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Electricity Regulatory Authority
Ministry of Energy and Natural Resources

ANNUAL REPORT
2023-2024

Message from the Chairperson

I am pleased to present this year's annual report for the Electricity Regulatory Authority (ERA). Over the past year, we have made substantial progress in improving our regulatory frameworks to support a sustainable energy future for Bhutan.

We have developed and updated several important regulations, including Licensing Regulation for Solar Plant and draft Renewable Energy Tariff Determination, which are key to fostering the growth of renewable energy. Additionally, our review of the Distribution Code, Dispute Resolution Procedures and Internal House Wiring regulations reflects our dedication to transparency and accountability in our operations.

A major milestone this year was the launch of our five-year strategic plan, introduced by the Honorable Minister for Energy and Natural Resources. This plan outlines our vision, mission, core values and strategic goals that will guide us in the coming years.

ERA has also set tariffs for solar and hydropower plants, maintaining fair and competitive energy pricing. At the same time, we established performance standards for distribution and transmission companies, ensuring a reliable and efficient energy supply for everyone.

I am also pleased to report that the ERA issued several licenses this year, especially for solar projects, and provided exemptions on certain solar licenses to streamline processes and encourage investment in this crucial sector.

As we look ahead, let us continue working together with shared commitment to sustainability and innovation in the electricity sector. Thank you for your continued support and dedication to ERA's mission.

Tashi Delek

Phuntsho Namgyal
Chairperson

Message from the CEO

I am honored to present ERA Annual Report for the fiscal year 2023-2024. The past year has been marked by notable accomplishments as we worked diligently to enhance our regulatory frameworks and drive the growth of energy sector in Bhutan.

During the year, ERA worked on the formulation of new regulations and review of exiting regulations aimed at facilitation of a more robust energy landscape. These frameworks is expected to support the deployment of renewable energy projects and create a conducive regulatory environment for investments.

The launch of our Five-Year Strategic Plan by the Honorable Minister for Energy and Natural Resources (MoENR), is a significant milestone for ERA. The Strategic Plan provides a clear direction for our initiatives and underscores our commitment to align our regulatory efforts with the overall National goals.

In addition, we have established performance standards for our distribution and transmission companies, ensuring they continuously make improvement in reliability and efficiency of electricity supply.

We have also issued numerous licenses this year also provided exemptions for small solar projects to simplify the licensing process, encourage investment and innovation in the renewable energy sector.

As we look ahead, I am excited about the opportunities that await us and we will continue to champion best practices and innovate for more responsive regulatory initiatives.

Thank you for the continued support as we strive to work towards a sustainable and resilient energy future.

