Rwanda Energy Group

REG

ANNUAL REPORT
For Rwanda Energy Group for the Year 2021-2022

July 2022

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FOREWORD

It is with great pleasure that the Rwanda Energy Group Ltd presents its Annual Report for the fiscal year 2021/2022. This report highlights the REG's key achievements in its strategic objectives including among others electricity generation, electricity transmission and distribution, electricity access, operations and maintenance and others. During the Fiscal Year 2021/2022, concerted efforts were directed towards developing and providing reliable and affordable energy to ensure adequate service delivery and sustainable development.

In view of this, Rwanda Energy Group Ltd continues to strategize on how to achieve the targets of 2024 for increasing electricity access to 100% of all Rwandan households, reduction of biomass energy uses to 42% as well as increasing Rwanda's electricity generation capacity to 556MW. As a result, households' connections to electricity reached 72% by the end June 2022 from 64.53% of June 2021, and the total installed power generation capacity reached 276.07 MW from 238.37 MW in same time horizon.

REG Annual Report consolidates performance of REG holding and its R subsidiaries companies, Energy Utility Corporation Limited (EUCL) and Energy Development Corporation Limited (EDCL). This report is part of the external dissemination of our commitment to transparency and open communication to all our stakeholders, as well as to the wider public interested in our activities.

Please, enjoy reading this report and get updates and richness of the energy sector. We also hope it is an opportunity for our valued stakeholders to know our leading-edge operations, services, and values.

Ron Weiss

Ron Weiss
Chief Executive Officer

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1. EXECUTIVE SUMMARY

This report highlights the key achievements realized in the Fiscal Year 2021/22 by the Rwanda Energy Group Ltd, through its subsidiaries EDCL and EUCL, against targets that were agreed upon and in alignment with national targets stipulated in various strategic documents such as Vision 2050, NST1, ESSP, REG Imihigo and other high-level decisions as well as the REG strategic plan.

- In power generation, the total installed capacity increased from 238.37 MW to 276.07 MW. The additional capacity is from the commissioning of Hakan Peat and Rukarara V power plant with the installed capacity of 35 MW and 2.7 MW respectively. The highest annual peak demand was 178.71 MW observed in June 2022, compared to 164.4 MW observed in April 2021. The demand growth this Fiscal year is 8.7% while it was 8.8% in the previous fiscal year 2020/2021.
- By the end of June 2022, the total length of the transmission network, including 220kV and 110kV lines, was recorded at 973.14 km across the country. The 110kV transmission line Mukungwa Nyabihu was commissioned in April, 2022 and added 28.75 Km on the network.
- The distribution network increased with a total length of 575.8 Km of medium voltage lines and 1,076.1 Km of low voltage lines, bringing the total distribution network from 27,217.9 to 28,985.8 Km, of which 10,520.1 Km of medium voltage and 18,465.7 Km of low voltage.
- During the fiscal year 2021/2022, a total of 127,742 customers were connected to the National grid of which the productive users were 463. In addition to this, a total of 116,713 households were connected to off-grid electricity. By the end of June 2022, the electricity access rate had increased from 64.53% to 72% as reported by the end June 2022.
- In this reporting financial year, REG/EDCL once again gave focus on raising awareness among the citizens on the use of modern cooking technologies transitioning from traditional cooking fuels and 184,330 Improved Cook Stoves were disseminated
- On the side of operations, power system performance and reliability remained generally stable. the total network collapse increased from 1 blackout in 2020/21 to 4 blackouts in 2021/2022, and the recorded transmission network availability in the year of 2021-22FY was 99.31% from 99.41% of 2020-2021
- Countrywide, the distribution network performance is still stable though with slight increase as compared to last year. The System Average Interruption Duration Index (SAIDI) was 18.59 hours per year from 18.2 hours per year of the previous year and the average number of interruptions that a customer experienced (SAIFI) was 45.67 times per year from 44 times per year.
- The average total power losses for this financial year (technical and non-technical) decreased to 18.1% from 19.26 previous year, and the recorded monetary loss increased to 473,094,992 from 441,882,913 Frw.
- The total electricity billed for both prepayment and post payment customers, including exports to Uganda through Cyanika-Kisoro, increased to 871,512,132.73 from 766,606,204.22 kWh of the last year and respectively the bill increased to Rwf 176,190 billion from 157.906 Rwf billion.
- The total collection on prepayment, post payment and works were Rwf 175,631,654,494 compared to Rwf 176,190,227,147 of total bills.

2. INTRODUCTION

The Rwanda Energy Group (REG) with its subsidiary companies, Energy Development Corporation Limited (EDCL) and Energy Utility Corporation Limited (EUCL), was incorporated in July 2014 as part of the wider Government reform programme for the energy and water sectors in Rwanda. The overarching objective of the reform was to ensure that the energy sector is expanding the electricity generation capacity efficiently to meet the growing demand in the country.

The REG Holding therefore has the corporate mandate to provide overall coordination of utility operations and energy investment and development plans without operational responsibilities, while EUCL is to ensure efficiency in utility operations and end-users service delivery and EDCL is to ensure timely implementation and cost-efficient development of energy projects.

REG's overall goal is to achieve fast electrification levels for industry and household usage based on a sustainable and affordable tariff. In its strategic plan (2019 – 2024), REG has articulated the following ten industry and institutional focused objectives to guide the day-to-day operations.

1. **Generation:** Build a balanced and cost optimized Generation mix sufficient to meet growing Demand.
2. **Transmission:** Plan and Build infrastructure to ensure timely alignment of current and future Generation with National Demand
3. **Distribution:** Develop and Operate an Optimized Distribution Network to enhance Utility efficiency and reliability of power supply.
4. **Electricity Access**: Achieve 100% National Access to Electricity in 5 years (by 2024). using Grid and Off-grid Solutions
5. **Tariff evolution:** Develop a clear tariff trajectory with clear milestones based on effective engagement with IPPs, financiers and other stakeholders to achieve affordable tariff.
6. **Operation & Maintenance:** Ensure optimized plant and network operations for excellent service reliability, with most economical plan.
7. **Corporate Governance:** Structure and equip REG to competently implement strategy.
8. **Communication Strategy:** Build an awareness of REG's products and services to enlist commitment of stakeholders to the vision and mission.
9. **Capacity Building:** Enhance staff's professional and technical capacity to support REG consistently deliver on its mission.
10. **Commercial strategy:** To serve our customers and ensure their satisfaction through our culture of excellence.

This report highlights key achievements registered in the period between July 2021 and June 2022 in alignment with key sector strategic objectives outlined above, set in line with the National strategic documents such as NST1, REG Strategic Plan 2017 – 2024 (REGSP) and other sector priorities as adopted in different national fora such as National Leadership Retreat (NLR), National Umushyikirano Council (NUC), Cabinet decisions and other high-level commitments. The purpose of this report is therefore to provide information that depicts Rwanda Energy Group performance to the public, development partners and other stakeholders.

More specifically, every year REG signs a performance contract, Imihigo, with MININFRA for the implementation of key projects geared towards meeting the short- and medium-term sector targets as set in the strategic documents.

For the FY 2021/2022, REG signed to deliver on 18 outputs as details in annex 1 of this report . The outputs were grouped under 5 key outcomes which are:

1. Electricity Generation Installed Capacity increased from 238.368 MW to 276.07 MW against target of 292.368 MW by June 2022
2. Improved power transmission and distribution network for reliability of power supply
3. Access to Electricity increased from 64.53% to 72% against 70% target as of end June 2022
4. Enhanced Energy use Efficiency: Reduction of Biomass use
5. Improved Transmission and Distribution capabilities and availability of the network

Detailed implementation progress for REG Imihigo is provided in *annex1*.

