REPUBLIC OF RWANDA

Kigali, on 20 JUN 2019
Ref № 920/PS/019

MINISTRY OF INFRASTRUCTURE
P.O Box 24 KIGALI
E-mail: info@mininfra@gov.rw

The Permanent Secretary and Secretary to the Treasury
Ministry of Finance and Economic Planning
KIGALI

Dear PS/ST,

RE: Submission of the 2019/20 Energy Sector Forward Looking Joint Sector Review Report and Minutes of the Sector Working Group Meeting.

Reference is made to the terms of reference issued by the Ministry of Finance and Economic Planning (MINECOFIN) providing guidelines for sectors to prepare forward looking joint sector review forums with stakeholders to engage in policy dialogue to ensure ownership, accountability and transparency of the NST 1 implementation and monitoring process.

In this regard, the energy sector forward looking joint sector review meeting was held on 18th June 2019 to present, discuss and validate together with stakeholders the energy sector priority areas and targets for the FY 2019/20.

This letter serves to submit to your office, the energy Sector 2019/20 forward looking joint sector review (JSR) report for your consideration.

Thank you for your continued cooperation.

Sincerely,

Eric Sabiti BUGINGO
Division Manager

MINISTRY OF INFRASTRUCTURE

Patricie Uwase
Permanent Secretary

Cc:

-Hon. Minister of Infrastructure
-Hon. Minister of State in-charge of Transport.
KIGALI

REPUBLIC OF RWANDA

MINISTRY OF INFRASTRUCTURE

FORWARD LOOKING JSR FOR FY 2018/19 REPORT

ENERGY SECTOR

June 2019

KIGALI, RWANDA

Table of Contents

List of abbreviations

Abbreviations	
AfDB	African Development Bank
EDCL	Energy Development Corporation Limited
EDPRS	Economic Development and Poverty Reduction Strategy
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
MHPP	Micro Hydropower Plant
MININFRA	Ministry of Infrastructure
MTF	Multi-Tier Framework
NST	National Strategy for Transformation
PV	Photovoltaic
REG	Rwanda Electricity Group
KSEZ	Kigali Special Economic Zone
SHS	Solar Home System
SWH	Solar Water Heater
WB	World Bank

I. INTRODUCTION

Energy sector is a critical productive sector that catalyzes broader economic growth and contributes significantly towards the realization of country's ambitious social and economic transformation aspirations. Therefore, access to reliable and cost effective energy is essential to achieve the levels of growth as stipulated in the National development plans.

In order to attain the desired development impact, the infrastructure sector implements different projects and programs as embedded in the National Strategy for transformation (NST 1), Vision 2050 and the sustainable development goals.

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.

1.1.Objectives of the Forward Looking Joint Sector Review

The 2018/19 Forward Looking Joint Sector Reviews have four (4) main objectives:

i. To present and discuss areas prioritized during the planning and budgeting process.
ii. To discuss and validate the 2019/20 sector targets and related policy actions.
iii. To select policy related studies to be conducted in 2019/20 fiscal year.
iv. To assess progress towards implementation of the 2018/19 policy actions.

1.2.Energy Sector Strategic Plan 2018-2014 objectives

- 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 2019/20

2.1. Areas prioritized during planning and budgeting process.

As highlighted during the backward looking joint sector review, the following key priority areas have been considered during the planning and budgeting process for the 2019/20 Fiscal Year are:

1. **Implementation of on-going generation projects:** Committed generation projects in micro- hydro, methane, peat, regional hydro power plants and geothermal exploration will be monitored for timely implementation. It is planned that a total of 83MW will be added to the national grid bringing the total installed capacity to 305MW.

2. **Electricity Access Rollout**: Increase the number of household connected to electricity from 51% to 56% as of June 2019 through both grid and off grid. Government funding will mainly focus on social and productive use areas where 404 are planned to be connected; the private sector support and interventions are expected to be for reaching off-grid electrification targets.

3. **National Grid Network Strengthening**: The government will focus on network upgrade initiatives, transmission system expansion and protection across the country. This will include construction of 2,470 km of medium and low voltage lines as well as 198km of high voltage lines.

4. Provide existing major national and urban roads with street lighting in partnership with Rwanda Transport Development Authority and Districts.