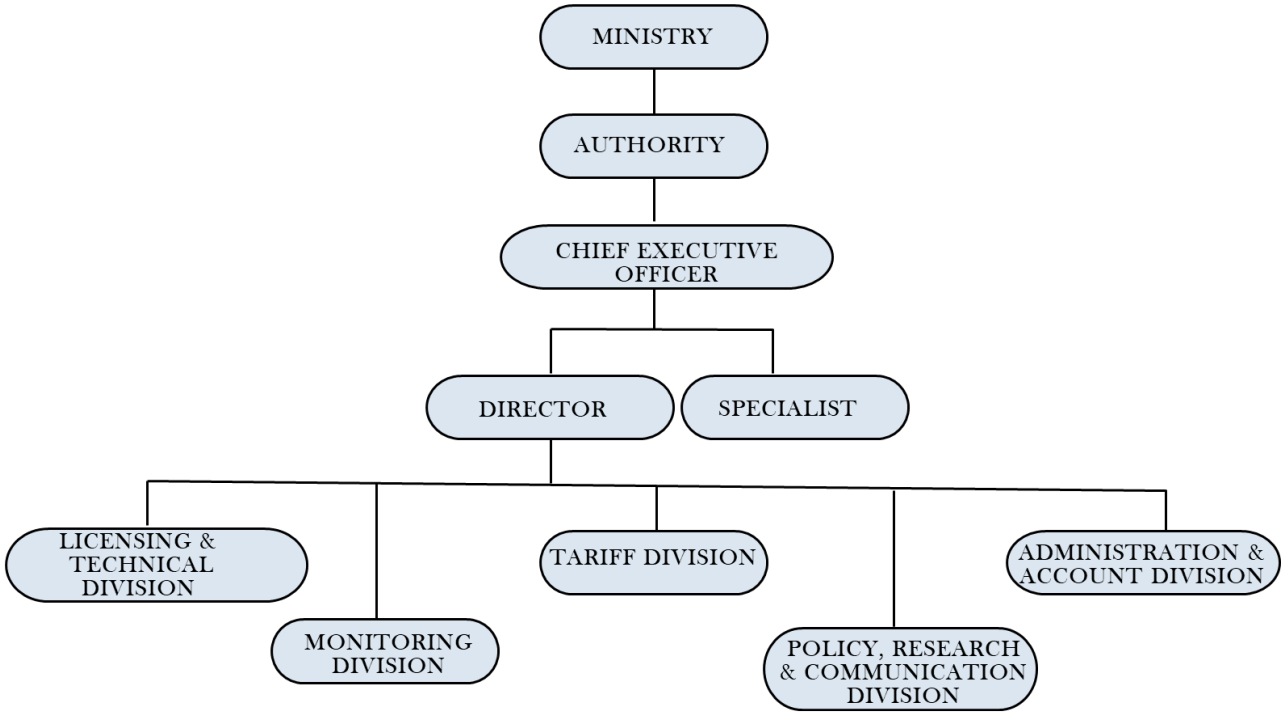
Deki Choden
Chief Executive Officer

TABLE OF CONTENT

1. ELECTRICITY REGULATORY AUTHORITY

ERA was established by Section 7 of the Electricity Act of Bhutan 2001 (Act) to oversee and regulate the country's electricity sector. As per the Act, the ERA should consists of at least three members, excluding the chairperson and member secretary, all of whom are appointed by the Minister under terms and conditions determined by him, for a maximum period of five years. Currently, there are five members of the Authority appointed by the Honorable Minister of MoENR, in accordance with the Act and the Civil Service Reform Act of Bhutan 2022.

ERA is supported by a Secretariat headed by a Chief Executive Officer, who appoints staff with the Authority's approval to carry out its daily operations. The Secretariat comprises five divisions: the Tariff Division, Licensing and Technical Division, Monitoring Division, Policy, Research and Communication Division, and Administration and Accounts Division. At present, the Secretariat employs a total of 36 staff members.



Organogram

2. MEMBERS OF THE AUTHORITY

Mr. Phuntsho Namgyal,
Director, Department of Geology and Mines, MoENR
Chairperson

Mr. Ngawang Norbu,
Director, Digital Asset Department, DHI
Member

Mrs. Dechen Peldon,
General Manager, Finance Division,
Druk Air Corporation Ltd
Member

Mrs. Nima Om, Chief, Legal Officer, MoENR
Member

Mrs. Deki Choden,
Chief Executive Officer, ERA
Member Secretary

3. VISION, MISSION AND CORE VALUES

VISION

"World Class Electricity Regulator and Facilitator".

MISSION

To provide electricity sector stakeholders with fair, non-discriminatory, and efficient services to ensure a safe, reliable, and efficient supply of electricity.

CORE VALUES

1) Accountability
2) Excellence
3) Integrity
4) Innovation
5) Transparency

4. FUNCTIONS OF THE AUTHORITY

1) Development of Regulatory frameworks

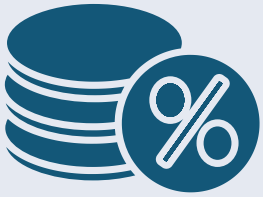
Formulation of Rules, Regulations, standards, codes, principles and procedures to ensure, safe, reliable, secure and efficient electricity services.

2) Issue, modify and revoke License

Process and issue license for construction, generation, distribution, transmission, system operation, export, import of electricity.

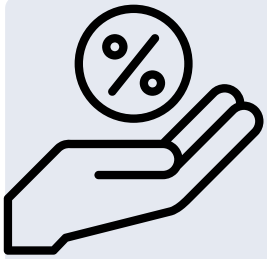
3) Monitor the complaince of Licensees

Carry out compliance monitoring of the performances of licensees.