In addition to this, REG signed for Joint Imihigo with 4 outputs grouped under 2 outcomes which are:

1. Access to Electricity increased from 64.53% to 72% against 70% target as of end June 2022
2. Enhanced Energy use Efficiency through Reduction of Biomass use

These outputs for Joint Imihigo were already part of the overall Imihigo.

3. THE ACHIEVEMENTS FOR THE FISCAL YEAR 2021/2022

Access to safe, reliable, affordable, and cost-effective energy infrastructure is essential to achieve the levels of growth defined under the National Strategy for Transformation (NST1) and Vision 2020. It is planned that by 2024, universal access to electricity shall be attained at 100% (52% on-grid and 48% off-grid).

In order to attain the desired development impact of the above programs and other strategic interventions, the REG implemented different projects in the 2021/2022 and key achievements are provided in the following paragraphs. The status below, therefore, provides an insight of how the energy sector performed towards its ambitious targets.

3.1. Power generation

During the year ended in June 2022, the total installed capacity increased from 238.37 MW to 276.07. The additional capacity is from the commissioning of Hakan Peat and Rukarara V power plant with the installed capacity of 35 MW and 2.7 MW respectively.

The total installed capacity is composed of domestic capacity with 257.968 MW and 18.1MW from imports& shared power plants totalizing 276.068 MW.

The highest annual Peak demand registered was of 178.71 MW, observed in June 2022, compared to 164.4 MW observed in April 2021 and energy generation growth was 12.03% compared to 8.59% of the previous fiscal year of 2020/2021. Due to high demand increase and water shortage for Hydropower sources, thermal generation has increased at 110% compared to 2020/201 FY.

Among 46 domestic power plants, 43 of them are on grid while 3 are off grid.

The Overall performance of hydropower plants is evaluated to 91.98%, the overall performance of methane gas power plants is of 59% including KP1, performance of Peat power plant is of 29% excluding Hakan Mamba which is still under commissioning and testing while the performance of

thermal power plants was not evaluated because they are assessed by specific fuel consumption and availability and run as emergency plants.

3.1.1. *Energy generated by plants' owners*

Based on ownership of power plant, IPPs power plants contribution increased to 60% from 52% of the previous year, while the GoR owned power plants contribution was reduced to 31% from 36% of the previous year and import & shared resources contribution reduced as well from 12% to 9% compared to previous year.

Table 1: Energy generation by plants' owners

Source of Generation	*Generated Energy (kWh)*			
	FY 2020/2021	*% FY 2020/2021*	*FY 2022/202*	*% FY 2021/2022*
IPPs Power Plants	493,755,909.12	52%	642,902,300.20	60%
GoR Power Plants	348,826,411.31	36%	330,142,988.16	31%
Import + Shared	112071628.3	12%	96,535,846.81	9%
Total Generation	**954,653,948.70**	**100%**	**1,069,581,135.16**	**100%**

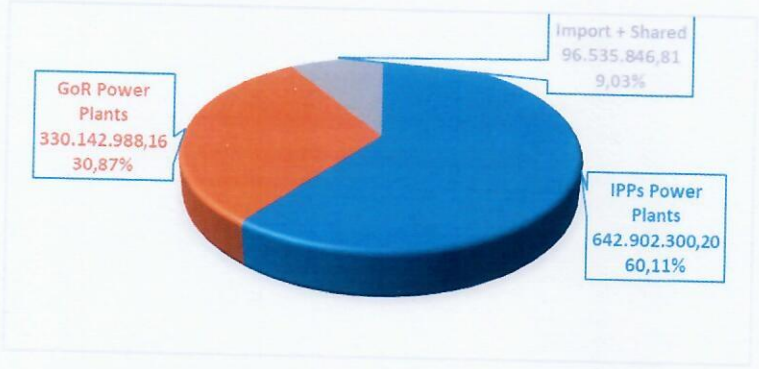

Figure 1: Generation share by power plant (GoR or IPP)

3.1.2. *Installed generation capacity by source*

Hydropower and thermal power continue to dominate with the highest shares of the installed generation capacity of 107.328 MW equivalent to 38.88% and 58.8 MW equivalent to 21.30% respectively, while solar power contributes the least 4.36% as per the table and graph below:

Table 2: Summary of capacity by source as of June 2022

Types	*Installed Capacity*	*Percentage*
Hydropower	107.328	38.9%
Thermal Power	58.8	21.3%
Solar Power	12.05	4.4%
Methane Gas	29.79	10.8%
Import & shared	18.1	6.6%
Peat Fired PP	50	18.1%
Total	**276.068**	**100%**

Table 3: Summary of energy mix during FY 2021/22

ENERGY MIX		
Technology	*Generation /kWh*	*%*
Hydropower	461,517,424.32	43.15%
Thermal power	194,510,874.00	18.19%
Methane Gas	218,596,397.74	20.44%
Solar	17,525,102.65	1.64%
Peat Power	80,895,535.64	7.56%
Imports & shared	96,535,846.81	9.03%
Total Generation	*1,069,581,181.16*	*100.%*

3.1.3. *Energy generated by source of energy (GWh)*

The corresponding energy generated by hydropower decreased to 461.52 from 494 GWh. and its share in the energy mix reduced to 43.1% from 51.8% this year. On the other hand, energy generated from thermal power plants increased to 194.51 from 92.7 GWh and the corresponding share in the energy mix increased to 18.2% from 9.7%. The contribution of Methane increased from 213.6 to 218.6 GWh (20.4%), Peat contribution increased from 30.6 to 80.9 GWh (7.6%), Solar contribution reduced from 18.1 to 17.53 GWh (1.6%), import increased from 29.7 to 31.98 GWh (3%) while energy from regional shared plants reduced from 82.3 to 64.56 Gwh (6%). The graph below shows the changes in the energy mix overtime.

Table 4: Energy generated by source of energy from 2015-2021 (in GWh)

Details	Hydro	Methane	Thermal	Solar	Peat	Import	Shared	Total
2015-2016	271.9	114.5	174.5	13.9	1.4	56.9	18.9	**652.1**
2016-2017	277.2	197.6	129.6	14.5	14.3	22.9	56	**712.1**
2017-2018	333.8	195	138.7	16.9	15.3	31.5	50.2	**781.4**
2018-2019	337.5	213.1	158.7	18.1	31	32	63.9	**854.2**
2019-2020	387	213.6	135.9	17.7	19	30.2	69.2	**872.6**
2020-2021	494.4	206.8	92.7	18.1	30.6	29.7	82.3	**954.7**
2021-2022	461.52	218.60	194.51	17.53	80.90	31.98	64.56	**1,069.58**
Contribution to energy Mix (%)	**43.1**	**20.4**	**18.2**	**1.6**	**7.6**	**3.0**	**6.0**	**100**

3.1.4. *The Least Cost Power Development Plan*

The least cost power development plan was revised and updated in June and December 2021. The purpose of the plan is to have a systematic development of the Rwanda Generation Resources prioritizing the least cost options, to ensure that the tariff affordability objectives are being optimized. A revision June 2022 is under way and key updates therein are:

- Update and realign CoDs.
- Consideration for Battery storages
- Integration of Generation Resource Assessment and external LCPDP review
- Waste/biomass
- Solar PV integrating storage
- Revised cost assumptions for solar PV

3.2. Electricity transmission

By the end of June 2022, the total length of the transmission network, including 220kV and 110kV lines, was recorded at 973.14 km across the country. The 110kV transmission line Mukungwa Nyabihu was commissioned in April 2022 and added 28.75 Km on the network.

3.2.1. *Transmission Line Projects status*

More progress was also made in the construction of the following high voltage transmission lines projects:

- ***Rwanda-Burundi Transmission line and associated substations*** registered overall project progress currently stands at 95% where the transmission line is at 93% and the Substation is at 98.6%.
- ***Rusumo-Bugesera-Shango transmission line***

  The project will evacuate power from Rusumo regional hydro power plant.

