



# ANNUAL REPORT

2022 - 2023

September 2023



It is with great pleasure that the Rwanda Energy Group Ltd presents its Annual Report for the fiscal year 2022/2023. 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 2022/2023, 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.

## FOREWORD

As a result, households' connections to electricity reached 71.9% by the end June 2023, including on grid 53.6% and Off grid 18.3% as of June 2023, and the total installed power generation capacity reached to 353.402MW from 276.07 MW in same time horizon.

REG Annual Report consolidates performance of REG holding and its 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.



**Armand ZINGIRO**  
Chief Executive Officer

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## 1. EXECUTIVE SUMMARY

This report highlights the key achievements realized in the Fiscal Year 2022/23 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.

### POWER GENERATION

In power generation, the total installed capacity increased from 276.07 MW to 353.40 MW. The additional capacity of 77.33 Mw was from the commissioning of Hakan where its capacity has increased from 35MW to 70MW net capacity, Kavumu Mwange with 0.33MW, Ntaruka A with 2MW and 40MW is being imported from Uganda (UETCL). The highest annual peak demand was 201.46MW was observed on 9th June 2023 while it was 178.7MW in June 2022 for FY 2021/2022. Demand growth this year is 12.7% while it was 8.7% for the year of 2021/2022.

### POWER TRANSMISSION

By the end of June 2023, the total length of the transmission network, including 220kV and 110kV lines, was recorded at 1,158.00 from 973.14 km across the country. The additional 184.86 Km were resulted from commissioning of: 62.84 km of 220kV Rwanda-Burundi TL, 117.60 km of Rusumo - Bugesera-Shango TL and 4.42Km line evacuating Shema Plant connecting to Rwanda-DRC Interconnection line.

### POWER DISTRIBUTION

The distribution network increased with a total length of 257.88 Km of medium voltage lines and 260.7Km of low voltage lines, bringing the total distribution network to 29,504.38 from 28,985.8 Km of the previous year of which 10,777.98 Km of medium voltage and 18,726.4 Km of low voltage.

### ACCESS TO ELECTRICITY

During the fiscal year 2022/2023, 76,688 new Households were connected to the National electricity grid, which brought the cumulative total of 1,809,279 HHs. In addition to this, a total of 182,380 households were connected to off-grid electricity, which brought the cumulative total of 618,221 HHs. The total number of households connected to electricity equals to 2,427,500, standing at 71.9%, including on grid 53.6% and Off grid 18.3% as of June 2023. Again, 414 Productive users were also connected to the national grid.



## ENERGY EFFICIENCY

In this reporting financial year, REG/EDCL gave focus on raising awareness among the citizens on the use of modern cooking technologies transitioning from traditional cooking fuels and 833,611 Improved Cook Stoves were disseminated.

## POWER RELIABILITY

On the side of operations, power system performance and reliability remained generally stable. the total network collapse reduced from 4 blackout in 2021/22 to 2 blackouts in 2022/2023, and the recorded transmission network availability in the year of 2022-23FY was 99.72 % from 99.31 % of 2021-2022

## NETWORK PERFORMANCE

Countrywide, the distribution network performance is still stable though with slight increase as compared to last year. The System Average Interruption Duration Index (SAIDI) has reduced to 14.42 hours from 18.59 hours of the previous year and the average number of interruptions that a customer experienced (SAIFI) has reduced to 21.71 times per year from 45.67 times of the previous year.

## LOSS REDUCTION

The average total power losses for this financial year (technical and non-technical) decreased to 16.9 % from 18.1 previous year, and the recorded monetary loss decreased to 400,355,628 from 473,094,992 Frw.

## REVENUE COLLECTION

During the fiscal year 2022-2023, the total amount billed including Uganda Export & works increased to Frw 204,186,501,613 from Frw 176,190,227,147 of the previous year. This shows that there is an increase of Frw 27,996,274,466 equivalent to 15.89%. The total collection on prepayment, post payment and works increased to 198,600,220,931 Frw from 175,631,654,494 of the previous year.



## 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 2022 and June 2023 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 2022/2023, REG signed to deliver 13 outputs grouped under 4 key outcomes. By the end of June 2023, the Eleven (11) among Thirteen (13) outputs were on track as detailed in annex 1 of this report.

In addition to this, REG signed for Joint Imihigo with 5 outputs grouped under 2 outcomes.

These outputs for Joint Imihigo were already part of the overall Imihigo and Four (4) of them were on track while One (1) was on watch by the end of June 2023.



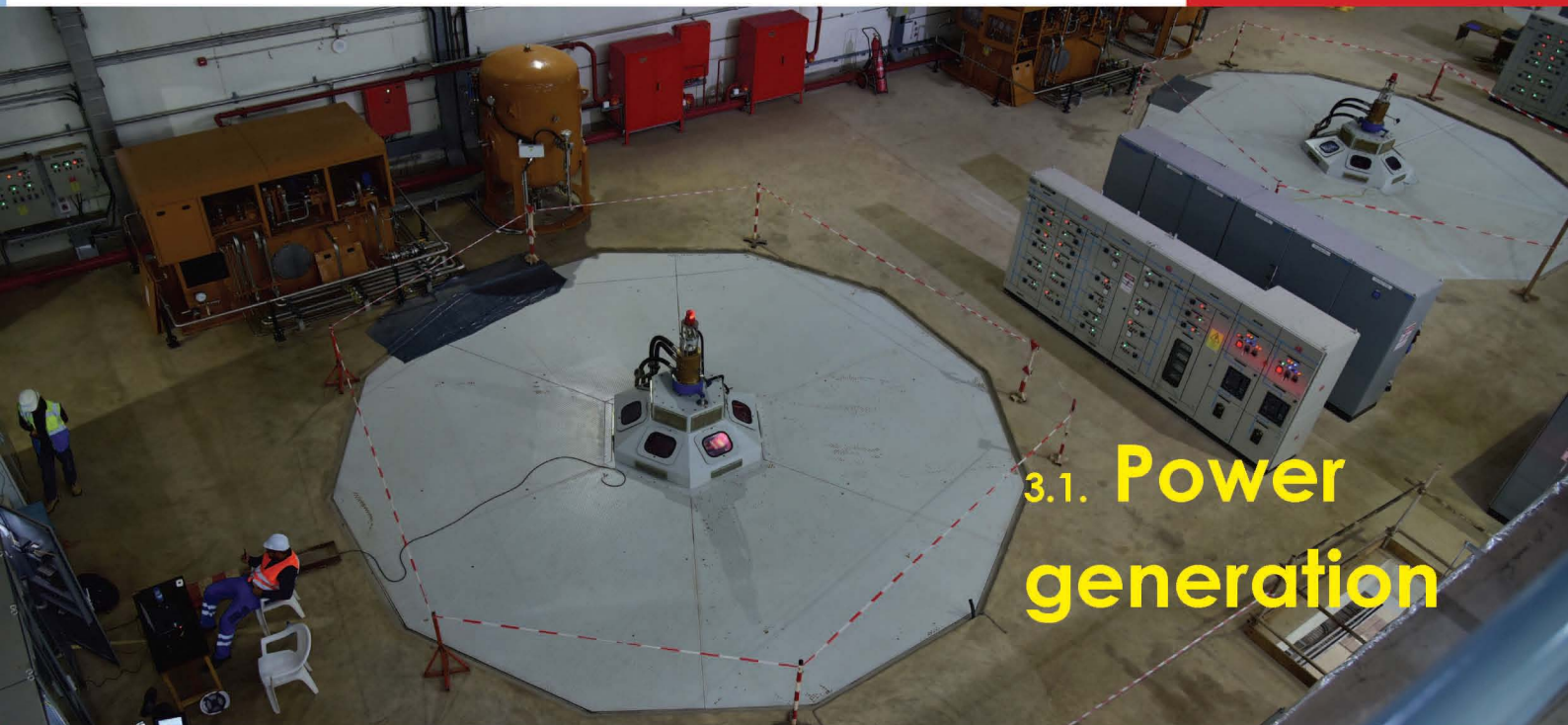


### **3. ACHIEVEMENTS FOR THE FISCAL YEAR 2022/2023**

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).