4) Determine and approve Tariffs submitted by Licensees

Review, assess and determine generation and retail tariffs submitted by generation, distribution, transmission and system operator licensees.

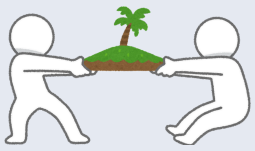


5)Prescribe and collect fees, charges or royalties from the Licensees

Prescribe and collection fees such as license application fees, annual license fees, license renewable and modification fees, tariff determination fees and Miscellaneous charges.

6) Impose any fines, sanctions or penalties

Impose any fines, sanctions and penalties for breaching provisions of the Act, rules, regulations and license terms and conditions and etc.



7) Establish Disputes Settlement Procedures and Settle Disputes

Settle disputes between licensees, and between licensees and consumers in relation of the electricity services.

5. ACCOMPLISHMENTS FOR THE YEAR 2023-2024

During the fiscal year 2023-2024 based on the approval of the Honorable Minister of the Ministry of Energy and Natural Resources, following activities were carried out:

1) REGULATORY FRAMEWORKS

i) Developed Licensing Regulation for Solar Power Plant 2024

Licensing Regulation for Solar Power Plant 2024 Stakeholder Consultation

The ERA issued a Guideline on Exemption of License for Generation from Distributed Energy Resources below 500 kW in 2022. In order to enhance clarity and reduce administrative burden for the applicant and ERA, the ERA initiated a comprehensive review of the Guideline with the technical support from the International Solar Alliance (ISA) via Idam Infrastructure. For enforcement purposes, the Guideline was converted to a regulation and is titled "License Regulation for Solar Power Plant 2024."

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ii) Formulation of Draft Non-hydro Renewable Energy Tariff Determination Regulation

180kW grid-tied solar plant in Ruebisa

To support the RGoB's plans for non-hydro renewable energy projects and to engage the private sector in promoting energy security and economic growth, the ERA began formulating tariff determination regulations for non-hydro renewable energy projects. Preliminary research has been conducted and the preliminary draft regulation was developed. .

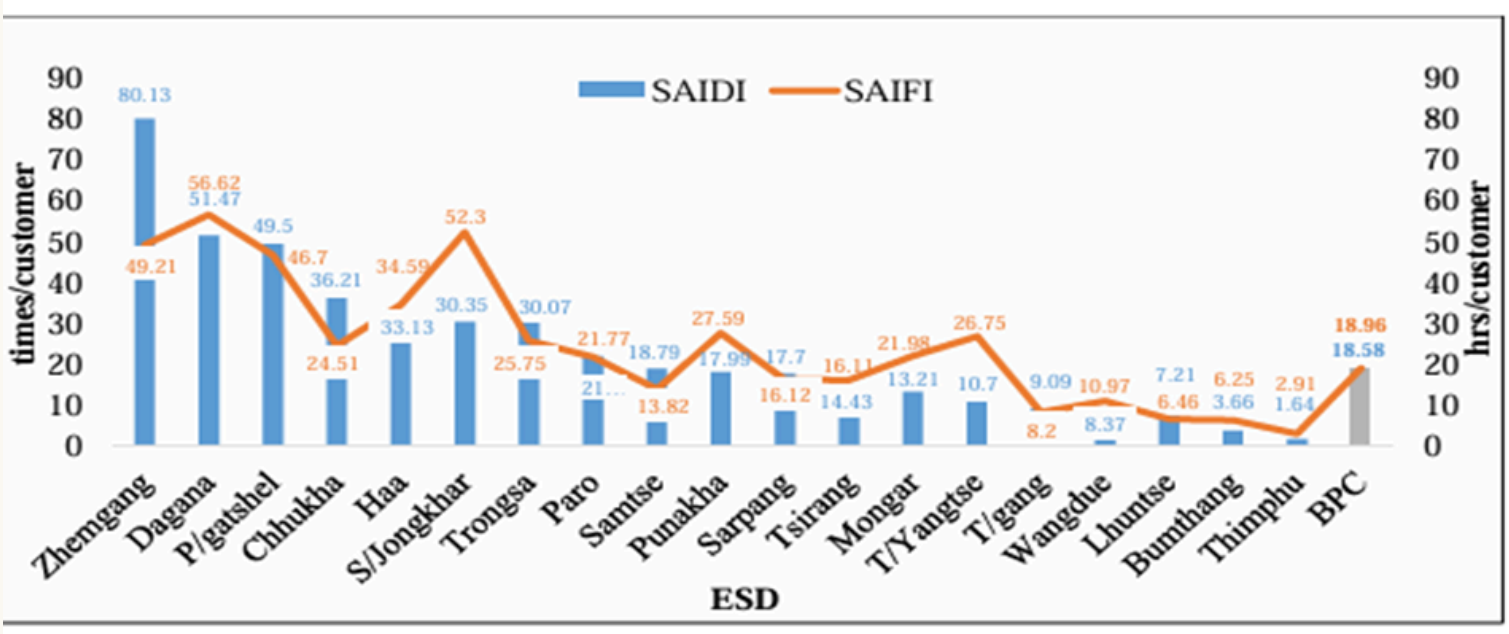
ERA received regulatory assistance from the ISA through consultant Idam Infra to develop a comprehensive final draft regulation which discusses the categorization and capacities of solar power plants and various parameters, including gearing ratio, salvage value, capacity utilization factor (CUF), capital cost, tariff methodology (RoE and RoCE), metering schemes and other parameters. A consultation with Department of Energy on the draft regulation was also conducted following the submission of a discussion paper.