  The overall project progress stands at 95.6% with substation component completed 100% and transmission lines at 91.2% whereby stringing for Bugesera-Shango section is complete and Rusumo-Bugesera section is in progress

- ***Bwishyura-Kigoma-Rwabusoro transmission line with extensions of associated substations***

  The 79.96 Km project will evacuate methane gas power from Shema Kivu Lake Power Plant to the existing high voltage transmission line (220kV Rwanda- DRC) and linking the existing substations of Bwishyura and Rwabusoro via Kigoma Substation. The project scope comprises of: (1) construction of 4.5 Km line linking Shema Power Plant to the existing Rwanda-DRC line; (2) construction of 11/110 kV SPLK Substation; (3) construction of GIS Substation; (4) construction of 75.55 Km of 220 kV transmission line Bwishyura-Kigoma-Rwabusoro and (5) extension of Kigoma substation.

  Overall progress stands at 35.2% with only temporary substation which is at 86.81 and the 1st section 4.5Kms connecting Shema Gas to the existing TL Rwanda-DRC that stands at 86.96% (Stringing ongoing)

- **Mukungwa-Nyabihu Transmission Line:**

  The 28.75Km of 110kV power line to evacuates power from Mukungwa plant through Nyabihu substation and is expected to improve reliability of power supply to the Northern and Western parts and serve industrial parks in Musanze and Nyabihu.

  The six components project (1) Mukungwa-Nyabihu transmission line which was completed and energized; (2) Nyabihu; Mukungwa; Rubavu and Camp Belge substations were also completed and energized, while Musha substation was still at 90%.

  The overall project progress for both transmission line stands at 100% (substations are at 98.5% and transmission line is at 100%).

3.2.2. The Transmission Plan

The transmission network development plan was revised and updated, and the key updates incorporated are the following:

- The total length of Transmission Lines has been changed from 971.75km to 994.2km
- Upgrade of Rukarara SS (from 2*10MVA to 2*20MVA) is proposed.
- The operational for the following projects are changed according to LCDP:
  1. 110kV Nyabarongo II-Rulindo(Updated from 2021 to 2024)
  2. 220kV Rusumo-Bugesera-Shango (Updated from 2021 to 2023)

3. 220kV Rusizi III-Kamanyola-Bwishyura (Updated from 2024 to 2026)

- The following projects accepted by AfDB to be funded:
  1. 110kV Gicumbi Cut-In, Cut-Out
  2. 220kV Kirehe Cut-In, Cut-Out and 110kV Kirehe-Rwinkwavu
  3. 110kV Nyagatare-Gabiro
  4. 110kV Rukarara-Huye-Gisagara
- The status of 110kV Mukungwa-Nyabihu Project has been changed from Ongoing to Existing

3.3. Electricity distribution

About 14 years ago, the Government of Rwanda established the Electricity Access Rollout Program (EARP) to distribute power from the transmission nodes to the end-users, whilst bridging the rural-urban electricity access divide.

The distribution network increased with a total length of 575.8 Km of medium voltage lines and 1,076.1 Km of low voltage lines, bringing the total distribution network from 27,217.9 to 28,985.8 Km, of which 10,520.1 Km of medium voltage and 18,465.7 Km of low voltage.

3.3.1. The Distribution Plan

The distribution network development plan was revised and updated mainly to include the following:

- Updates on anticipated major load demand on distribution network from 2022-2024. i.e. All hubs considering increments on substations and feeders
- Assessment of feeder loading
- List of distribution network strengthening projects in pipeline. i.e. Funded and unfunded projects
- Investment required for distribution network strengthening projects

3.4. Electricity access

The Government has committed to meet universal access to electricity, with an estimated 3.7 million households to be connected by the year 2024. By the end of June 2022, the electricity access rate countrywide had increased to 72% from 64.53%

A total of 127,742 new customers were connected to the National grid of which the productive users were 463. This brought the cumulative number of customers connected to the grid from 1,249,283[1] to 1,377,025 (1,372,194 prepayments and 4,831 post payment), including 8,414 Productive users. The computed access rate of households connected on grid is 50%.

In addition to this, a total of 116,713 households were connected to off-grid electricity, bringing the cumulative total to 598,762 households from 482,049 HHs, equivalent to access rate of 22% from 17.61%. These off-grid connections are mainly rooftop solar panels, and they are installed by the independent private companies on a willing-buyer-willing-seller basis.

[1] June 2021 baseline changed due to data clean up exercise, during which customers migrated from SUPRIMA to PVS; and inactive clients as well as duplicate clients have been omitted from the list.

The performance of REG in implementing access Imihigo signed with MININFRA was therefore achieved at 103%.

3.4.1. The Access Plan

In June 2021, December 2021 and June 2022, the access plan was revised and updated mainly to include the following:

- Access rate as of end June 2022
- NEP Validation results across all districts
- The Impact of Available development partners' funds on universal access by 2024

3.5. Operations and maintenance

3.5.1. Blackouts

Due to misbehaving of new commissioned power plant of Hakan during testing and commissioning, the number of total network collapse in 2021-2022 was increased from one (1) blackout in 2020-2021 to four (4).

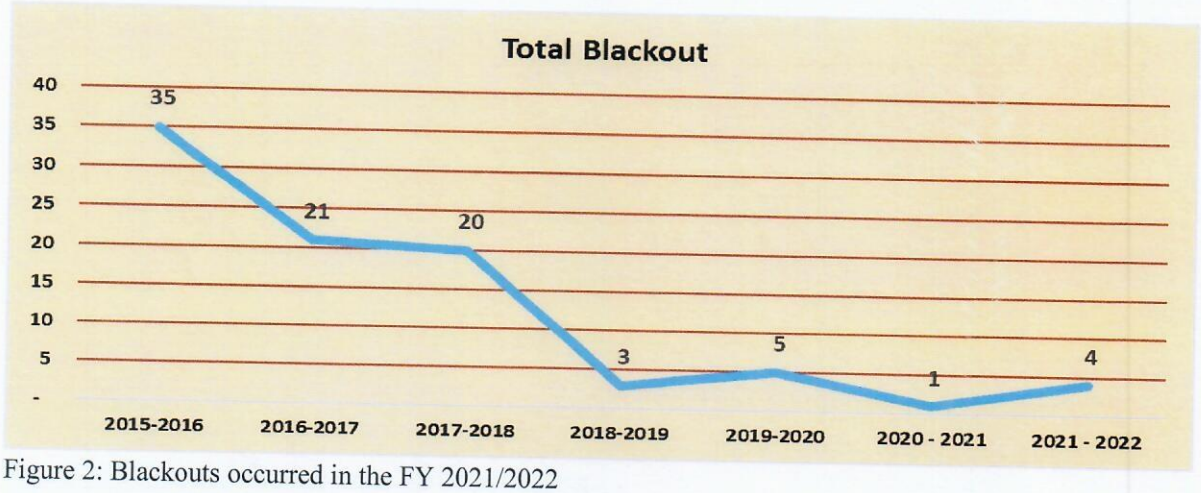

Figure 2: Blackouts occurred in the FY 2021/2022

3.5.2. Network availability

The recorded transmission network availability in the year of 2021-22FY was 99.31% from 99.41% in 2020-21 as shown in the table below:

Table 5: Transmission line availability in 2020-2021

TRANSMISSION LINE AVAILABILTY 2021-2022					
		Outage duration min		1,054	
Q1		Days	Hours	Difference	Availability in %
	Period duration	92	132480	131,426	99.204%
		Outage duration min		1,625	
Q2		Days	Minutes	Difference	Availability in %
	Period duration	92	132480	130,855	98.773%
		Outage duration min		648	
Q3		Days	Minutes	Difference	Availability in %
	Period duration	90	129600	128,952	99.500%
		Outage duration min		254	

Q4		Days	Minutes	Difference	Availability in %
	Period duration	91	131040	130,786	99.806%
		Outage duration min		3581	
		Days	Minutes	Difference	Availability in %
Annual	**Period duration**	**365**	**525600**	**522,019**	**99.319%**