To attain the desired development impact of the above programs and other strategic interventions, the REG implemented different projects in the 2022/2023 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 2023, the total installed capacity increased to 353.40 MW from 276.07 MW. The additional capacity is from the commissioning of Hakan where its installed capacity has increased from 35MW to 70MW, Kavumu Mwangi with 0.334MW, Ntaruka A with 2MW and 40MW is being imported from Uganda (UETCL).

The total installed capacity is composed of domestic capacity with 295.30 MW and 58.1MW from imports & shared power plants totalizing 353.40MW. Among 53 domestic power plants, 50 of them are on grid while 3 are off grid.

The highest annual Peak demand registered was 201.46MW was observed on 9th June 2023, compared to 178.71 MW observed in June 2022 and Energy generation growth is of 12.13% against 12.03% of FY 2021/2022. Thermal generation was 89.68% (174,432,660.00kWh) of 2022/2023 FY thermal generation. Hydropower generating stations were characterized by water shortage in their stream due to prolonged dry season and heavy rainfall of 2 to 3 May 2023 that affected many hydropower plants of Northern and Western regions.

### Availability factor of power plants on quarterly basis.

The overall availability of the hydro plants and solar plants for EUCL/Governments' plants remains high. The availability of thermal plants has been low due to extended maintenance time and multiple incidents that happened at the plants as shown in table 6 and 7 below.

Table 1: Availability factor of power plants maintained power plant.

Type	Q1	Q2	Q3	Q4
Hydro Power plants	98%	99%	98%	98%
Thermal Power plants	71.56%	78.03%	60.38%	32.34%
Solar plants	98.6%	97.53	99.57%	96.70%

### 3.1.1. Energy generated by plants' owners.

Based on ownership of power plant, IPPs power plants contribution increased to 64.01% from 60% of the previous year, while the GoR owned power plants contribution was reduced to 26.55% from 31% of the previous year and import & shared resources contribution increased to 9.44% from 9% compared to previous year. The table below presents the generation by plant owners.

Source of Generation	Generated Energy (kWh)					
	FY 2020/2021		FY 2021/2022		FY 2022/2023	
	kWh	%	kWh	%	kWh	%
IPPs Power Plants	493,755,909.12	52%	642,902,300.20	60%	767,689,384.45	64.01%
GoR Power Plants	348,826,411.31	36%	330,142,988.16	31%	318,478,666.80	26.55%
Import + Shared	112071628.3	12%	96,535,846.81	9%	113,159,678.62	9.44%
<b>Total Generation</b>	<b>954,653,948.70</b>	<b>100%</b>	<b>1,069,581,135.16</b>	<b>100%</b>	<b>1,199,327,729.87</b>	<b>100.00%</b>

Table 2: Energy Generated by plants' owners.

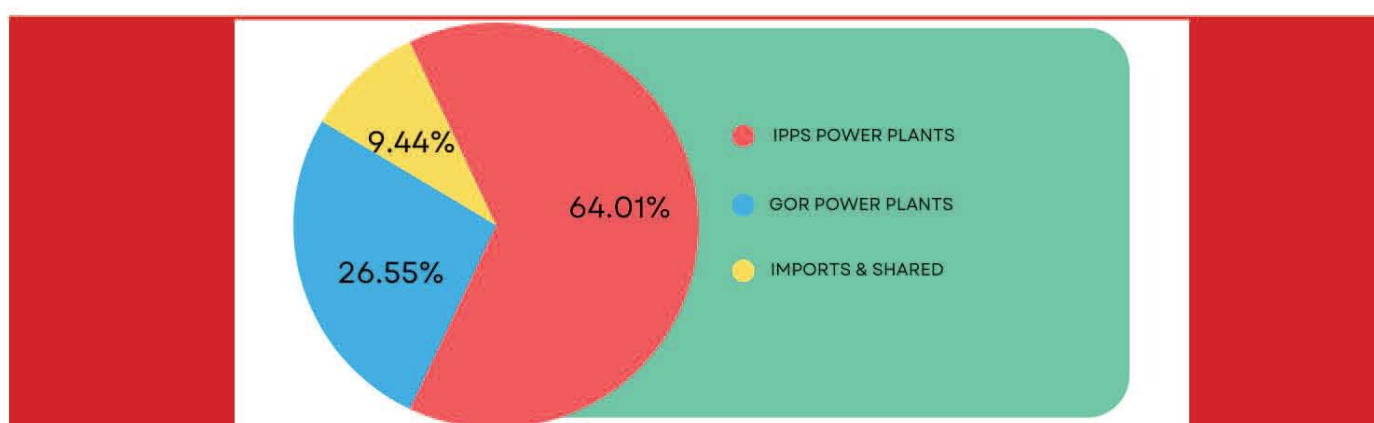


Figure 1: Figure 1: Generation share by plant owner (GoR Vs IPPs)

### 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 109.662 MW equivalent to 31.03%, while shared and solar power contributes the least 3.40% and 3.41% respectively as per the table and graph below:

Types	Installed Capacity	Percentage
Hydropower	109.662	31.03%
Import	46.1	13.04%
Methane Gas	29.79	8.43%
Peat Fired PP	85	24.05%
shared	12	3.40%
Solar Power	12.05	3.41%
Thermal Power	58.8	16.64%
<b>Total</b>	<b>353.402</b>	<b>100%</b>

Table 3: Summary of capacity by source as of June 2023

ENERGY MIX		
Types	Installed Capacity	Percentage
Technology	Generation /kWh	%
Hydropower	494,021,729.82	41.19%
Import	37,839,678.62	3.16%
Methane Gas	225,037,264.11	18.76%
Peat Fired PP	174,847,966.56	14.58%
shared	75,320,000.00	6.28%
Solar Power	17,828,430.75	1.49%
Thermal Power	174,432,660.00	14.54%
<b>Total Generation</b>	<b>1,199,327,729.86</b>	<b>100.00%</b>

Table 4: Summary of energy mix during FY 2022/23



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

The corresponding energy generated by hydropower increased to 494.02 from 461.52 GWh, and its share in the energy mix reduced to 41.19% from 43.1% this year. On the other hand, energy generated from thermal power plants reduced to 174.43% from to 194.51 GWh and the corresponding share in the energy mix reduced to 14.54% from 18.2%. The contribution of Methane increased to 225.04 from 213.6 GWh (18.76%), Peat contribution increased to 174.85 from 80.9 GWh (14.58%), Solar contribution increased to 17.83 from 17.53 GWh (1.49%), import increased to 37.84 from 31.98 GWh (3.16%) while energy from regional shared plants increased to 75.32 from 64.56 GWh (6.28%). The graph below shows the changes in the energy mix overtime.

