020			
2	Programme 2 Fuel and Energy	SP 2.1: Electricity Generation	5,829,677,419
Sector Outcome 2: Outcome 2: Improved Power Transmission and Distribution Network to increase access from 56 % to 62% and network improvement			
	Programme 2 Fuel and Energy	SP 2.2: Electricity Transmission and Distribution	86,284,045,081
	Programme 3: Energy Program under Districts	SP 2.3 : Energy Access	2,359,460,117
Sector Outcome 3: Enhanced Energy Efficiency and supply security			
	Programme 2: Fuel and Energy	SP 2.4: Energy Efficiency and supply security	13,216,719,269
	Programme 3 : Energy Programme under District	SP: Energy source Diversification	475,584,731
			122,973,950,229

Annex.2 Targets and Policy Actions for the Sector Indicators Matrix (For a maximum of the selected 10 sector selected indicators from the Sector Strategic Plans strictly)				
Sector outcome	Sector outcome indicators (not exceeding 10 including NSTI indicators)	Baseline (2018/19)	2020/21 Targets	2020/21 Policy Actions/ priority outputs (maximum of 2 per each indicator)
ECONOMIC TRANSFORMATION				
Increased electricity generation capacity to meet demand and 15% reserve margin	Electricity generation installed capacity in (MW)	224.6	309.7	Complete and commission Hakan Peat to Power Plant §(80 MW)
				Complete and commission other smaller micro hydro power plants including: - Rukarara V & Mushishito Phase II 3MW hydro power plant - 7.2 Giciye III MWhydro power plan
Increased fuel storage capacity by 60 million litres by 2020	storage capacity added to the national storage facilities in million Litres	83.8	111	Complete 20% expropriation of the PAPs along the buffer zone for the 60 million liters Strategic fuel storage facility
Enhanced energy efficiency and reduce losses from the current estimate of 19.1% to 18%by 2019/20.	%reduction of losses	19.4	18	Implement Kigali Distribution Network Strengthening by upgrading distribution lines and transformers completed (8 cabins to be completed).
				Implement distribution network upgrades; Rubavu distribution network upgraded from 6.6kV to 30kV and eastern from single phase to three phase in Ester province of Rwamagana, Kayonza and Ngoma districts works completed at 30%.
Household using traditional cooking technologies reduced.	% of HHs depending on firewood	79.9% (EICV)	66.6%	Disseminate 27,290 improved cookstoves in partnership with FONERWA, Ministry of environment and private sector
				Continue with awareness campaign in the 30 districts across the country to reduce the use of charcoal and promotion of clean cooking technologies
Household using traditional cooking technologies reduced.				
Increased household connection to grid electricity from 56% to 58.2% by end of June 2021	Number of households connected to grid electricity	998,166 households , 471 productive users	1,235,351	Connect 118,657 household and 260 productive use areas to the grid with more focus to districts with low access rates.
	Number of km of transmission and distribution lines constructed	1,139.62 km Km of HV transmission line 7,549 Km of MV 16,775 Km of LV	1,449.52 Km HV, 8152.92 Km MV , 18610.18 Km LV	Construct new 309.9Km of HV Transmission Lines , 603.92 Km MV lines and 1,835.18 Km of LV lines
Increased household connectionthrough offgrid from 15% to 17%	Number of households connected to grid electricity	358,196	456,926	Connect 50,000 new households using Solar PV systems and minigrd
				Continue awareness campaign and monitor private companies involved in dissemination of solar home systems.
Existing and New major national and urban roads Provided with street lighting	Number of Km of street lights installed	17.5km instalation completed and procuremnt of compay to install 603 km of street lights started	50% of the 603km streetlights installed	Install 300 km of street lights