3.5.3. Losses

The average total Losses (Technical and non-technical losses) for this FY 2021/2022 were evaluated to 18.1% compared to 19.26% of the previous year 2020/2021 and 19.12% of the FY 2019/2020 and 19.39% in 2018/19, as per the graph below

Equation 1: Losses equation

The average total power losses are calculated as follow:

$$Losses = \frac{(DG \mid I) \quad (Pre \mid Po \mid Ex)}{DG + I}$$

Where:

DG: Domestic Generation.
I: Import
Pre: Prepaid Energy
Po: Postpaid Energy
Ex: Export

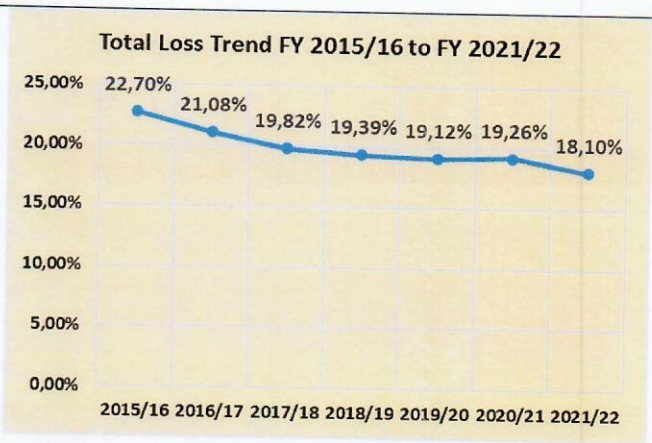

Figure 3: Trend of total energy losses

3.5.4. SAIDI and SAIFI

Countrywide, the distribution network performance did not improve compared to the previous year given that the System Average Interruption Duration Index (SAIDI) was 18.59 hours per year compared to 18 hours in the previous year and the average number of interruptions that a customer experienced (SAIFI) was 45.67 times per year compared to 44.4 in the previous year.

Table 6: Brief performance on distribution SAIDI and SAIFI

	Units	*Baseline July 20- June 21*	*Smart*	*Stretch*	*Achieved July 21 - June 22*
SAIDI	Hours /Year	18	16.8	16.2	**18.59**
SAIFI	Times/ Year	44.4	42.18	36	**45.67**

3.5.5. Outages

During this financial year, a total number of recorded outages is 10,993 from 12,049 of previous year and were caused by Erath Fault, Overcurrent, Under Frequency, Emergency works, planned works, Emergency Load shedding and Overload as shown by the table below and the corresponding monetary loss increased from 441,882,913 to 473,094,992.

Table 7: Outages occurred in the FY 2021/2022

Cause	*Frequency*	*Duration (hr)*	*Energy not served (MWh)*	*Financial Loss*	*Freq%*
Earth Fault	3584	496.7	795.5	147,976,197	33%
Overcurrent	3551	487.8	677.2	125,959,778	32%
Under Frequency	3327	326.4	463.5	86,202,751	30%
Emergency works	319	155.6	179.6	33,405,486	3%
Planned works	146	235.0	358.3	66,652,660	1%
Emergency Load shedding	59	24.3	64.6	12,020,498	1%
Overload	7	0.4	4.7	877,623	0%
Grand Total	**10,993**	**1,726.1**	**2,543.5**	**473,094,992**	**100%**

The outages frequency is presented as follow:

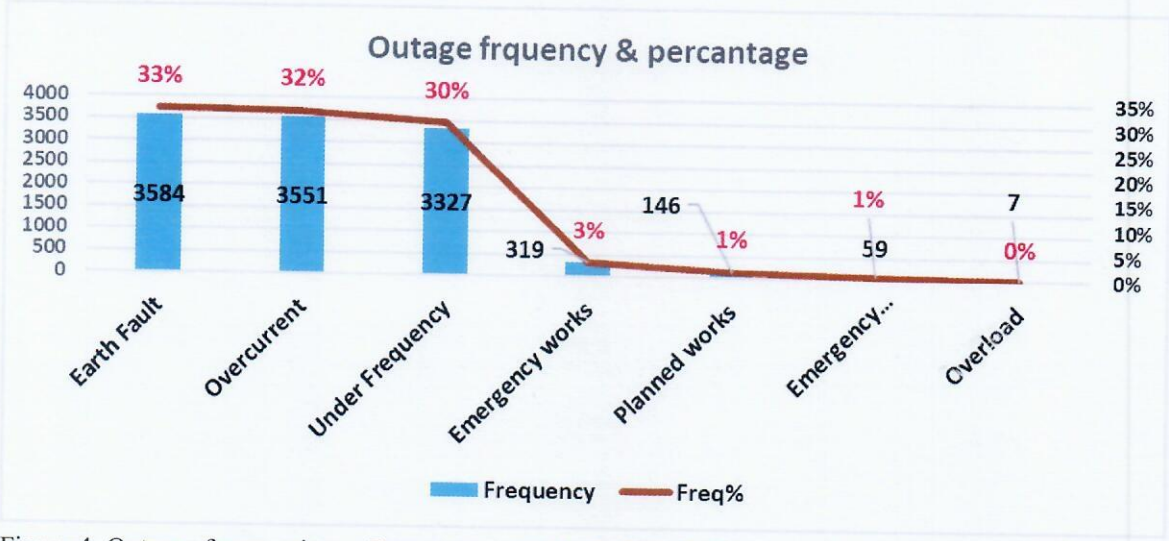

Figure 4: Outages frequencies vs Percentages on the FY 2021/2022

3.6. Corporate governance

The functional strategies identified in REG strategic plan can only be realized by putting in place structures, systems policies and procedures that support efficient implementation and the need to attract, develop and retain staff with the requisite skills for effective implementation. In this regard eight (8) meetings of the Board of Directors were held successfully, and different resolutions of the Board were shared with the respective departments for implementation. Legal opinions were delivered to the Management and to the Board on regular basis.

The REG/EUCL/EDCL organizational structure review has been approved to best fit organization mandate and include lessons learnt in in the organization while enhancing efficient & effective operations and coordination, as well as monitoring and evaluation.

3.7. Communication and public relations

During the fiscal year 2021/2022, communication activities implemented aimed at enhancing the corporate positive image and raising public awareness as well as ensuring satisfaction of customers by timely responding to their queries and claims. The following activities were achieved:

- **Enhancing positive image:** With an aim to ensure positive image the communication team intensified publication of success stories in media. A total of 224 positive news stories related to REG achievements and projects were published in local media during the year 2021/2022. These stories were published in local media free of charge thanks to the good relationship between REG and media. Most of the published stories were related to electrification projects, off-grid, and clean cooking programs as well as awareness on safety and fight against theft of electricity and electrical materials. Daily monitoring of media publications was also done to ensure that all negative issues reported in media are shared with concerned departments and handled accordingly.

- **Awareness raising activities**: REG used talk-shows and advertorial spots on Radios and TVs, to ensure education and awareness on the use of off-grid solutions, clean cooking technologies and safety among others.

  A total of 12 talk-shows were held on local community radios and TVs for free thanks to the good relationship with media while 3 publicity audiovisual spots were produced and broadcasted on different TV and radios.