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	218.6	194.51	17.53	80.9	31.98	64.56	1,069.58
2022-2023	494.02	225.04	174.43	17.83	174.85	37.84	75.32	1,199.33
Contribution to energy Mix (%)	41.19%	18.76%	14.54%	1.49%	14.58%	3.16%	6.28%	100%

Table 5: Energy generated by source of energy from 2015-2023 (in GWh)

### 3.1.4. The Least Cost Power Development Plan

The least cost power development plan was revised and updated in June 23 and key updates therein are:

- ❑ Update and realignment of CODs of power plants
- ❑ Model base year revised to 2022, with projections throughout 2050.
- ❑ Updated demand assumptions/inputs (informed by Demand Analysis, (MAED, 2022) inputs and 5th RPHC Census key results)
- ❑ Consideration for utility-scale battery energy storages systems.
- ❑ Solar PV systems integrating storage.
- ❑ Integration of Generation Resource Assessment
  - a. Update cost estimates for solar PV and battery storages
    - i. especially in the longer planning horizon to reflect the global declining trends in the cost of these technologies, and advances in capacities.
  - b. Generic distributed wind generation
- ❑ Generic green hydrogen generation technology





## 3.2. Electricity transmission

By the end of June 2023, the total length of the transmission network, including 220kV and 110kV lines, was recorded at 1,158 from 973.14 km across the country. The additional 184.86 Km were resulted from commissioning of: 62.84 km of 220kV Rwanda-Burundi TL, 117.60 km of Rusumo - Bugesera-Shango TL and 4.42Km line evacuating Shema Plant connecting to Rwanda-DRC Interconnection line.





### 3.2.1. Transmission Line Projects status

#### **Bwishyura-Kigoma-Rwabusoro transmission network:**

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 include: (1) construction of 4.42 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.

Except components: one, two and three that were completed, the main component of 75.55 Km of 220kV Bwishyura-Kigoma-Rwabusoro with Kigoma bay is still at initial phase estimated at 5% representing site assessment and topographic survey.

#### **Bwishyura, Rubavu and Kibuye Substations.**

These substations are part of 220kV Regional Interconnection Lines between Rwanda and DRC in addition to Birembo and Shango already completed. The overall project progress is at 46%.

Civil works, designs, electromechanical and procurement are at advanced stage for both Rubavu and Bwishyura substations. Works are about to start for Kibuye substation.

### 3.2.2. The Transmission Plan Updates

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

- ❑ The total length of Existing Transmission Lines has been changed from 973.13km to 1,158 km.
- ❑ The Transmission Line 110kV Nyabarongo II-Nzove was presented to DPs, the funder is not yet available.
- ❑ 110/15kV Nzove Cut\_In Cut\_Out with an additional transformer of 20MVA was presented to DPs, the funder is not yet available.
- ❑ Upgrade of Rukarara SS (from 2\*10MVA to 2\*20MVA) was presented to DPs, the funder is not yet available.
- ❑ The operational timeline for some projects is changed according to LCDP.
- ❑ The status of 220kV Rusumo-Bugesera-Shango(117.60km), 220kV-KigomaGisagara Burundi border (62.84km) and SPLK Evacuation (4.42km) Projects has been changed from Ongoing to Existing.
- ❑ Shango SS has been completed including the 220kV Transformer and line bays.
- ❑ Some Projects have been accepted to be funded by EIB and kFW
- ❑ The 110kV Bugesera-Gasogi has been replaced by 220kV Kigoma-Rwabusoro i.e this project is now under projects with funds.
- ❑ Masaka substation is introduced in this version.
- ❑ Upgrade of Birembo SS
- ❑ Some Projects without feasibility studies are considered in this version.
- ❑ Improving Substations System Automation and Security (To be remotely operable, having CCTV cameras, to have fingerprint system, AC in Control Room, Public Lighting, Lightning arrestors for control Room, to have Synchro check)





## 3.3. Electricity distribution

The Government of Rwanda established the Electricity Access Rollout Program (EARP) and Rwanda Universal Energy Access Program (RUEAP) 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 257.88 Km of MV lines and 260.7Km of LV lines, bringing the total distribution network to 29,504.38 from 28,985.8 Km of the previous year of which 10,777.98 Km of medium voltage and 18,726.4 Km of low voltage.

### **3.3.1. Distribution Development Plan Updates**

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

- Updates on Anticipated Major load demand on Distribution network from 2023-2028
- Assessment of all Distribution Transformers Loading profile countrywide to identify the status of each transformer whether are critically overloaded or under-loaded for a better planning.
- Update of the list of Distribution Network Strengthening projects in pipeline i.e., funded, and un-funded projects:
- Illustrate the required Investment for distribution network strengthening projects.





## 3.4. Electricity access

During the fiscal year 2022/2023, **76,688** new Households were connected to the National electricity grid, which brought the cumulative total of **1,809,279 HHs**. In addition to this, a total of **182,380** households were connected to off-grid electricity, which brought the cumulative total of **618,221 HHs**. Considering the results of 5th Population and Housing census Rwanda, 2022 (thematic report July 2023, page 233) as the reporting baseline as of August 2022, we reported the following achievements:

### On grid new connections

The **68,963** households connected to the grid electricity from August to end June 2023, were added to the Census baseline of **1,740,316 HHs** (52.5%), which brought the cumulative total of **1,809,279 HHs** (53.6%). Moreover, as of end of June 2023, total customer connected are cumulatively **1,464,166** (# meters), this would imply that one meter may connect more than one household.

### Off grid new connections

The 157,662 households connected to the off-grid electricity from August to end June 2023, were added to the Census baseline of **460,559 HHs**, which brought the cumulative total of 618,221 HHs.

Therefore, the total number of households connected to electricity equals to **2,427,500 HHs**, standing at **71.9%**, including on grid **53.6%** and Off grid **18.3%** as of June 2023.

### Productive use

By the end of June 2023, 414 productive users were connected to the grid. The cumulative number of productive users connected to electricity reached 8,828. The annual connections include 35 local administrative offices (Sector, Cells, villages, and other government facilities), 33 water facilities, 58 health facilities and 162 schools. Remaining include markets, Hotels, and factories...

### The Access Plan

The access plan was revised and updated mainly to include the following:

- ❑ Villages in the off-grid zone increased their share from 2,601 villages to 5,090 villages.
- ❑ The revision of the current NEP was guided by the figures in electricity access as published by the National Institute of Statistics during the recently conducted 5<sup>th</sup> Population and Housing Census.



### 3.5. Operations and maintenance

#### 3.5.1. Blackouts

Causes of power system blackouts include transmission line tripping or overloading, control and protection systems mal-operation, lightning strikes on power systems equipment, poor maintenance, human error, voltage collapse, equipment failure, quick-frequency declines, and others. Below is the graph showing how blackouts have been reduced from 2015 to today. The number of total network collapses in 2022-2023 was reduced to 2 from 4 blackouts in 2021-2022.