5. **Promotion of biomass alternatives**: Biomass alternatives such as LPG, Pellets, Briquettes, and Biogas systems will be promoted. Focus will be on establishing mechanisms for large biomass consumers such as institutions like schools, prisons and armed forces barracks, hotels and restaurants as well as encouraging urban dwellers to transit to cleaner and efficient cooking methods such as use of LPG. In addition, MININFRA will also work with stakeholders in regard to implementing the BEST action plan to include; conducting a biomass survey, engage private sector on development of LPG storage reserves and establish regulatory frameworks to enforce reduction on biomass usage.

6. **Development of the strategic fuel reserve**: Implementation of the national strategic fuel storage facilities is underway. The construction of the 60 Million Litres facility started in July 2017 is to be completed in 2020.

The specific projects to be implemented in 2019/20 have been identified from the above priority areas that are linked to two NST1 Pillars I.e. Economic Transformation and Social

Transformation. The table 1 below shows the linkage between NST thematic areas and the selected projects.

Table1: Priority projects for FY 2019/20

NST1 / Sector outcome indicators	Sector priority outputs
Economic Transformation Pillar	
1. Increase generation capacity to ensure that all demand is met and a 15% reserve margin is maintained.	Electricity generation installed capacity will be increased from the current 221.9 MW to 275 MW. This will be a result of commissioning of the 80MW Hakan Peat to power plant and decommission 30MW thermal generators and the 3 MW Rukarara V Mushishito Phase II. ***Projects to be completed by 2019/20 FY*:** ▪ Hakan Peat to Power Plant (80 MW) ▪ Rukarara V & Mushishito Phase II 3MW ***Micro hydro projects to be completed beyond 2019/20*:** ▪ Development of new IPPs MHPPs - Kavumu 0.4 - - Muhembe 0.3 - Mukungwa II 1.0 rehabilitation. ▪ Symbion Methane Project (50MW) – Expropriation ongoing, site mobilization completed and construction started. ▪ 43.5MW Nyabarongo II Hydro Power Plant constructed. Project detailed design, property evaluation and site mobilization completed. ▪ Rusumo Falls HPP (80 MW with 26.7 MW as share of Rwanda) - both contracts for civil works and electromechanical works are ongoing. Overall progress is expected to be at 70% by end June 2020. ▪ Rusizi III (145 MW with 48 MW share for Rwanda) – The project progress is waiting for partners states to sign project agreements
2. Halve the number of HH using traditional cooking technologies to achieve a sustainable balance between supply and demand of biomass	▪ Conduct Biomass baseline survey. ▪ Conduct Biogas programme evaluation. ▪ Continue with awareness campaign across the country to reduce the use of charcoal and promotion of clean cooking technologies to include use of Pellets, ICS, LPG and Biogas ▪ Technical support provided to improved cook stove producers and promoters; ▪ Conduct awareness campaign in all 30 districts
3. Improve energy efficiency and reduce losses from the current estimate of 19% to 18% by 2017/18.	Implementation of loss reduction projects: ▪ Kigali Distribution Network Strengthening by upgrading distribution lines and transformers; ▪ Rubavu distribution network upgraded from 6.6kV to 30kV ▪ Eastern Province Distribution Network upgraded from single phase to three phase in Ester province of Rwamagana, Kayonza and Ngoma districts ▪ Installation of the distribution Management system. ▪ Energy efficiency strategy awareness campaign.

NST1 / Sector outcome indicators	Sector priority outputs
	▪ 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.
4. Petroleum strategic reserves increased to cover three months' supply.	▪ 28M liters storage facilities added to the national storage reserves ▪ Rwabuye fuel storage facility: Complete procurement of the private investor to rehabilitate, operate and transfer of the facility. ▪ 20% completed expropriation along the buffer zone for the 60 million liters Strategic fuel storage facility.
Social Transformation Pillar	
5. Increase access to electricity on grid by 83,000 from 1,021,734 household connections (38 %)[1] as of end April 2019 to approximately 1,104,734 (41%) connections and 230 socio and economic productive areas by end June 2020.	This outcome highlights projects to extend the grid and constructions of interconnection transmission lines: ***Projects to be completed by 2019/20 FY*** ▪ Construction of new 1,019.31 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. ▪ Connect 230 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 training centers), markets, telecom towers Tea Factories and IDP model villages. ▪ 197.8 Km of High Voltage (HV) transmission (interconnectors & Domestic lines) lines. ***Projects to be completed2019/20 FY*** ▪ 220 kV HV TL Rusumo-Rilima-Shango (117.8km); 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); ***Projects to be completed beyond 2019/20 FY*** ▪ 110kV Mukungwa-Nyabihu (29 Km) and Nyabihu substation; 110kV Transmission Line and 30 kV Distribution Line expected to be at 15% progress wheras the associated substation will be at 10 % by end June 2020. ▪ 220kV HV TL Kigoma (Rwanda) – Gitega (Burundi) (63.5 km) Transmission line and associated substation to be completed at 80% ▪ 220kV Interconnection Substations (Rwanda-DRC) constructed. - Shango and Birembo substations construction