- **Using social media in customer service**: A close follow up on customers queries submitted via social media and immediate response to these queries was key among the communication teamwork during the year 2021/2022. The aim is to ensure satisfaction of customers seeking support and information on electricity services. Feedbacks submitted by the customers on the same social media indicate that REG is much appreciated when it comes to caring for customers' issues. Below are some examples of the feedback screenshots:

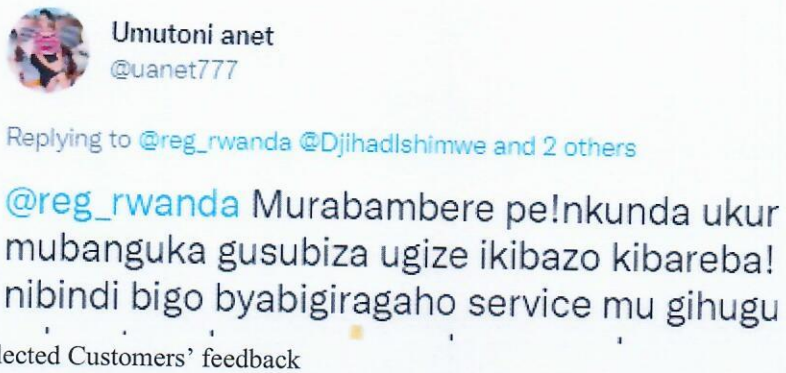

Figure 5: Selected Customers' feedback

- **Using company's platform for visibility and hub of REG information:** REG website and its various social media platforms including Twitter, Facebook, Flickr, Instagram, LinkedIn and Youtube accounts were used to share various information regarding projects, achievements, energy statistics, power outages and other useful documents containing information to be shared with the public. A quarterly newsletter was also regularly published on REG website and social media.
- **Corporate Social Responsibility**: Different activities and events were sponsored to promote REG's image and visibility include

  - Connection of a village households neighboring Nkumba Ubutore training Center Installation of streetlights in Nkumba Ubutore training center
  - Under CSR, REG also supports Imbuto Foundation in the facilitation of girls to pursue technical and vocational education.
  - Every year, REG contributes to Ibuka activities to commemorate the Genocide against Tutsi and provides monthly electricity tokens to Gisozi Genocide Memorial Site.
  - REG also has 3 professional sports team which increase the company's visibility (REG BBC, REG VC Men, REG VC Women). The three teams won different tournaments and contributed to the branding and promotion of REG visibility in the public. During this year, REG BBC won the 2022 BAL Sahara Conference games and qualified for the 2022 Basketball Africa League (BAL) playoffs which took place in Kigali. REG VC won Rutsindura memorial tournament.

- **Staff sensitization on integrity**: In a bid to sensitize staff on integrity, better service, and fight against corruption, 2 phases of Itorero were organized and attended by more than 500 staff. During this Itorero, staff we taught Rwanda's history and traditional values. They were also sensitized on the effects of corruption and the need to avoid and fight it and uphold unity while fighting genocide ideology.

3.8. Capacity building

Human capacity development has been at the forefront of interventions within the energy sector. REG continues to ensure adequate skillsets among its staff to ensure that all Rwandans are served with electricity by end of 2024.

We cannot talk of the capacity building without considering the recruitment of staff to be trained and their compensations on services rendered. The following were accomplished in the sphere of human resources management:

i. Staff recruitment: 60 new EDCL staff, 77 New EUCL Staff and 16new REG Holding Staff were recruited
ii. Capacity building: 297 EUCL staff, 195 EDCL staff and 36 REG Holding staff were trained in various fields

3.9. Commercial services

3.9.1. Electricity billing and revenue collections

During the fiscal year 2021-2022, the total amount billed including Uganda Export & works equivalent to Rwf 176,190,227,147 compared to Rwf 157,906,289,288 bills in 2020-2021 which represents 12% increase and Rwf 137.91 billion bills in 2019/2020 which represented 14.49% increase. The total collection on prepayment, post payment and works were Rwf 175,631,654,494 compared to Rwf 176,190,227,147 of total bills.

Table 8: Billings vs collections in the FY 2021/2022

Billing vs Collections for the first Financial Year 2021/2022									
Billing									
	Post Paid	Pre-paid	Works	Dark Fiber	UETCL	SOCODEE SA	OWN CONSUMPTION	PUBLIC LIGHTING	Total Amount Billed
Jul-21	7,456,585,288	5,778,302,982	198,319,909	-	37,988,279	82,360,187	97,206,340	346,459,906	**13,553,556,645**
Aug-21	7,560,152,721	5,955,284,519	126,884,899	94,562,579	39,726,753	9,067,104	103,606,702	359,597,362	**13,785,678,575**
Sep-21	7,893,455,303	6,079,246,382	106,656,347	-	40,410,896	-	101,886,682	370,958,060	**14,119,768,928**
Oct-21	7,762,898,784	6,361,450,693	38,035,421	-	43,573,781	-	103,481,161	346,138,782	**14,205,958,679**
Nov-21	7,883,691,469	6,114,865,293	145,078,522	-	44,419,658	-	96,973,203	357,281,179	**14,188,054,942**
Dec-21	7,762,691,068	6,649,614,972	216,480,115	-	42,605,806	-	102,119,612	363,388,527	**14,671,391,961**
Jan-22	7,779,304,378	6,396,139,316	203,004,898	-	45,003,265	-	121,130,141	361,521,298	**14,423,451,858**
Feb-22	7,796,768,571	6,222,585,335	576,854,535	130,138,572	39,160,310	-	106,828,646	363,489,953	**14,765,507,324**
Mar-22	8,339,938,297	6,857,160,361	419,803,165	-	42,339,901	-	143,824,839	352,898,000	**15,659,241,724**
Apr-22	8,108,645,334	6,822,011,674	287,513,835	-	47,484,166	-	136,254,451	361,082,080	**15,265,655,008**
May-22	8,386,962,648	6,977,080,940	328,426,063	-	49,081,113	-	136,487,842	360,774,425	**15,741,550,764**
Jun-22	8,491,381,698	7,043,007,004	228,202,336	-	47,819,703	-	140,069,658	365,625,548	**15,810,410,741**
Total	**95,222,475,557**	**77,256,749,471**	**2,875,260,045**	**224,701,151**	**519,613,632**	**91,427,291**	**1,389,869,278**	**4,309,215,119**	**176,190,227,147**
Collection									
	Post Paid	Pre-paid	Works	Dark Fiber	UETCL	SOCODEE SA	OWN CONSUMPTION	PUBLIC LIGHTING	Total Cash Collections
Jul-21	6,914,749,209	5,778,302,982	198,319,909	-	39,278,157	-	97,206,340	346,459,906	**12,930,650,257**
Aug-21	7,444,715,946	5,955,284,519	127,132,244	-	40,989,641	-	103,606,702	359,597,362	**13,568,122,350**
Sep-21	8,253,540,632	6,079,246,382	106,656,347	196,780,349	41,400,708	20,294,800	101,886,682	370,958,060	**14,697,919,218**
Oct-21	6,675,869,532	6,361,450,693	38,035,421	-	44,473,895	17,570,223	103,481,161	346,138,782	**13,137,399,764**
Nov-21	7,872,624,497	6,114,865,293	145,078,522	-	45,312,543	-	96,973,203	357,281,179	**14,177,880,854**
Dec-21	8,726,590,663	6,649,614,972	216,480,115	-	43,337,277	-	102,119,612	363,388,527	**15,636,023,027**
Jan-22	6,474,606,418	6,396,139,316	203,004,898	-	44,827,950	-	121,130,141	361,521,298	**13,118,578,582**
Feb-22	5,740,797,077	6,222,585,335	576,854,535	-	39,322,293	56,472,826	106,828,646	363,489,953	**12,636,032,065**
Mar-22	10,589,259,587	6,857,160,361	419,803,165	-	43,015,342	-	143,824,839	352,898,000	**17,909,238,455**
Apr-22	8,394,130,021	6,822,011,674	287,513,835	-	48,362,577	-	136,254,451	361,082,080	**15,552,018,106**
May-22	7,833,848,748	6,977,080,940	328,426,063	-	-	-	136,487,842	360,774,425	**15,139,355,751**
Jun-22	9,857,226,725	7,043,007,004	228,202,336	-	-	-	140,069,658	365,625,548	**17,128,436,065**
Total	**94,777,959,054**	**77,256,749,471**	**2,875,507,390**	**196,780,349**	**430,320,382**	**94,337,849**	**1,389,869,278**	**4,309,215,119**	**175,631,654,494**
	5,699,084,397	Money on Public lighting & Own Consumption							**5,699,084,397**
Percentage	**106%**	**100%**	**100%**	**88%**	**83%**	**103%**	**100%**	**100%**	**103%**

Note: Note: Postpaid Collection rate including Money on Public lighting of (4,309,215,119), EUCL own Consumption (1,389,869,278) & VAT exclude on some Public institutions that pay us less VAT

3.9.2. Revenue Protection Program (RPP)

The Revenue Protection Program (RPP) Funded by the World Bank has been implemented and 2500 smart meters have been installed at the premises of Postpaid Customers, 1,600 smart meters to be purchased in EUCL Budget. An additional 1000 smart meters has been acquired from the World Bank to cover the remaining customers. Currently the automated Metering System (MDM) is now linked to the billing system (CMS) and results yielded will enable data from customers' meters to be pushed into Customer Management System.