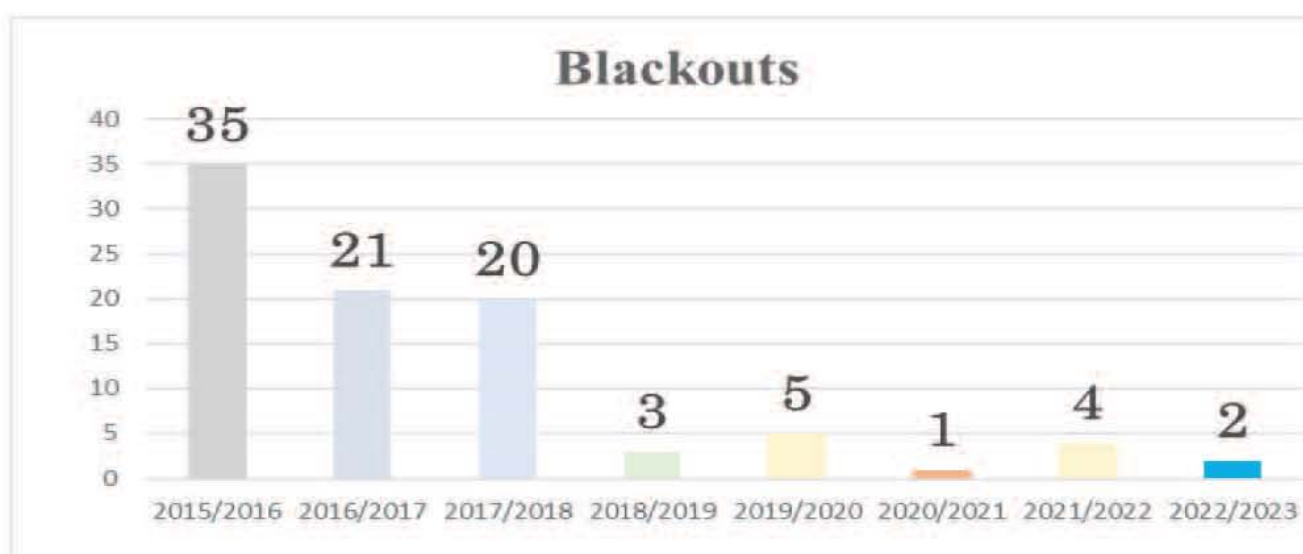


Figure 2: Black out trend

#### 3.5.2. Network availability

The recorded transmission network availability in the year of 2022-23FY was 99.72% from 99.31% in 2021-22 as shown in the table below:

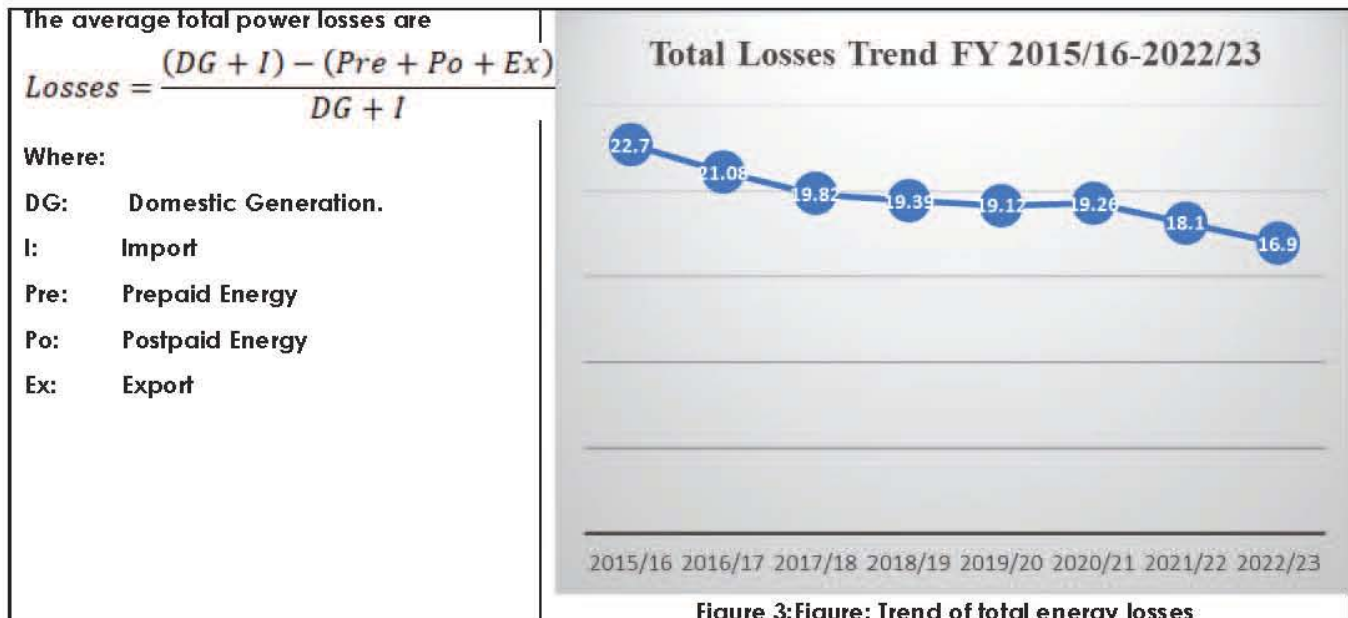
Table 6: Transmission line availability 2022-2023 FY

TRANSMISSION LINE AVAILABILITY 2022-2023 FY					
		Outage duration min			290
Q1		Days	Hours	Difference	Availability in %
	Period duration	92	132480	132,190	99.781%
		Outage duration min			301
Q2		Days	Minutes	Difference	Availability in %
	Period duration	92	132480	132,179	99.773%
		Outage duration min			441
Q3		Days	Minutes	Difference	Availability in %
	Period duration	90	129600	129,159	99.660%
		Outage duration min			438
Q4		Days	Minutes	Difference	Availability in %
	Period duration	91	131040	130,602	99.666%
		Outage duration min			1470
Annual		Days	Minutes	Difference	Availability in %
	Period duration	365	525600	524,130	99.720%



### 3.5.3. Losses

Total Losses (Technical and non-technical losses): the average total power losses for this FY 2022/2023 at evaluated to 16.9% compared to 18.1% in 2021/2022 and 19.26% in 2020/21 and 19.12% in 2019/20



### 3.5.4. SAIDI and SAIFI

During the FY 2022/2023, the entire country distribution network performance was as follow: the System Average Duration Index (SAIDI) reduced to 14.42 from 18.59 of the previous year and the average number of interruptions that a customer experienced (SAIFI) reduced to 21.71 from 45.67 of the previous year.

Table 7: SAIDI and SAIFI

DESCRIPTION	UNITS	BASELINE (July 21 - June 22)	SMART	STRETCH	Achieved July 22 - June 23
SAIDI	Hours / Year	18.59	17.66	16.73	14.42
SAIFI	Times / Year	45.67	43.37	41.10	21.71

### 3.5.6 Outages

During this financial year, a total number of recorded outages is 7,106 from 10,993 of previous year and were caused by Earth Fault, Overcurrent, Under Frequency, Emergency works, planned works, Emergency Load shedding and Overload as shown by the table below and the corresponding monetary loss is 400,355,628 Frw473,094,992 of previous year.