[1] REG monthly data as end April 2019

NST1 / Sector outcome indicators	Sector priority outputs
	completed and energized. - Rubavu, Bwishyura and Kibuye substations construction completed at 60%.
6. Increase households with access to electricity through off grid from 13% (350,216 HHs)[2] by April 2019 to 15% (400,216 HHs) by June 2020.	▪ Providing access to electricity to new households using Solar PV systems (through partnership with solar private companies). 50,000 SHSs to be connected. ▪ Continue awareness campaign and monitor private companies involved in dissemination of solar home systems.
7. Existing, new major national and urban roads provided with street lighting.	▪ 20% of 631.85 km of National and urban roads served with street lights.

2.2. Sector targets and policy actions for the Fiscal Year 2019/20

Energy sector targets and policy actions for 2019/20 were identified and are detailed in **annex 2** while NST 1 core indicator targets for the energy sector are in **annex 3.**

Table2: Energy sector monitoring matrix showing planned annual targets against ESPP/NST targets

N	Indicator	Baseline	ESSP Target 2018/19	Current Status	ESSP Target 2019/20	Planned Target 2019/20	NST 1 Target 2023/24
1	Reserve margin	10%	15%	10%	15%	15%	15%
2	% losses on system	22%	20%	19%	19%	18%	15%
3	% HHs connected to grid	32.7 %	34.5	38%[3]	38%	41%	52%
	% HHs off-grid	7.80%	17%	13%[4]	23%	15%	48%
6	% of national and urban roads with lighting	50%	70	50%	80%	80%	100%
7	% of HHs depending on firewood	83.30%	83%	79.9%[5]	74.80%	74.80%	42%
8	Millions of liters of fuel storage	74	135	106	145	134	198

[2] REG monthly data as end April 2019
[3] REG monthly data as end April 2019
[4] REG monthly data as end April 2019
[5] National Institute of Statistics Data EICV 5

2.3. Budget allocated to energy sector for FY 2019/20

Energy sector has one development budget program "Fuel and Energy "and 4 subprograms as detailed in the **Annex 1**. Electricity transmission and distribution subprogram takes 70% of the total budget while generation, energy efficiency and security supply subprograms represent respectively 11 % and 31 % of the total budget respectively. As indicated the budget for transmission has continued to take a larger share due to the government prioritization for network improvement of as well as implementation of electricity access programme. However, the budget allocated to REG has reduced from 158Bn allocated for FY 2018/19 to 155Bn for the FY 2019/20.

2.4. Policy-related studies selected in 2019/20 FY and progress on 2018/19 analytical works.

During FY 2018/19 FY, there are ongoing studies that will be completed and new ones to be initiated. The main purpose of those studies is either to provide baseline situation or guidance for the implementation of the Energy Sector Strategic Plan, policy NST1. The studies to be conducted and their associated source of funds or technical support are detailed in **annex 4** while the progress on ongoing studies is in **annex 5.**