3.10. Energy Efficiency

About 83% of Rwandan Households use traditional biomass fuels for cooking and heating. However, the NST1 targets to reduce the use of these fuels from 79.9% to 42% by 2024. REG/EDCL had opted to continuing focus on awareness campaigns on the use of alternative cooking technologies and dissemination of Improved Cook Stoves (ICS). In this year, 184,330 improved cook stoves were disseminated

3.11. Financial performance

3.11.1 Consolidated and separate financial performance

Table 9: Consolidated, REG, EUCl, EDCL statement of profit or loss for year ended 30 June 2022

Financial performance For year ended 30 June 2022	**Consolidated** **Rwf M**	**REG** **Rwf M**	**EUCL** **Rwf M**	**EDCL** **Rwf M**
Revenue	**144,289**	**-**	**144,289**	**-**
Cost of Sales	(150,548)	-	(150,548)	-
Gross profit	**(6,259)**	**-**	**(6,259)**	**-**
Grants and subsidies	49,843	377	34,596	16,164
Other income	9,855	4,411	7,271	439
Distribution costs	(16,606)	-	(16,606)	-
Administrative expenses	(36,947)	(3,015)	(23,504)	(13,989)
Operating profit before interest, tax, depreciation and amortisation	**(113)**	**1,773**	**(4,501)**	**2,615**
Depreciation and amortisation	(24,619)	(608)	(23,571)	(439)
Operating (loss)/profit	**(24,732)**	**1,166**	**(28,073)**	**2,175**
Interest income	27	-	27	-
Finance costs	(10,793)	-	(8,618)	(2,175)
(Loss)/profit before income tax	**(35,499)**	**1,166**	**(36,664)**	**-**
Income tax credit/(expense)	-	-	-	-
(Loss)/profit for year	**(35,499)**	**1,166**	**(36,664)**	**-**

3.11.2 Consolidated and separate financial position

Table 10: Consolidated, REG, EUCl, EDCL statement of financial position as at 30 June 2022

Financial position As at 30 June 2022	**Consolidated Rwf M**	**REG Rwf M**	**EUCL Rwf M**	**EDCL Rwf M**
ASSETS				
Non-current assets				
Plant and equipment	751,044	20,488	566,773	163,783
Concession intangible asset	61,223	-	61,223	-
Intangible assets	7,131	-	6,937	194
Investment in EUCL	-	55,955	-	-
Investment in EDCL	-	2	-	-
Amounts due from related parties	-	-	6,022	1,354
Total non-current assets	**819,398**	**76,445**	**640,955**	**165,331**
Current assets	-	-	-	-
Concession intangible asset	-	-	-	-
Inventory	29,014	-	12,590	16,425
Trade and other receivables	90,472	118	20,378	69,977
Amounts due from related parties	(110)	-	-	1,534
Bank and cash balances	41,568	568	13,317	27,683
Total current assets	**160,945**	**686**	**46,284**	**115,619**
Total assets	**980,343**	**77,131**	**687,239**	**280,950**
EQUITY AND LIABILITIES	**Consolidated**	**REG**	**EUCL**	**EDCL**
Equity	**Rwf M**	**Rwf M**	**Rwf M**	**Rwf M**
Share capital	3	3	40,000	2
Retained earnings	(73,468)	(6,865)	(66,807)	-
Re-organisation reserve	67,773	67,381	15,900	-
Total Equity	**(5,692)**	**60,518**	**(10,907)**	**2**
Non-current liabilities	-	-	-	-
Concession intangible obligation	61,223	-	61,223	-
Deferred income tax liability	19,873	-	19,873	-
Grants	587,063	9,659	413,029	164,375
Borrowings	201,108	-	122,688	78,420
Amounts due to related parties	-	5,825	1,420	-
Total noncurrent liabilities	**869,267**	**15,484**	**618,233**	**242,794**
Current liabilities	-	-	-	-
Concession intangible obligation	-	-	-	-
Borrowings	2,872	-	2,872	-
Amounts due to related parties	(160)	-	1,615	-
Trade and other payables	114,056	1,128	74,773	38,154
Total current liabilities	**116,768**	**1,128**	**79,261**	**38,154**
Total Equity and Liabilities	**980,343**	**77,131**	**686,587**	**280,950**

3.11.3. EUCL budget execution:

Table 11: EUCL Income statements for the FY 2021/2022

Details	*Actual*	*Budget*	*Variance*
	2021/2022	*2021/2022*	*2021/2022*
	Rwf' bil	*Rwf' bil*	*%*
Revenue	*144.29*	*144.06*	*0%*
Cost of power	*150.07*	*111.75*	*-34%*
Gross profit	***-5.77***	***32.31***	
Gross profit Margin	***-4%***	***22%***	
Subsidies	*8*	*10.5*	*24%*
Other income	*5.3*	*6.88*	*23%*
Pass through funds	*6.8*	*0*	
	20.1	***17.38***	
Operating expenses			
Employment costs	*11.94*	*15.34*	*22%*
Network maint &Repair	*3.6*	*6.02*	*40%*
Support to EDCL	*1.27*	*1.5*	*15%*
Support to REG	*2.25*	*2.2*	*-2%*
Selling and running costs	*3.05*	*5.83*	*48%*
Financing costs	*4.4*	*6.2*	*29%*
Administrative expenses	*7.2*	*6*	*-20%*
	33.71	***43.09***	
Surplus/ Deficit	***-19.38***	***6.6***	

Revenues:
Revenues collected were equal the budget for the Financial Year 2020/2021

Cost of power:
Cost of power was 34% above the budget mainly due to:
Use of So Energy, which is more costly to EUCL, in the FY 2020/2021 So Energy, costed EUCL Rwf 9.8 billion but in 2021/2022 it has costed EUCL Rwf 38.8 billion.

Subsidies:
Of the committed subsidies of Frw.10.5 billion, Frw.8 billion was received during the year 2021/2022 and the balance of 2.5 billion is still outstanding.

Other incomes:
The amount was below the budgeted amount due to reduction in Revenues from Works and Dark fiber. Rwf 6.8 billion was from Government to cover the cost of pass through (cost of power) invoices from Kivu watt.

Operating costs:
Overall operating expenditure was decreased by 9.38 billion Compared to the budget due to Employment costs, Network maintenance & Repair, Selling & running and Finance costs which were strictly controlled.

Gross profit margin:
The company's gross profit has negatively decreased to Frw -5.78 billion (-4%) in 2021/2022 compared to budgeted Frw. 32.31 (22%) billion of the total revenue.

Loans:

BANK OF KIGALI GISHOMA LOAN

Servicing of a loan for Gishoma Peat to Power project of approx. Frw. 21.2 billion was transferred to EUCL at the beginning of July 16. Funds for servicing this loan are included in the tariff

EUCL started paying the principal on this loan in September 2017. In January 2020 this loan has been restructured and the overall outstanding amount of the loan as at 30th June 2022 is Frw 15,815,447,796 and the remaining period is 9 years. It means from January 2021 to 31st December 2030. Interest on this loan is 14.5% per annum and is secured by a sovereign guarantee from MINECOFIN.