Table 8: Outages

Cause	Frequency	Duration (hr)	Energy not served (MWh)	Financial Loss	Freq%
Earth Fault	2801	321.8	384.5	71,525,230	39.42%
Emergency Loadshedding	165	173.7	377.4	70,196,989	2.32%
Emergency works	245	119.3	167.7	31,197,005	3.45%
Overcurrent	2364	346.3	448.3	83,391,441	33.27%
Planned works	130	360.9	527.0	98,029,983	1.83%
Under Frequency	1401	141.0	247.4	46,014,980	19.72%
<b>Total</b>	<b>7106</b>	<b>1,463.0</b>	<b>2,152.4</b>	<b>400,355,628</b>	<b>100.00%</b>

The outages frequency is presented as follow:

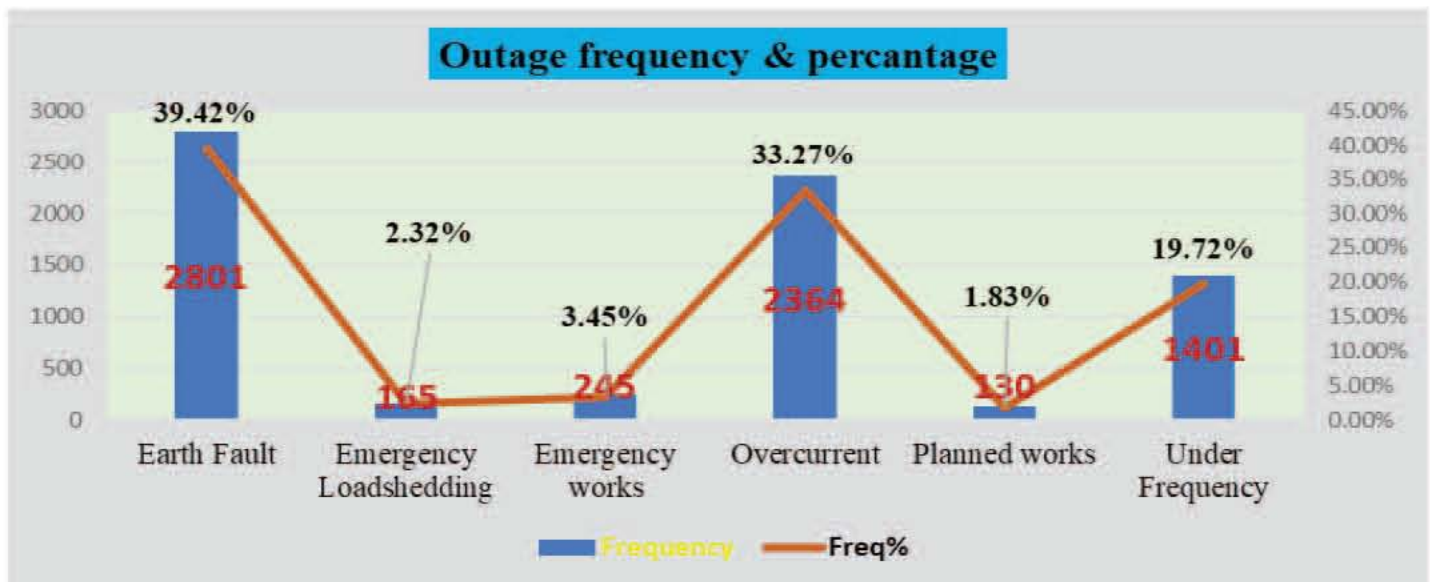


Figure 4: Outages frequencies Vs Percentages on the FY 2021/2022



### 3.6. Corporate governance

The functional strategies identified in REG strategic plan can only be realized by putting them 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. It is in that regard that Seven (7) meetings of the Board of Directors held, nine (9) committee meetings were held successfully and provided guidance and resolutions necessary for REG's smooth operations.

Resolutions of the Board and Committees were communicated to concerned institution/Staff for implementation. Moreover, 15 requested legal opinions were assessed and provided, 2 Board Members were trained, and others will be trained in the next financial year.

### 3.7. Communication and public relations

During the fiscal year 2022/2023, communication activities on awareness raising campaigns, visibility in media and extensive use of social media to enhance the corporate positive image and ensuring satisfaction of customers. The following activities were achieved:

- **Media publications:** A total of 247 positive news stories related to REG achievements and projects were published in local media during the year 2022/2023. These stories were published thanks to the good relationship between REG and media. 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 10 talk-shows were held on local radios and TVs. Awareness was also carried out all over the country through community meetings by branches especially on REG services, fight against corruption, safety, fight against vandalism and power theft as well as the new subsidies programs to promote the use of off grid solutions and clean cooking technologies.
- **Using social media in customer service:** Extensive use of social media in interaction with customers has been key among the communication priorities during the year 2022/2023. This consisted of closely following up on customers' queries submitted via social media immediately responding to these queries. 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.
- **Using company's platform for visibility and hub of REG information:** REG website ([www.reg.rw](http://www.reg.rw)) and its various social media platforms 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 detailing ongoing achievements 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. These include:

- REG contributed to activities related to the 29<sup>th</sup> Commemoration of the Genocide against Tutsi (through IBUKA, Kigali Genocide Memorial and AVEGA).
- On the community work (Umuganda) of April 2023, REG staff joined residents of Gicumbi District, a contribution to renovate buildings of the SOS Children's Village was done and the total materials used were worth 5,5 Million Frws.



### Internal Communication

In a bid to sensitize staff on integrity, better service, and fight against corruption, general staff meetings and trainings were organized whereby the management and anticorruption entities shared messages inciting staff to abstain from any corrupt behavior and endeavor for quality service and customer satisfaction as well as uphold unity while fighting genocide ideology.



**REG Professional sports teams**

- o REG also has 3 professional sports team which increase the company's visibility (REG BBC, REG VC Men, REG VC Women). Among the achievement of these teams include:
  - i. REG BBC represented Rwanda in the 2023 Basketball Africa League (BAL).
  - ii. REG WBC: was crowned national women league champion 2022 and also represented Rwanda Zone 5 basketball Tournament who was held in #Tanzania
  - iii. REG VC was Rwanda volleyball National League champion and was also crowned champion in the National Heroes Volleyball Tournament.





### 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. During the financial year ending June 2023, the following were accomplished in the sphere of human resources management:

- i. Staff recruitment: 8 new staff were recruited in REG holding while in EDCL&EUCL are 30&110 new staff recruited respectively.
- ii. Vacant position under process: 8vacants positions are under recruitment process in REG Holding while in EDCL&EUCL are 123&228 respectively.
- iii. Structure filled rate: currently REG Holding structure is filled at 84% while in EDCL&EUCL are 74.4%&80.27% Respectively.
- iv. Training: 5 staff were trained in REG Holding in different fields while in EDCL&EUCL were 183&448 respectively.





### 3.9. Commercial services

#### 3.9.1. Electricity billing and revenue collections

During the fiscal year 2022-2023, the total amount billed including Uganda Export & works increased to Frw 204,186,501,613 from Frw 176,190,227,147 of the previous year. This shows that there is an increase of Frw 27,996,274,466 equivalent to 15.89% of increase.

The total collection on prepayment, post payment and works increased to 198,600,220,931 from Frw 175,631,654,494 of the previous year. This shows that the collection revenues increase by Frw 22,968,566,437 equivalent to 13.07%

#### 3.9.2. Revenue Protection Program (RPP)

EUCL purchased 1000 smart meters to cover postpaid customers who are still served by the conventional meters, currently almost 75% of these customers have been covered. 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.