III. PROGRESS ON 2018/19 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.

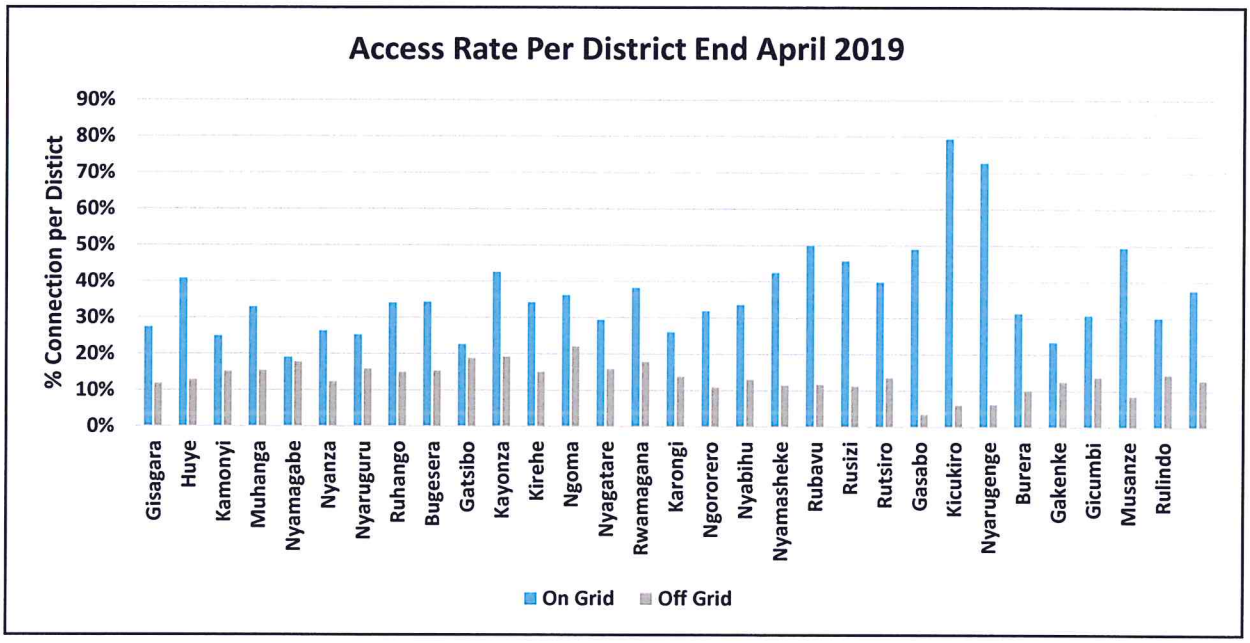
3.1. Electricity generation capacity

During the 2018/19 Fiscal Year (FY) the electricity generation capacity increased from 218.35 MW in June 2018 to 221.9 MW in April 2019. The increase is a result of commissioning of Rwaza Muko MHPP 2.6 MW and addition of smaller micro hydro power plants including upgrade of Gisenyi 0.6 MW. The total energy generated as end April is about 707.54 GWh. The current share of renewable Energy is 118.5 MW (installed capacity) equivalent to about 369.93 GWh generated in that period. In order to optimize generation planning, REG has also finalized the periodic update of the Least Cost power development plan.

3.2. Access to electricity

By end April 2019, the total number of connections to the national grid and through off grid has increased to over 1,371,950 households equivalent to 51%. It is expected that by end June 2019, this figure will be around 52%. During this fiscal year grid connections increased to 1,021,734 equivalent to (38%) Households as of April 2019. Over the same period, off grid connections increased to 350,216 (13%) households across the country. This figure is expected to increase with report of end June 2020 achievements. The national electricity grid had been extended distribution lines across the country as well as construction of high voltage transmission lines for regional interconnection and power evacuation continues.

Figure 1: Graph showing access rate per district



In a bid to effectively and efficiently achieve the universal access to electricity by 2024 as per the NST targets, REG has developed a new national electrification plan to enhance least cost electrification planning. In the same regard guidelines on solar home systems standards have been developed as well as guidelines and licensing frameworks for the development of mini grids to guide the development of the off grid sector as well as ensuring quality and transparence in service delivery.

3.3.Street Light Provision.

By the end April, more than 307.8 Km of street lighting have been installed within the city of Kigali and other areas around the country. 210 km have been completed whereas 97 km are under construction in the southern province roads of Kitabi-Ntendezi, and Pindura-Bweyeye.