BANK OF KIGALI LOAN

A second loan of Frw 10 billion from Bank of Kigali to settle utility liabilities, it was received in September 2018. Funds for servicing this loan are included the tariff.
The outstanding amount as at 30th June 2022 is Frw 6,135,463,335 and the remaining period is 2years and 5 months, it means from July 2022 to 30th November 2025.
This loan attracts an interest of 14.5% per annum and is secured by a letter of comfort from MINECOFIN.

EQUITY BANK LOAN

A third loan of Frw 5.5 billion was received from Equity Bank to replace working capital that had been used for capital expenditure. The amount to service this loan is include in the tariff.
Outstanding amount as at 30th June 2022 is Frw 3,841,752,582 and the remaining period is 4 years and 3 months, it means from July 2022 to 30 September 2027.
This loan attracts an interest of 13.5% per annum and is secured by a letter of comfort from MINECOFIN.

COGEBANK LOAN

A Fourth loan of Frw 5 billion from COGEBANK to settle utility liabilities, it was received in October 2019. Funds for servicing this loan are included the tariff.
Outstanding amount as of 30th June 2022 is Frw 4,274,678,753 and the remaining period is 6 years and 3 months, it means from July 2022 to 30 September 2029.
This loan attracts an interest of 13% per annum and is secured by a letter of comfort from MINECOFIN.

3.11.4. EDCL Finance Management

The company has continued to enhance its public finance management system in accordance with national and international standards. In this context, EDCL obtained unqualified audit opinion for the fourth consecutive year and is committed to continue embracing the culture of accountability and transparency in its operations. Below is the budget execution report for the company.

Table 12: EDCL Summary of budget execution report for the FY 2021/2022

№	Program/Sub Program	2021/22 Revised budget	Budget execution to-date	% Execution	Additional funds
Recurrent					
1	Administrative And Support Services	16.9	16.9	100%	0.23
Development					
1	Electricity Generation	4.5	4.5	100%	4.09
2	Electricity Transmission and Distribution	28.8	28.8	100%	18.5
3	Energy Efficiency and Supply Security	5.4	5.4	100%	9.9
Total GoR		**55.8**	**55.8**	**100%**	**32.7**
Funds/Development					
Total External Funds		**149**	**101.6**	**68%1**	
Grand Total		**206.8**	**191.02**	**77%**	

3.12. Gender mainstreaming

The following are the key activities done during fiscal year 2021/22

- REG continued to implement the affirmative action plan and this time aligned with the company appraisal contracts (Imihigo) where gender activities are part of this, and staff are accountable to comply on it.
- As part of affirmative action plan a technical training for 25 women who already work in REG was organized to increase their capacity and skills in the whole electrical power system. This will enable them to have the potential for higher positions once available to bridge the gender gap in leadership positions.
- As a follow up process REG has been implementing recommendations that were provided by the GMO during the gender seal program. These recommendations involve generally promotion of gender equity and creating a conducive work environment for both men and women.
- As a result of the affirmative action plan and leadership willingness, there has been an increase of 10% in women recruitment compare from previous fiscal years.
- Through Engendering Utilities Program participants managed to work on their capstone project, develop the business case, change management and still in the process of working on the succession plan. The initial report was completed and shared with the management.
- REG in partnership with Engendering Utilities program, trained men managers on male engagement and these will act as catalysts to other men within REG to ensure gender mainstreaming is perceived well.

- REG is collaboration with WIRE are organized an apprenticeship program for women engineers. These engineers will be trained for 6months then they will be able to compete on technical positions that will be available.
- REG is currently working with Power Her to ensure we are aligning our activities to promote talent outreach to attract more women within the company.
- REG in collaboration with WIRE have been working together to attract students right from high school to universities to be part of professionals that will lead them to working in energy sector. This is because solving gender problem is something for long term and the leadership of different organizations in energy sector should target far from now.
- There has been continuous following up of recruitments and job adverts to ensure women and men are given equal consideration and there a gender equity to lift women candidates to bridge the gap.
- There is also much consideration about the compliance of gender equality and equity in REG procedures manuals and other living documents.

4. CONCLUSION

This report highlights the key achievements realized in the Rwanda Energy Group over the course of fiscal year 2021/2022, though the performance of this year that was generally good. REG and its subsidiaries continue to face the following challenges that negatively impact on the delivery of medium- and long-term goals of the energy sector as stipulated in such strategic documents as the NST1 and REG strategic plan:

1. Insufficient budget for development projects
2. The issue of mismatching demand and power supply
3. End user tariffs that are not cost reflective

Despite the above-mentioned challenges, REG is committed to continue engaging its shareholders as well as other stakeholders to find appropriate solutions. REG will also continue to build on the achievements realized and continue to implement policies, programs, and strategies to achieve NST1 targets in close collaboration with all stakeholders involved, encouraging teamwork among its employees, as well as strengthening coordination, monitoring, and evaluation.

5. ANNEXES

Annex 1: Implementation progress of REG Imihigo FY2021/22

#	Output	Baseline	Annual Target	Implementation progress
Outcome 1: Installed Capacity increase from 238.368 MW to 276.068 MW as of June 2022				
1	43.5 MW Nyabarongo II HPP constructed	Land Acquisition for phase one completed at 92%	10% of Land Acquisition for phase two	-Land acquisition for Phase two is estimated at *25%*
		Preliminary Design.	Design approval at 30%	Design approval is estimated at 30 %
			Physical implementation progress at 4%	implementation progress estimated at 7%
2	Shema power Lake Kivu plant constructed (56MW available)	First phase completed at 80%	50% of overall project progress	**Overall project progress at 70%** Overall progress for 14MW of phase one is 90%. - 14MW will be available Feb 2023 - 14MW (28MW) in May 2023 - 14 MW (42MW) in June 2023 - 14MW (56MW) in July 2023
3	80 MW Rusumo Hydro Power Plant constructed	Construction works at 78%	Construction works at 100%	**Overall project progress is at 93%** 1) Civil Works Contract Package (CP1) completed at 95% 2) Electromechanical Works Contract Package (CP2) completed at 90%.
Outcome 2: Improved Power Transmission and Distribution Network for reliability of power supply				
4	23.3 km of 110kV single circuit *Mukungwa-Nyabihu* TL and associated SSs constructed	Progress at 83%	95%	**Completed and inaugurated** - Transmission Line: 100% - Progress on substations ▯ Nyabihu substation: 100% ▯ Rubavu substation: 100% ▯ Camp-Belge substation: 100% ▯ Mukungwa substation: 100% ▯ Musha Substation: 99%

5	Improvement of Substations and distribution network Project Phase JICA III constructed	Progress at 14%	Progress at 50%	**Overall project progress is at 98%** **Substation:** - Control building: 97% - Equipment installation: 98% - Testing and commissioning :65% **MV Line:** - Pole foundation: 44/44 completed. - Pole erection: 44/44 completed. - Towers foundation: 69/70 completed. - Towers erection: 68/70 completed - Stringing: 14/20km completed
6	63.5Km of 220kV Rwanda-Burundi Transmission Line and associated SS constructed	90%	99%	**Overall project progress at 98.8%** Substation progress:98.78% Transmission Line progress: 94.67% Material delivery:100%
7	119 Km of 220kV Single circuit Rusumo-Bugesera-Shango Transmission Line and associated SS constructed	72%	95	**Overall Project 95.6%** ▯ Substations progress at 100% ▯ Transmission Line 91.2%
8	Upgrade of the Eastern Province network from single to three phase completed.	57%	75%	**Overall progress is at 96.15%.** ▯ All materials were supplied on sites ▯ 182 Kms/182have been constructed. ▯ All transformers were installed ▯ The Contractor is addressing the comments provided by the Supervisor.