During the period of fiscal year 2022-2023, the Energy Efficiency and Revenue Protection unit in its activities inspected **14,170** customers and discovered the following irregularities: **110** unmetered electricity cases including **72** tampered meters, **34** faulty meters, **4** case without meter, we recovered Rwf **100,350,000** as payment of fines, recovered Rwf **43,953,712** as payment of regularization bill, **79** regularization bills were established equivalent to **174,732.99** kWh (identified as energy loss), **42** complaints of theft of electricity were handed to RIB.

### 3.10. Energy Efficiency

The Government of Rwanda plans to reduce dependency on biomass/traditional cooking technologies from 79.9% to 42% by 2024 (NST1). Consequently, EDCL continues to carry out awareness campaigns on the use of alternative cooking technologies and dissemination of Improved Cook Stoves (ICS). From July 2022 to June 2023, 833,611 Improved Cook Stoves were distributed.



Table 9: Billing vs Collection

<b>Billing vs Collections for the first Financial Year 2022/2023</b>									
<b>Billing</b>									
	<b>Post Paid</b>	<b>Pre-paid</b>	<b>Works</b>	<b>Dark Fiber</b>	<b>UETCL</b>	<b>SOCODEE SA</b>	<b>O W N CONSUMPTION</b>	<b>P U B L I C LIGHTING</b>	<b>Total Amount Billed</b>
<b>Jul-22</b>	8,382,925,655	7,307,727,025	456,771,612	-	47,648,345	-	125,341,167	398,468,354	<b>16,195,072,637</b>
<b>Aug-22</b>	8,806,788,932	7,476,494,713	350,593,291	437,224,412	47,183,520	-	129,144,039	413,310,586	<b>17,118,284,869</b>
<b>Sep-22</b>	8,671,069,356	7,133,603,468	222,895,612		48,235,193	-	139,907,350	408,356,971	<b>16,075,803,629</b>
<b>Oct-22</b>	8,755,621,306	7,294,419,749	331,076,165		52,643,798	-	175,239,645	405,804,002	<b>16,433,761,019</b>
<b>Nov-22</b>	8,830,941,287	7,208,375,349	1,013,009,024	219,638,181	55,336,881	-	144,501,697	457,699,611	<b>17,327,300,722</b>
<b>Dec-22</b>	8,613,469,236	7,639,117,094	227,864,261		55,783,253	-	204,313,699	453,828,621	<b>16,536,233,845</b>
<b>Jan-23</b>	9,052,868,350	7,478,122,123	498,414,038	225,532,270	56,499,909	-	236,644,648	429,278,309	<b>17,311,436,690</b>
<b>Feb-23</b>	8,649,727,729	7,376,945,808	439,418,647		49,294,210	-	225,379,303	454,115,296	<b>16,515,386,394</b>
<b>Mar-23</b>	8,934,864,072	7,971,511,659	162,547,453		56,673,614	-	192,474,578	436,616,957	<b>17,125,596,799</b>
<b>Apr-23</b>	8,901,289,673	7,822,704,103	305,807,072		58,557,648	-	193,175,197	447,358,102	<b>17,088,358,495</b>
<b>May-23</b>	9,213,018,321	8,216,835,141	713,695,724	237,944,902	62,414,169	-	208,881,900	442,577,280	<b>18,443,908,258</b>
<b>Jun-23</b>	9,485,466,006	8,320,891,168	149,222,407		59,778,676	-	155,341,997	525,993,638	<b>18,015,358,257</b>
<b>Total</b>	<b>106,298,049,925</b>	<b>91,246,747,399</b>	<b>4,871,315,307</b>	<b>1,120,339,765</b>	<b>650,049,217</b>	<b>-</b>	<b>2,130,345,219</b>	<b>5,273,407,725</b>	<b>204,186,501,613</b>



## Collection

	Post Paid	Pre-paid	Works	Dark Fiber	UETCL	SOCODEE SA	O W N CONSUMPTION	P U B L I C LIGHTING	Total Cash Collections
<b>Jul-22</b>	5,730,796,948	7,307,727,025	456,771,612	-	49,081,113	-	125,341,167	398,468,354	<b>13,544,376,699</b>
<b>Aug-22</b>	9,686,102,998	7,476,494,713	350,593,291	148,874,766	49,122,321	-	129,144,039	413,310,586	<b>17,711,188,089</b>
<b>Sep-22</b>	10,456,399,030	7,133,603,468	222,895,612		48,226,325	-	139,907,350	408,356,971	<b>17,861,124,435</b>
<b>Oct-22</b>	5,990,236,772	7,294,419,749	331,076,165	136,544,207	45,657,090	-	175,239,645	405,804,002	<b>13,797,933,983</b>
<b>Nov-22</b>	9,672,254,360	7,208,375,349	1,013,009,024		46,176,540	-	144,501,697	457,699,611	<b>17,939,815,273</b>
<b>Dec-22</b>	8,441,988,730	7,639,117,094	227,864,261		53,631,806	-	204,313,699	453,828,621	<b>16,362,601,892</b>
<b>Jan-23</b>	9,669,373,511	7,478,122,123	498,414,038		57,033,210	-	236,644,648	429,278,309	<b>17,702,942,882</b>
<b>Feb-23</b>	7,446,143,328	7,376,945,808	439,418,647	131,536,161	57,623,432	-	225,379,303	454,115,296	<b>15,451,667,376</b>
<b>Mar-23</b>	10,763,478,439	7,971,511,659	162,547,453		59,300,919	-	192,474,578	436,616,957	<b>18,956,838,470</b>
<b>Apr-23</b>	6,352,335,063	7,822,704,103	305,807,072	219,638,181	56,084,400	-	193,175,197	447,358,102	<b>14,756,568,819</b>
<b>May-23</b>	8,225,803,811	8,216,835,141	711,750,097		58,129,224	-	208,881,900	442,577,280	<b>17,212,518,273</b>
<b>Jun-23</b>	8,713,558,715	8,320,891,168	149,222,407	118,972,451		-	155,341,997	525,993,638	<b>17,302,644,741</b>
<b>Total</b>	<b>101,148,471,704</b>	<b>91,246,747,399</b>	<b>4,869,369,680</b>	<b>755,565,766</b>	<b>580,066,382</b>	<b>-</b>	<b>2,130,345,219</b>	<b>5,273,407,725</b>	<b>198,600,220,931</b>
	<b>7,403,752,945</b>	<b>Money on Public lighting &amp; Own Consumption</b>							<b>7,403,752,945</b>
<b>Percentage</b>	<b>102%</b>	<b>100%</b>	<b>100%</b>	<b>67%</b>	<b>89%</b>		<b>100%</b>	<b>100%</b>	<b>101%</b>

### 3.11. Financial performance

The table below shows the Financial management status of the financial year ended June 2023.