Annex.3. NST 1 MONITORING AND EVALUATION MATRIX											
No	NST 1 Outcome	Indicators	Units	Baselines 2016/17	Current status 2018/91	Planned 2020/21	Targets		Responsibility for reporting	Data Sources	TL
							2020/2021	2023/2024			
Economic Transformation Pillar											
15	Reduced biomass usage for cooking	Percentage of households using firewood for cooking	Percent	79.9 (EICV5)	79.9 (EICV 5)	66.6	66.6	42	MININFRA, Energy Sector	MININFRA Reports, EICV	
Social Transformation Pillar											
29	Increased access to basic infrastructure (water, sanitation, electricity, ICT, shelter) achieved	D. Percentage of households with access to electricity	Percent	34.4 (EICV5)	56	0.6	71.5	100	MININFRA, Energy Sector	MININFRA reports and EICV Survey	

Annex.4: Sector Priority Analytical Studies for 2020/21

Sector outcome	Planned Analytical Work & Duration	2020/21 Budget	Funding Source (GoR, if otherwise, specify, also state the status i.e. Secured/ Still under mobilization)
Improved policy monitoring and valuation	Institutional and performance review of the energy sector reforms	300,000 USD	World Bank funding secured
	Update energy sector policy	NA	Internal
Increased electricity generation capacity to meet demand and 15% reserve margin	Periodic update of the Least cost power development plan	NA	Internal
	Complete the review of the Lake Kivu Management Prescriptions	309,000,000 Frw	GoR funding secured
Halve the number of HH using traditional cooking technologies to achieve a sustainable balance between supply and demand of biomass through promotion of most energy efficient technologies	Finalise Biomass baseline survey.	300,000 EUR	European Union funding secured
	Guidelines to shift from traditional woody biomass to modern clean cooking technologies finalised	NA	Internal
	Development of LPG Master Plan	300,000 EUR	Kfw funding secured
	Finalise evaluation of the national biogas programme	100,000 EUR	European Union funding secured
Improved energy efficiency and energy security supply	Finalise development of energy efficiency indicators and database monitoring system	100,000 EUR	European Union funding secured
Increased households connection to electricity	Impact assessment of tax and fiscal incentives on the energy sector	TBD	Africa Clean Energy (ACE)/DFID-Under Mobilisation

*TBD: To Be Determined

*NA : Not applicable

Annex.5: Progress against 2019/20 Sector Analytical Studies			
NST 1 sector outcome	2019/20 Planned Analytical Work	Brief progress	Comment/Challenges and actions to be taken if any
Increased electricity generation capacity to meet demand and 15% reserve margin	Periodic update of the Least cost power development plan	Periodic update of the Least cost power development plan was conducted with the revised report submitted in February 2020.	Next review is december 2020
Halve the number of HH using traditional cooking technologies to achieve a sustainable balance between supply and demand of biomass through promotion of most energy efficient technologies	Conduct Biomass baseline survey.	The survey has been conducted and the consultant submitted the draft report in May 2020 currently under review by the Ministry.	The final report is expected in the first quarter 2020/21
	Conduct Biogas program	Data collection completed in December 2020 and the consultant had started report drafting. However this exercise has been stopped due to the poor performance of the contracting firm.	The consultant has been hired by the firm (QAUREIN Sprl) implementing capacity building and functional review of the energy division in MININFRA with funding from EU. However this firm has performed poorly and the contracting authority is in the process of contract termination. The exercise has been carried forward to the next financial year.
Improved energy efficiency and energy security supply	Finalize energy efficiency standards and labeling for lighting	The energy efficiency standards and labelling were completed and have been adopted by the Rwanda Standards Board in May 2020 awaiting for publication in the official gazette.	The next step is to design the labels that will be used on the appliances and plan enforcement.
	Finalise energy efficiency monitoring system	The consultant was hired and started data collection, however activity has also been put on hold pending the resolution of QAUREIN Issue.	The consultant has been hired by the firm (QAUREIN Sprl) implementing capacity building and functional review of the energy division in MININFRA with funding from EU. However this firm has performed poorly and the contracting authority is in the process of contract termination. The exercise has been carried forward to the next financial year.