3.4. Sustainable use of biomass energy solutions.

- **Promotion of clean cooking technologies** During the period July 2018 to April 2019, REG has conducted extensive awareness campaigns across the 30 districts to promote clean cooking technologies in urban and rural areas
- **Promotion of LPG:** The private sector has also been encouraged in this regard and as a result various private companies have begun establishing and investing in developing storage facilities for LPG across the country whiles others are at the planning stage. In this case 5 small scale storage facilities each with 11-ton capacity have been set up in Rwamagana, Rusiizi, Rubavu Muhanga and more are expected to be completed in the next fiscal year.
- **Development of Biomass policy and regulatory frameworks:** During this fiscal year, the action plan to implement the biomass energy strategy was completed and presented to the biomass technical working group meeting.
- The Ministry of Infrastructure in collaboration with the European Union have commissioned a feasibility study on clean cooking in schools to determine the feasible technologies and requirements to implement a pilot project on shifting from wood use to cleaner cooking solutions. The feasibility study is expected to be completed in the first quarter of 2019/20 and the project is expected to benefit more than 400 schools.

3.5. 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-liter capacity. The contract for rehabilitation of Rwabuye fuel storage facility is under tendering process and has reached at the negotiation stage with the contractor. The contractor is expected to rehabilitate, operate and transfer. In addition, construction of the 60 million national strategic reserves is ongoing to be completed by 2020, So far 32 Million liter facilities have been completed with the remaining 28 million liters expected to be completed by July 2019. 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. Currently 10% have been expropriated and 10% planned to be compensated next fiscal year`

Electricity Loss Reduction: The number of losses both technical and commercial has been reduced. This is a result of a number of ongoing projects to improve the grid network that were initiated with support of Development Partners I.e. European Union, World Bank., African Development Bank, JICA among others. During this FY 2018/19 a number of loss reduction projects have been completed and others are still ongoing. These include: strengthening of the Kigali network that included construction and completion of; Mt Kigali, Gahanga, Nzove and Ndera substations as well as upgrading Jabana and Birembo substations. Construction of 110kV transmission lines from Jabana- Mt- Kigali- Gahanga, Installation of capacity banks at Birembo, Jabana and Mt Kigali, supply and installation of smart meters as well as ongoing construction of different cabins around Kigali city. Other contributing projects completed countrywide include, construction of Rulindo and Gabiro, Substations.

Figure: Graph Showing Loss Reduction Trend.

Other Energy Efficiency Initiatives:

Implementation of the energy efficiency strategy: Various activities are in the offing including among others, developing of the minimum energy performance standards (MEPS) and labelling for different appliances such as lighting. This has also been complemented by the national cooling project implemented by Ministry of Environment where MEPS for air conditioners and refrigerators have been developed. There are also plans to establish a testing laboratory in partnership with the Rwanda Standards Board.

3.6. Cross-cutting issues

3.6.1. Capacity building

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

- **Continuous capacity building of REG staff**: During the period July 2018-April 2019, over 42 REG staff were trained in different fields including technical; fiduciary; and climate, environment and social protection.
- **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 ongoing collaboration with the IAEA in capacity building where different stakeholder institutional personnel have benefited from different trainings on energy planning.

3.6.2. Environment and Gender

Awareness continue countrywide 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. Promotion of LPG use mainly in Kigali city secondary cities and other urban areas 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.

Signed, on 20 /June 2019

MINISTRY OF INFRASTRUCTURE

Patricie Uwase

Permanent Secretary and

Chair of the Energy SWG

Ministry of Infrastructure

Norah Kipwola

On behalf of the Country Representative

Co-Chair of the Energy SWG

World Bank Group

Annex 1: Linking Sector Outcomes Budget programme and sub-programmes

Sector Outcome 1: Improved Energy Sector Coordination			
No.		**Sub-programme**	**2019/20 Budget allocated**
1	Programme 1Administration and support services	SP 1.1Administration and support sevices	15,491,164,208
Sector Outcome 1: Increased Electricity Generation Installed Capacity from 218.6MW to 275MW by June 2020			
2	Programme 2 Fuel and Energy	SP 2.1: Electricity Generation	11,039,526,107
Sector Outcome 2: Outcome 2: Improved Power Transmission and Distribution Network to increase access from 51% to 56 % and network improvement			
	Programme 2 Fuel and Energy	SP 2.2: 1Electricity Transmission and Distribution	112,228,414,502
	Programme 3: Energy Program under Districts	SP 2.3 : Energy Access	3,610,160,170
Sector Outcome 3: Enhanced Energy Efficiency and supply security			
	Programme 2: Fuel and Energy	SP 2.4: Energy Efficiency and supply security	20,291,269,107
		SP 2.3 Alternative energy source promotion	504,489,437
	Proramme 3 : Energy Programme under District	SP: Energy source Diversification	897,598,326
			164,062,621,857