9	75 Km Bwishyura - Kigoma- Rwabusoro 220 kV Line and Shema (Symbion) substation constructed	21%	40%	Overall project progress is 10% 11/110 kV SPLK Substation for evacuation of the first 14MW is at 86.81%. ➢ Gas Insulated Substation (GIS Substation) for 56MW at design stage 1st section 4.5Kms connecting Shema Gas to the existing TL Rwanda-DRC is at 86.96% (Stringing ongoing) ➢ Bwishyura-Kigoma-Rwabusoro line (Karongi-Ruhango-Nyanza): line route approved.
10	631.85 km of National roads served with streetlights	32%	65%	**Overall project progress is at 67.83%** ▯ 49.56Km Maranyundo-Nemba, Musanze-Kinigi and Golf course at Nyarutarama roads completed ▯ 34 Km of Kigali Kayonza is energized ▯ 13Km Musanze-Kinigi done under handover process ▯ 65km Kigali-Gatuna at 90%: all 1840 poles erected; lumps are being installed ▯ 85.9Km Kigali-Huye-Akanyaru: poles erection is ongoing ▯ 40Km Huye-Kitabi: poles erection is ongoing. ▯ Expected to be completed February 2023.
Outcome 3: Access Rate Increased from 65% to 72% by June 2022				
#	**Output**	**Baseline**	**Annual Target**	**Implementation progress**
11	119,540 (175,486) New households connected to the grid	1,269,508	119,540	127,279 households were connected
12	208 (432) new electricity productive users connected	7,951 PUAs	208	463 PUAs were connected as of end June 2022
13	35,153 (60,000) New households connected to off grid.	482,049	35,153	116,713 households were connected

Outcome 4: Biomass Reduced from 79% to 77.7%				
14	Inspection of biogas plants and support in the rehabilitation of the defected ones.	428	8,664	10,647 inspected biogas plants as of end of June 2022.
15	Inspection of improved cook stoves.	1,005	6,000	So far 6,022 ICSs were Inspected.
16	Dissemination of 54,760 (60,000) clean cooking stoves	13 Cooperation agreements with market aggregators	54,760	114,359 clean cooking stoves were disseminated
Outcome 5: Improved Transmission and Distribution capabilities and availability of the network				
17	**Output 37:** Kigali distribution network (8 cabins) reinforced	Project progress at 65%	90%	Progress is at 100% (Project completed)
18	**Output 38:** Construction of MV distribution lines (Agg. 37 Km) associated with the Reinforcement of Kigali distribution network (8 cabins)	Project progress at 55%	Overall Progress: 86%	Overall Progress is at 96.0%

Annex 2: Generation Installed Capacity

NO	PLANT NAME	Installed Capacity in MW	ON/OFF GRID
1	Mukungwa I	12.00	ON GRID
2	Ntaruka	11.25	ON GRID
3	Gisenyi	1.70	ON GRID
4	Gihira	1.80	ON GRID
5	Jabana 1	7.80	ON GRID
6	Jali Solar	0.25	ON GRID
7	Gigawatt	8.50	ON GRID
8	K P 1	3.60	ON GRID
9	Jabana 2	21.00	ON GRID
10	Murunda	0.10	ON GRID
11	RUKARARA I	9.00	ON GRID
12	Rugezi	2.60	ON GRID
13	Keya	2.20	ON GRID
14	Nkora	0.68	ON GRID
15	Cyimbili	0.30	ON GRID
16	Mukungwa II	3.6	ON GRID
17	Musarara	0.40	ON GRID
18	Nshili	0.40	ON GRID
19	Mazimeru	0.5	ON GRID
20	GICIYE I	4.00	ON GRID
21	RUKARARA II	2.20	ON GRID
22	GICIYE II	4.00	ON GRID
23	NYABARONGO I	28.00	ON GRID
24	KIVUWATT	26.19	ON GRID
25	Janja	0.20	ON GRID
26	Nyabahanga	0.20	ON GRID
27	Mutobo	0.20	ON GRID
28	Gishoma	15.00	ON GRID
29	Gaseke	0.50	ON GRID
30	SOEnergy Mukungwa	10.00	ON GRID
31	SOEnergy Masoro	10.00	ON GRID
32	SOEnergy Birembo	10.00	ON GRID
33	Nasho Solar	3.3	ON GRID
34	Gashashi	0.28	ON GRID
35	RWAZA	2.6	ON GRID
36	Mushishito-RukararaV	5.0	ON GRID
37	Rubagabaga	0.45	ON GRID
38	Agatobwe	0.39	ON GRID

NO	PLANT NAME	Installed Capacity in MW	ON/OFF GRID
39	NYIRANTARUKO	1.84	ON GRID
40	Kigasa	0.272	ON GRID
41	GICIYE III	9.8	ON GRID
41	Nyirabuhombohombo	0.65	ON GRID
42	HAKAN_MAMBA	35	ON GRID
43	Rusizi I	4.1	ON GRID
44	Rusizi II	12	ON GRID
45	Kabale (UETCL)	2	ON GRID
46	Nyamyotsi I	0.1	OFF GRID
47	Nyamyotsi II	0.1	OFF GRID
48	Mukungu pico HPP	0.016	OFF GRID
	Total	**276.068**	

Annex 3: Stock of Power transmission infrastructure as of June 2022

S/N	TRANSMISSION LINE	KILIVOLTAGE (KV)	LENGTH (KM)	COMPLETION YEAR
1	Birembo-Gasogi	110	8.67	1959
2	Birembo-Shango	110	9.59	1959
3	Bugarama-Gishoma	110	12.27	2016
4	Bugesera-Bugesera IP	110	23.1	
5	Gabiro-Musha	110	45.96	2018
6	Gahanga-Bugesera	110	17.31	2020
7	Gasogi-Musha	110	17.48	1959
8	Gifurwe-Mukungwa (Double Circuit)	110	18.46	1959
9	Gikondo-MountKigali	110	5.22	1957
10	Gikondo - Jabana I	110	8.36	1957
11	Jabana I-Birembo	110	6.97	2015
12	Jabana I-Jabana II	110	1.29	2008
13	JabanaI-Rulindo	110	25.73	1959
14	Kabarondo-Rwinkwavu	110	7.25	1959
15	Karongi-Kibuye	110	12.41	
16	Karongi -Kibogora	110	39.2	1957
17	Kibogora-Ntendezi	110	18.46	
18	Kibuye-KivuWatt	110	1.21	2016
19	Kigoma-Kilinda	110	27.45	1957
20	Kilinda-Karongi	110	25.11	1957
21	Kilinda-Nyabarongo	110	27.85	2014
22	Kilinda-Rukarara	110	31.29	1957
23	Mamba-Rwabusoro	220	21.54	2020

24	MontKigai-Kigoma	110	40.33	1957
25	MontKigali-Gahanga	110	9.64	2019
26	MontKigali-Jabana	110	17.25	2019
27	Mururu II-Mururu I	110	0.37	1957
28	Musha-Kabarondo	110	23.35	1959
29	Ndera cut-In cut-out	110	2.14	
30	Ntaruka-Gifurwe	110	8.51	1959
31	Ntendezi-Bugarama	110	17.62	2016
32	Ntendezi-Mururu II	110	20.89	
33	Rubavu-Goma Border	220	7.01	
34	Rubavu - Bwishyura/Kibuye	220	57.54	2016
35	Rulindo-Gabiro	110	63.86	2018
36	Rulindo-Gifurwe	110	24.93	1959
37	Rwabusoro-Bugesera SS	220	40.64	2020
38	Shango - Rubavu	220	106.11	2016
39	Shango -Mirama(Up to Uganda Border)	220	92.01	2016
40	Mukungwa-Nyabihu	110	28.75	2022
	Total		***973.14***	