iii) Set Distribution Power Reliability and Transmission System Performance Standards

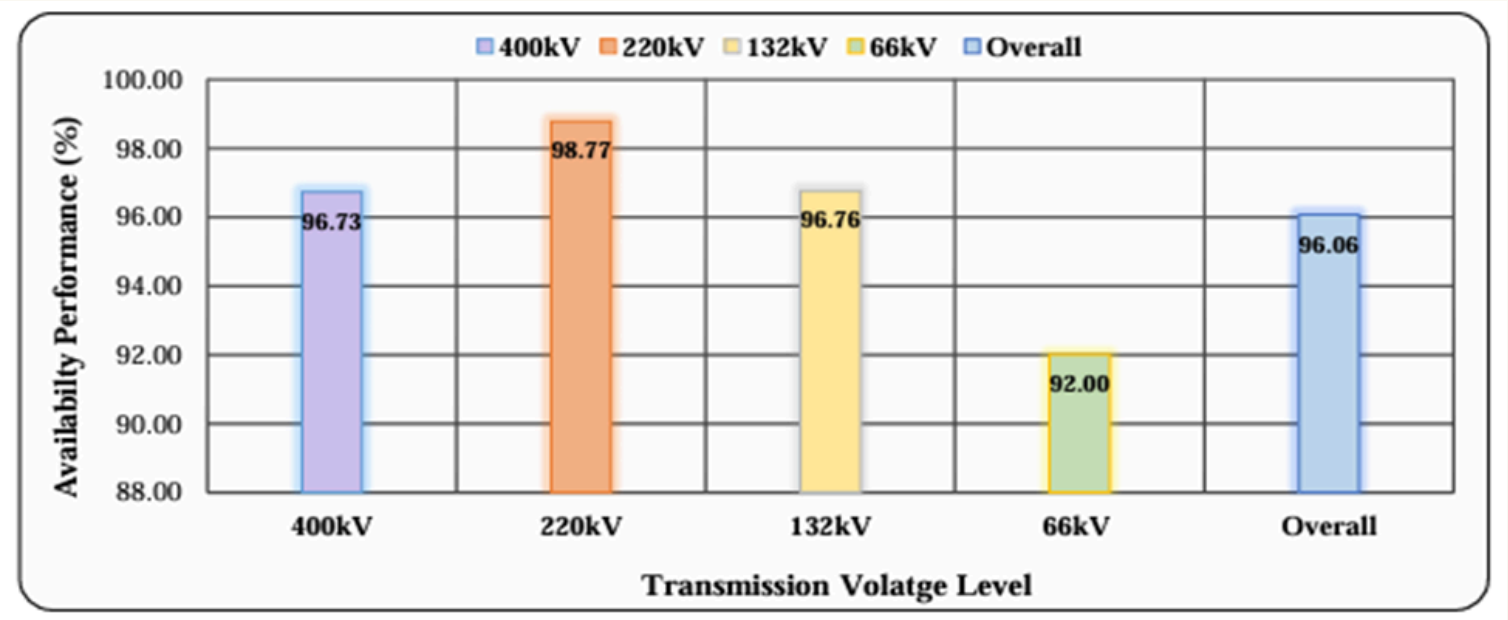
The ERA studied the power outages in the distribution and transmission system for 2023 to enhance power reliability through strong regulatory interventions and benchmarking. Throughout the process of assessing the distribution power reliability and transmission system performance, the ERAS has engaged in over three (September 29, 2023, October 17, 2023 & January 15, 2024) intensive face-to-face meetings with senior officials of Bhutan Power Corporation (BPC) to improve the power outage reporting format, with the focus on capturing the issues such as root cause and appropriate categorization of the outages for smooth analysis and determination of the reliability standards.