Note: Budget Data extracted from Minecofin IFMIS budget data 2019/20

Annex.2 Targets and Policy Actions for the Sector Indicators Matrix (For a maximum of the selected 10 sector selected indicators)				
Sector outcome	**Sector outcome indicators (not exceeding 10 including NST1 indicators)**	**Baseline (2018/19)**	**2019/20 Targets**	**2019/20 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)	221.9	275 MW	▪ Hakan Peat to Power Plant (80 MW) completed and decommission of 30 MW So energy.
				▪ Rukarara V & Mushishito Phase II 3MW completed and commisioned
Increased fuel storage capcity by 60 million litres by 2020	storage capacity added to the national storage facilities in Litres	32 Million Litres facility completed	28M liters	▪ 28M liters storage facilities added to the national storage reserves
				▪ 20% Complete expropriation 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% to 18%by 2019/20.	%reduction of losses	20%	18%	▪ Kigali Distribution Network Strengthening by upgrading distribution lines and transformers;
				▪ Rubavu distribution network upgraded from 6.6kV to 30kV
				▪ Eastern Province Distribution Network upgraded from single phase to three phase in Ester province of Rwamagana, Kayonza and Ngoma districts
Household using traditional cooking technologies reduced.	% of HHs depending on firewood	79.9%(EICV 5)	74.50%	▪ Continue with awareness campaign in the 30 districts across the country to reduce the use of charcoal and promotion of clean cooking technologies
				▪ Technical support provided to improved cook stove producers and promoters;

SOCIAL TRANSFORMATION				
Increased household access to grid electricity from 51% to 56% by end of June 2020	Number of households connected to grid electricty	1,021,734 households connected to the grid.	83,000 new households connected to the grid. 1,019.31 km MV lines and 1,451.93 km of LV lines constructed	▪ Construct new 1,019.31 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.
		337 productive use areas connected	237 productive use areas connected.	▪ Connect 237 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 training centers), markets, telecom towers Tea Factories and IDP model villages.
		119Km of 110 kV HV transmission line constructed.	197.8 Km of High Voltage (HV) transmission lines constructed	▪ Construct 197.8 Km of High Voltage (HV) transmission (interconnectors & Domestic lines) lines. ▪ Expropriation of PAPs along the transmission lines
Increased household connections through offgrid from 13% to 15%	Number of households connected to grid electricty	350, 216 households connected through solar home systems	68,980 households connected through solar home systems	▪ Providing access to electricity to new 68,980households using Solar PV systems (through partnership with solar private companies). SHSs to be connected.
				▪ Continue awareness campaign and monitor private companies involved in dissemination of solar home systems.
New major national and urban roads provided with street lighting.	Number of Km of national and main roads served with street lights	Tender awarding notification issued	631.85 km of National and urban roads served with street lights.	▪ 20% of 631.85 km of National and urban roads installation of street lights completed..

Annex.3. NST 1 MONITORING AND EVALUATION MATRIX

No	NST 1 Outcome	Indicators	Units	Baselines 2016/17	Current status (End April 2019)	Targets		Responsibility for reporting	Data Sources
						2020/2021	2023/2024		
Economic Transformation Pillar									
16	Reduced biomass usage for cooking	Percentage of households using firewood for cooking	Percent	79.9	79.9(EICV 5)	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	27.1 (EICV5)	51% (MININFRA Reports)	71.5	100	MININFRA, Energy Sector	MININFRA reports and EICV Survey

Annex.4: Sector Priority Analytical Studies for 2019/20			
Sector outcome	**Planned Analytical Work & Duration**	**2019/20 Budget**	**Funding Source** (GoR, if otherwise, specify, also state the status i.e. Secured/ Still under mobilization)
Increased electricity generation capacity to meet demand and 15% reserve margin	Periodic update of the Least cost power development plan	NA	To be done internally
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.	300,000 EUR	European Union, secured
	Conduct Biogas programme evaluation	100,000 EUR	European Union, secured
Improved energy efficiency and energy security supply	Finalize energy efficiency standards and labeling for lighting	TBD	European Union, secured
	Finalise energy efficiency monitoring system	TBD	European Union, secured