Table 10: EUCL income statement

	Actual	Budget	Variance
	2022/2023	2022/2023	2022/2023
	Rwf' billion	Rwf' billion	%
Revenue	164.9	154.1	7%
Cost of power	(185.24)	(142.8)	(30%)
<b>Gross Profit/Loss</b>	<b>(20.38)</b>	<b>11</b>	<b>(23%)</b>
<b>Gross profit Margin</b>	<b>(12%)</b>	<b>7%</b>	
Subsidies	11.5	12.1	(1%)
Other income	10.1	7.2	3%
<b>Total Other revenues</b>	<b>21.6</b>	<b>19.3</b>	<b>2%</b>
<b>Operating expenses</b>			
Employment costs	12.8	13.1	0%
Network Maint. & Repair	2.9	2.9	0%
Support to EDCL	1.0	1.0	0%
Support to REG	3.3	3.2	0%
Selling and running costs	4.2	3.6	1%
Administrative expenses	5.1	4.5	1%
<b>Total Operating Cost</b>	<b>29.3</b>	<b>28.3</b>	<b>1%</b>
<b>Operating profit/(loss)</b>	<b>(28.2)</b>	<b>2.2</b>	<b>(30%)</b>
EBIT Margin	(28.2)	2.2	(30%)
Financing costs	7.3	6.8	1%
<b>Surplus/Deficit</b>	<b>(35.5)</b>	<b>(4.6)</b>	



**REVENUES:** Revenues were increased at 7% compared to budgeted for the Financial Year 2022/2023

**COST OF POWER:** Cost of power was at 30% compared to budget mainly due to: Use of Thermal Power plants (So Energy & Jabana) and Hakan, which is more costly to EUCL in the FY 2022/2023.

**SUBSIDIES:** Subsidies of Frw 11.5 billion were received during the financial year 2022/2023.

**OTHER INCOMES:** Actual amount was increased at 3% compared to budgeted amount due to increase in Revenues from Works.

**OPERATING COSTS:** Overall operating expenditure was increased by 1% Compared to the budget due to increase of Selling & running costs and administrative expenses.

**GROSS PROFIT MARGIN:** The company's gross profit has negatively decreased to Frw 20.38 billion (23%) in 2022/2023. Compared to budget of Frw. 11 billion mainly due to increase of cost of power and currency fluctuation.

### 3.11.2 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 five consecutive years and is committed to continue embracing the culture of accountability and transparency in its operations. Below is the budget execution report for the company.

Table11: EDCL Summary of budget execution report

Description	Approved Budget	Revised Budget	Execution Budget	Execution Rate
<b>I. EDCL GoR Budget</b>	<b>75,718,834,225</b>	<b>75,245,508,591</b>	<b>79,166,411,208</b>	<b>105%<sup>2</sup></b>
I.1 Administrative and Support Services	17,632,844,323	17,277,844,323	16,817,193,358	<b>97%</b>
<b>I.2 Domestic Development Budget</b>	<b>58,085,989,902</b>	<b>57,967,664,268</b>	<b>62,349,217,850</b>	<b>108%</b>
1.2.1 Electricity Generation	4,600,000,000	5,877,580,679	5,875,521,341	<b>100%</b>
1.2.2 Electricity Transmission and Distribution	39,263,195,210	38,351,532,056	38,917,657,568	<b>101%</b>
1.2.3 Energy Efficiency and Supply Security	14,222,794,692	13,738,551,533	17,556,038,941	<b>128%</b>
<b>II. External Resources</b>	<b>231,802,276,306</b>	<b>135,965,182,687</b>	<b>91,753,289,608</b>	<b>67%</b>
II.1 External Grant	56,790,202,543	41,905,439,656	35,718,594,586	<b>85%</b>
II.2 External Loan	156,066,050,176	76,505,402,907	49,853,525,743	<b>65%</b>
III. Other Budget	18,946,023,587	17,554,340,123	6,181,169,279	<b>35%</b>
<b>Grand Total</b>	<b>307,521,110,531</b>	<b>211,210,691,278</b>	<b>170,919,700,816</b>	<b>81%</b>



### 3.12. Gender mainstreaming

Gender is one of the core values of the Vision 2050 that aims for Rwanda to reach upper middle income by 2035 and high income by 2050. The aim is to ensure gender equality and equality through inclusive development model (promoting gender equality, pro-poor interventions, unity, and solidarity). This entails greater consideration of gender as an enabling development approach towards sustainable transformation and development.

Gender and Family Promotion is one of the cross-cutting areas under the National Strategy for transformation (NST1 2017-2024) and emphasizes on interventions geared to: promote access to finance for women, mainstreaming gender in employment and job creation strategies, capacity development of the gender machinery and scaling-up Early Childhood Development (ECD) services at village levels as well as strengthening and promoting gender equality and ensure equal opportunities for all Rwandans.

#### GENDER IN EMPLOYMENT AND RECRUITMENT PROCESS

Table12: Employees by gender

COMPANY	MALE	FEMALE
REG Holding	72.34%	27.66%
EDCL	81.90%	18.10%
EUCL	77.61%	22.39%
<b>TOTAL</b>	<b>78.51%</b>	<b>21.49%</b>

By end of June 2023, comprehensively the total employees of REG with its subsidiaries 78.51% are males while 21.49% are females. This means in REG Holding 72.34% employees are males and 27.66% are females while in EDCL&EUCL 81.90%&77.61% are males and 18.10%&22.39% are females respectively.

#### GENDER STATUS IN REG MANAGEMENT

Table12: Management staff by gender

Details	Executive			Director			Head & Manager		
	Men	Women	Women rate	Men	Women	Women rate	Men	Women	Women rate
REG Holding	1	0	0	5	1	16.67%	19	4	17.39%
EDCL	1	0	0	6	2	25%	30	9	23.08%
EUCL	1	0	0	6	2	25%	95	14	12.84%

## GENDER IN COMPETITIVE GRANTS

During financial year 2022-23Fy the call for proposal for Endorsing a Women in Science Research and Innovation Grant application for the project, titled: **“Design, Fabrication and Testing of Solar Powered Induction Cooker.”**

REG plays parts and finally among the winners a woman working in REG Dr. Delphine Abijuru (Head of science and Technology under Research and Development department at REG) currently is heading the ongoing project with funds approximately Ninety million Rwandan Francs (90,000,000 Frw). This goes in line with the energy sector strategic plan commits to devise strategies that will free up the time spent by women in collecting firewood which is still the main source of cooking energy in Rwanda, through providing improved energy cooking stoves and other alternative sources of energy which shall improve health and environmental conditions.

This also will address the gaps revealed by **EICV5 2016/2017**, Thematic Report-Utilities and Amenities stipulated that Most of households in Rwanda are still using traditional three stone stoves which imply using more firewood. More efforts should then be employed to expand access to improved cook stoves given the overwhelming evidence of the

negative health and environmental consequences. Usage of improved cook stoves will reduce the household burden for firewood collection which benefits all family members. However, women will benefit more as they will save time to do other productive activities. The health risks cited by the women include eye problems, headaches, diseases of the respiratory system and back pain from carrying heavy loads of wood.

According to the GMO, Primary Data, 2018 revealed that 70.5% of surveyed male and female headed households believe that unavailability of energy mostly for cooking and lighting affects community safety especially for women and girls while collecting firewood, fetching water, and travelling during evening and nights. The mentioned risks and fears by women and girls include rape, home burglaries and cases of accidents which may endanger their lives.

## GENDER IN SOCIAL ACTIVITIES

During the financial year ended June 2023, 35 REG staff majority women have been participated in the event of providing supports to families affected by the natural disasters at Rubavu District Nyundo Sector. The support was given to 100 families headed by men and women. The beneficiaries were given the support of 4,984,500 Frw.