Moreover, the Secretariat officials visited the Electricity Services Divisions (ESD) and Electricity Sub-Services Divisions (ESSD) of BPC to validate data and gain insights into the root causes of power outages. Furthermore, the Secretariat conducted two (December 18, 2023 & January 15, 2024) face to face meetings with the officials from the transmission department of BPC.

The main root causes of the power outages were identified, and actions to be taken by the distribution licensee was accordingly intimated. The following are the ESD wise distribution system annual reliability indices and transmission system availability performance for different voltage level for the year 2023.



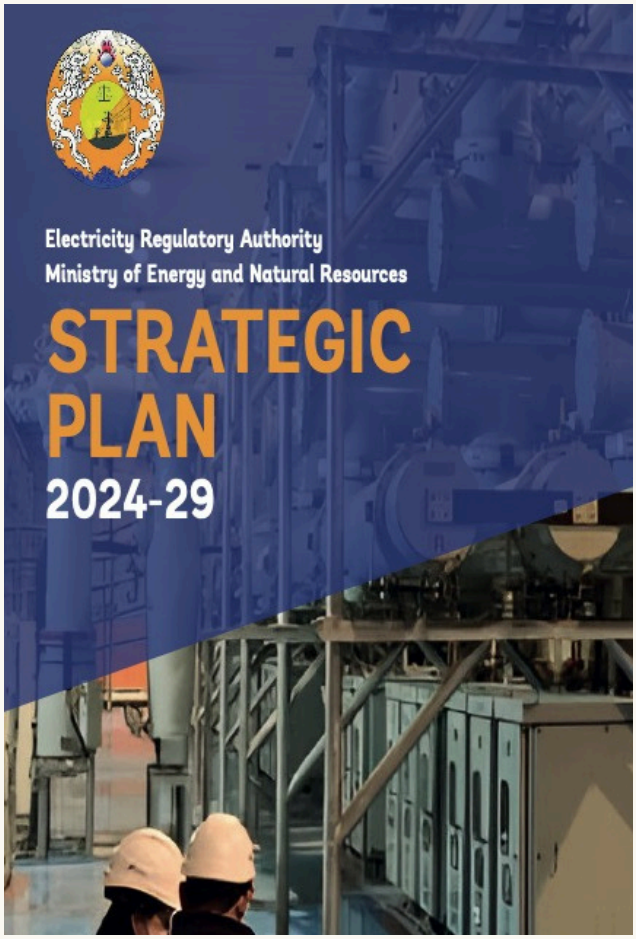
ESD Wise Annual Reliability Indices (2023)



System Availability Performance for Different Voltage Level (2023)

Based on the study findings, the ERA has set distribution reliability indices targets of SAIFI and SAIDI for BPC. Similarly, the transmission system performance standard is set at 98% for the year 2024-2025. The detailed report on the "Distribution Power Reliability and Transmission System Performance Report 2023" was prepared and uploaded in ERA website.

iv) Formulated Strategic Plan 2024-2029



To align with the 13th Five-Year Plan and the government's long-term vision, the ERA Strategic Plan 2024-29 was developed and officially launched by the Honorable Minister, MoENR on August 16, 2024. This Strategic Plan marks a pivotal step for ERA, establishing a clear vision, mission, and core values for ERA. It outlines three primary goals: Regulatory Framework Excellence, Regulatory Service Excellence, and Embracing Innovation. The development process involved consultations with stakeholders from the power sector to address their concerns and challenges. With this Strategic Plan, ERA is committed to advancing regulatory frameworks, enhancing service delivery, and fostering innovation within the power sector over the next five years.