Annex.5: Progress against 2018/19 Sector Analytical Studies

NST 1 sector outcome	2018/19 Planned Analytical Work	Brief progress	Comment/Challenges and actions to be taken if any
Household access to electricity increased to 100%.	National elctrification Plan	Task 1: Assessment of current electrification programs and Task 2: Design of of the national electrification strategy completed . Task 3 and 4 are ongoing to be completed before end of the fiscal year June 2019.	
	Review of minimum standards for solar home systems	Review of the guidelines completed and the revised draft presented in rhe setcor working gropup meeting	Validation of the revised draft by the SWG meeting
	Guidelines for minigrid development	Draft available to be presented in the SWG for validation	Approval of the guidelines is required in order to facilitate the finalisation of the simplified licencing framework for minigrids by RURA
Increased generation capacity to meet demand and 15% reserve margin	Renewable energy and energy efficiency law	Draft renewable was adeveloped to be presented in the sector working group meeting	Inputs require form the sector working group meeting
Halve the number of HH using traditional cooking technologies to achieve a sustainable balance between supply and demand of	Biomass strategy review and action plan development	Strategy was reviewed and action plan developed and discussed in the Feb 2019 TWG	Action plan to be presented in the SWG meeting for adoption

Annex.6 Progress against 2018/19 Policy actions (for the selected 10 sector indicators)

	NST 1 sector outcome	Sector outcome indicators (not exceeding 10 including NST 1 indicators)	Baseline (2017/18)	2018/19 Policy Actions	Brief Description of Progress against implementation of 2018/19 Policy actions (This should be brief with focus on fastracking progress since a detailed assessment will be captured in the Backward Looking JSRs)
	ECONOMIC TRANSFORMATION				
1	Increased Electricity generation to meet demand and reserve mergin of 15%	Electricty generated in MW	218	227	Electricty generation capacity increased to 221.9 MW Rukarara V & Mushishito Phase 1(2MW) completed and 0.6 MW completed. Other micro hydros are under construction to include; Kavumu 0.4 MW, Kigasa 0.2MW, Muhembe 0.3MW, Mukungwa II 1.0MW
	Existing and New major national and urban roads Provided with street lighting	Number of Km of street lights installed	805km	48 km of street lights installeds	210 km have been completed whereas 97 km are under construction in the southern province roads of Kitabi-Ntendezi, and Pindura-Bweyeye.
4	Petroleum strategic reserves increased to cover three months' supply	Additional Capacity of strategic oil reserves in Million Litres	74 million Litres	Additoional 60 million litres	▪Rehabilitation of Rwabuye fuel reserves. Procurement of a private contractor to rehabilitate the facility has reached at the negotiation stag. ▪ Additional 60m liter facility. 30ml structures already constructed. 28m liters structure to be completed next FY ▪Expropriation along the buffer Zone for the 60 million litres Strategic fuel storage facility completed at 10%.
5	Halve the number of HHs using traditional cooking technologies to achieve a sustainable balance between supply and demand of biomass	% reduction in biomass usage	83.30%	83	▪The number of people using traditional cooking methods(using wood) has reduced to 79.9 % (EICV 5) ▪Awareness campaign conducted in all 30 districts to promote cleaner cooking. ▪Technical inspection of existing domestic and institutional biogas systems; ▪Action plan for implementation of biomass energy strategy developed .

Improve energy efficiency and reduce losses	% of loss reduction	22	20	▪The current losses are estmated at 19% Implementation of loss reduction projects: Kigali Distribution Network Strengthening by upgrading distribution lines and transformers completed.
	Number of SWHs installed	2,853	582	The Solar Rwanda programme phased out in 2018
SOCIAL TRANSFORMATION				
Increased access to electricty for households and enterprises	Households with aaccess to grid electricty	793,966 Households (32,7%) connected	Increase Household connectionsfrom 32,7% -34.5%	▪ By end April house hold connectionections increased to 1,021,734 equivalent to (38%) connections ▪ 337 productive use areas connected
	Households with access to offgrid electricty	10%	12%	▪ Off grid connections increased to 350,216 (13%) households