## 4. CONCLUSION

This report highlights the key achievements realized in the Rwanda Energy Group over the course of fiscal year 2022/2023, 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 FY2022/23*

Output			Data source	Annual target	Activities to deliver output	Annual achievement
<b>Outcome 10: Increased Electricity Generation Installed Capacity from 273.36 MW to 302.16 MW by June 2023</b>						
<b>Output:</b> Nyabarongo II (43.5 MW) HPP constructed	% Land	25%		45%	1) Property valuation and compensation.	68%
	% Detailed Design Approval	30%		55%	2) Access road design approval 3) Dam design approval 4) Hydraulic & geotechnical design approval 5) 110kV Evacuation line design	76%
	%	7%		14%	6) Construction of Employer's campsite 7) Commencement of excavation for diversion tunnel 8) Payment of Taxes 9) Construction of access road 10) Effect payments	18%
<b>Output:</b> Rusumo HPP constructed	% Progress	93%		100%	1) Construction Monitoring 2) Reporting on work progress 3) Commissioning	<input type="checkbox"/> Construction activities completed at 100% <input type="checkbox"/> Dry commissioning completed. <input type="checkbox"/> Weight commissioning ongoing



Output			Data source	Annual target	Activities to deliver output	Annual achievement
<b>Output:</b> Ntaruka A (2.1MW) power plant constructed	% Progress	85%		100%	1) Construction Monitoring 2) Reporting on work progress 3) Completion of the construction works for the Evacuation line 4) Testing and commissioning	<input type="checkbox"/> Project completed and plant fully commissioned with 2.3 MW injected to the national grid
<b>Output:</b> Shema power lake Kivu plant (56MW) constructed	% Progress	70%		85%	1) Monitoring electromechanical works 2) Reporting on work progress	<b>Overall progress stands at 95%</b>
<b>Outcome 11: Improved Power Transmission and Distribution Network for reliability of power supply</b>						
<b>Output:</b> 63.5km of 220kV Rwanda-Burundi Transmission Line and associated SS constructed	% Progress	98%		100%	1) Follow up on construction 2) Testing and commissioning.	<b>Project fully completed</b>
<b>Output</b> :119km of 220kV Single circuit Rusumo-Bugesera-Shango Transmission Line and associated SS constructed	% Progress Rusumo-	95%		100%	1) Follow up on construction works 2) Commissioning	<b>Project fully completed</b>
<b>Output :</b> Improvement of Substations and Distribution network (JICA-III, Upgrade of Gasogi s/s constructed)	% Progress	98%		100%	1) Follow up on construction works 2) Complete property valuation and compensation 3) Commissioning	<b>Project fully completed</b>

Output			Data source	Annual target	Activities to deliver output	Annual achievement
<b>Output 33:</b> 631.85km of National roads served with streetlights	% Progress	67%		100%	1) Construction works 2) Expropriation 3) Commissioning	<b>650.74</b> Km of streetlight have been constructed and energized.
<b>Outcome 12: Increased access to electricity</b>						
<b>Output: 150,430</b> New households connected to the grid	Number of HHs			<b>150,430</b>	1) Carry out designs and survey 2) Procurement of materials 3) Construction works 4) Property valuation and compensation 5) Supervisions of works 6) Installation and connection	<b>76,688</b> HHs connected
<b>Output :205</b> New Productive use areas connected	Number of PUAs	8,414 PUAs		<b>205</b>		<b>414</b> productive users connected
	Number of HHs	598,762 HHs		<b>10,000</b>	1) Carry out awareness campaigns 2) Inspection of installed systems 3) Reporting	<b>182,380</b> HHs connected
<b>Outcome 14: Reduced biomass usage for cooking</b>						
<b>Output:</b> Dissemination of 100,000 clean cooking stoves facilitated	Number of	499,419		<b>100,000</b>	1) Monitoring and controlling the implementation of the contract 2) Advance payment 3) Promotion of clean cooking technologies	<b>833,611</b> clean cooking stoves disseminated



Output			Data source	Annual target	Activities to deliver output	Annual achievement
Output: 5,000 improved cookstoves inspected	Number	6,022	EDCL Reports	5,000	1) Select stoves to be inspected 2) Inspect ICS systems 3) Establish and update the database of inspected ICS systems	9,790 improved cookstoves inspected.

### Annex 2: Generation Installed Capacity

No	Plant name	Technology	Installed Capacity
1	Ntaruka	Hydro	11.25
2	Mukungwa 1	Hydro	12.00
3	Gisenyi	Hydro	1.70
4	Gihira	Hydro	1.80
5	Rukarara 1	Hydro	9.00
6	Rukarara 2	Hydro	2.20
7	Murunda	Hydro	0.10
8	Rugezi	Hydro	2.60
9	Keya	Hydro	2.20
10	Cymbili	Hydro	0.30
11	Mazimeru	Hydro	0.50
12	Nkora	Hydro	0.68
13	Jabana I	Thermal	7.80
14	Jabana II	Thermal	21.00
15	Methane Gas (KPI)	Methane Gas	3.60
16	Jali Solar	Solar	0.25
17	Musarara	Hydro	0.40
18	Mukungwa 2	Hydro	3.60
19	Nshili 1	Hydro	0.40
20	Giciyel	Hydro	4.00
21	GigaWatt Global	Solar	8.50
22	Nyabarongo 1	Hydro	28.00
23	Nyabahanga	Hydro	0.20
24	Janja	Hydro	0.20
25	Kivuwatt	Methane Gas	26.19
26	Giciyell	Hydro	4.00
27	Gishoma Peat	Peat	15.00
28	Mutobo	Hydro	0.20
29	Gaseke MHPP	Hydro	0.50
30	SO ENERGY Mukungwa 1	Thermal	10.00
31	SO ENERGY MASORO	Thermal	10.00
32	SoEnergy Birembo	Thermal	10.00
33	NASHO SOLAR	Solar	3.30
34	Gashashi	Hydro	0.28
35	Rwaza	Hydro	2.60
36	RUKARARA V-MUSHISHITO	Hydro	5.00

No	Plant name	Technology	Installed Capacity
37	RUBAGABAGA	Hydro	0.45
38	Agatobwe	Hydro	0.39
39	Nyirantaruko	Hydro	1.84
40	KIGASA MHPP	Hydro	0.27
41	Giciye III	Hydro	9.80
42	Nyirabuhombohombo	Hydro	0.65
43	Hakan QP	Peat	70.00
44	Kvumu Mwange	Hydro	0.33
45	SPLK	Methane Gas	
46	Ntaruka A	Hydro	2.00
47	Nyamyotsi 2 )	Hydro	0.10
48	Nyamyotsi 1	Hydro	0.10
49	Mukungu Pico	Hydro	0.02
50	Ruzizi I	Import	4.10
51	Ruzizi II	Shared	12.00
52	Kabale (UETCL)	Import	2.00
53	Mirama Shango (UETCL)	Import	40.00
			<b>353.402</b>

*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



S/N	TRANSMISSION LINE	KILOVOLTAGE (KV)	LENGTH (KM)	COMPLETION YEAR
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
41	Rwanda-Burundi Transmission Line	220	62.84	2022
42	Rusumo-Bugesera-Shango Transmission	220	117.60	2022
42	Rwanda-DRC interconnection line.	229	4.42	2022
			<b>1,158.00</b>	