Annex.6 Progress against 2019/20 Policy actions (for the selected 10 sector indicators)

NST 1 sector outcome	Sector outcome indicators (not exceeding 10 including NST 1 indicators)	Baseline (2018/19)	2019/20 Policy Actions	Brief Description of Progress against implementation of 2019/20 Policy actions (This should be brief with focus on fasttracking progress since a detailed assessment will be captured in the Backward Looking JSRs)
ECONOMIC TRANSFORMATION				
Increased Electricity generation to meet demand and reserve margin of 15%	Electricity generated in MW	224.6 MW	Add 305 MW to the installed generation capacity	Electricity generation capacity increased to 226.7M by end may 2020 resulting from the commissioning of Nyaintaruko 1.84 MW and Kigasa 0.27MW. Planned completion of hakan 80 MW and Rukarara Mushishito Phase II 3 MW were affected by COVID and are planned to be completed next financial year
Petroleum strategic reserves increased to cover three months' supply	Additional Capacity of strategic oil reserves in Million Litres	83.8 million Litres	Add 128 million litres to the national storage reserves	<ul style="list-style-type: none"> • 28million liters storage facility construction completed. • Payment for expropriation for PAPS along the buffere zone for Rusoror strategic fuel storage facility completed at 12%. More are planned to be compensated in the coming financial year
Halve the number of HHs using traditional cooking technologies to achieve a sustainable balance between supply and demand of biomass	% reduction in biomass usage	79.9% (EICV V)	74.5%	<ul style="list-style-type: none"> • The number of people using traditional cooking methods(using wood) has reduced to 79.9 % (EICV 5) the current status will be provided by survey results and EICV 6. • Awareness campaign conducted in all 30 districts to promote cleaner cooking. • Technical inspection of existing domestic and institutional biogas systems continued. • Plans are available to fast truck usage of LPG in
Improve energy efficiency and reduce losses	% of loss reduction	19.4	18%	<ul style="list-style-type: none"> • The current losses are estimated at 19.1% as per end May results. Implementation of loss reduction projects: Kigali Distribution Network Strengthening by upgrading distribution lines and transformers completed.
SOCIAL TRANSFORMATION				
Increased access to electricity for households and enterprises	Households with access to grid electricity	998,166 Households (38%) connected ongrid	km MV lines and 1,451.93 km of LV lines to connect new 83,000 households with more focus to districts with low access rates. 404 productive use areas connecte	• 118,071 households and 333productive use areas connected as of end May 2020 and 221.42km of MV and 677.41 km of LV as end March 2020.
	Households with access to offgrid electricity	358,196 (14%) households	• Providing access to electricity to new 68,980households using Solar PV systems (through partnership with solar private companies). SHSs to be connected.	• 48,730 households have been connected to electricity through off grid solutions as of end May 2020
Existing and New major national and urban roads Provided with street lighting	Number of Km of street lights installed	17.5km instalation completed and procurement of compay to install 603 km of street lights started	631.85 km of National and urban roads served with street lights.	<ul style="list-style-type: none"> • 143.81km of street lights were installed on the roads Kitabi-Ntendezi-& Pindura –Bweyeye 97km Huye-Gisagara 9.76km, Kitabi-Gasarenda: 9.9km and Nyaruguru 27.15km. • Procurement of a company to construct 603Km of street lighting on both major and national roads concluded and works expected to start in FY 2020/21.

Annex.7 Plans or strategies for monitoring SDG indicators (now with clear computation methodology and applicable to Rwanda yet not currently monitored)

SDG Goal	SDG Target	SDG indicator (not currently monitored but with clear computation methodology and applicable to Rwanda)	Plans or strategies to monitor the indicator Eg. Requested and agreed with NISR to start tracking it in the next EICV or any other plans
<p>Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all</p>	<p>By 2030, double the global rate of improvement in energy efficiency</p>	<p>7.3.1: Energy intensity measured in terms of primary energy and GDP</p>	<p>The indicator is measured as a ratio of energy produced (Megajoules) to the country GDP (USD) produced the same period.). The current status is 3.22 using 2019 energy balance data.</p> <p>The Ministry of infrastructure will collaborate with the other stakeholders including Ministry of Finance and Economic Planning, the Ministry of Environment and National Institute of Statistics Rwanda.</p>