v) Formulated Grid Discipline Mechanism Regulation 2024

Based on the Guideline on Grid Discipline Mechanism 2023 issued by the Department of Energy where it aims to improve the national power system operation to ensure that grid users follow the scheduled electricity generation and drawal, the ERA developed the Grid Discipline Mechanism Regulation 2024 as a commercial mechanism to support this policy guideline. This regulation outlines the steps for energy scheduling and how deviation charges will be calculated.

The Regulation has come into force from June 2024 with financial consequences for any deviations.

vi) Reviewed Dispute Resolution Procedure 2009

The ERA conducted a comprehensive review of the Dispute Resolution Procedure 2009. This review was prompted by the increased focus on consumer service delivery and licensee performance, particularly with the introduction of SAIFI and SAIDI indices. The review identified several gaps in the existing Dispute Resolution Procedure (DRP) 2009. Based on these findings, the DRP 2009 will be amended in the next fiscal year.

vii) Reviewed Distribution Code (Amendment) Regulation 2022

The ERA conducted a comprehensive review of the Distribution Code (Amendment) Regulation 2022 to ensure clarity, effectiveness, and alignment with evolving needs and standards in the electricity service sector. Technical support from the South Asia Regional Energy Partnership (SAREP) was also sought during this process. The review identified several shortcomings in the current regulations that could hinder the optimal functioning of the distribution system. Based on these findings, the Distribution Code (Amendment) Regulation 2022 will be amended in the next fiscal year.

viii) Reviewed Internal House Wiring Regulations 2016

The ERA developed and issued the Internal House Wiring Regulations (IHWR) 2016 to ensure safe and secure installations, operation, and maintenance of internal house wiring in the country. However, the regulation contained several shortcomings, including limited scope, unclear roles and responsibilities, inadequate technical requirements, and absence of an electricity supply process. To address these issues, the ERA conducted a review of the IHWR 2016 during this fiscal year. Based on the findings, the Regulation will be amended in the next fiscal year.

Sensitization on regulatory frameworks to Licensees

2) TARIFF

i) Approved Bhutan Power System Operator Annual Charges

According to Clause 18 of the System Operator Charges Regulation 2022, the System Operator must submit a request to reconcile actual annual costs with the total charges collected at the end of each fiscal year. This request should be submitted together with the System Operator charges request for determining annual charges for the next fiscal year. Following this regulation, the Bhutan Power System Operator (BPSO) submitted its proposal for the annual charges to ERA for the fiscal year 2023-2024, along with its actual expenditure for the fiscal year 2022-2023 on 18th July 2023.

The ERA reviewed the proposal for Annual Charges and the planned activities for the fiscal year 2023-2024. After this review, the ERA approved the BPSO Annual Charges of Nu 255.26 million on 5th October 2023 and allocation of the charges to Druk Green Power Corporation (DGPC), Mangdechhu Hydropower Project (MHP), Dagachu Hydro Power (DHP), and BPC.

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ii) BPC Interim Tariff Application

The BPC submitted an interim tariff application on 28th August 2023 for the period from 1st July 2023 to 30th June 2025. In the application, BPC stated that the business environment and power generation situation had changed significantly. The ERA carefully reviewed the application, along with additional information provided by BPC, and also sought input from stakeholders.

After conducting a thorough review, ERA determined that there was no requirement for a change in the approved tariff. However, due to decreased power generation resulting in purchase of additional power at higher costs, it was necessary for BPC to recover these additional cost in order to maintain financial stability. As a result, on 12th December 2023, ERA issued an order to BPC to collect Nu 233.69 million from both the generators and consumers to cover these additional power purchase costs.

iii) Approved Generation Tariff for Tangsibji Hydro Energy Limited

The DGPC submitted a proposal for the domestic generation tariff of the 118 MW Tangsibji Hydro Energy (THyE) project for the period from January 2024 to June 2025 on 27th November 2023. The ERA conducted an extensive review of the proposal based on the Domestic Electricity Tariff Policy (DETP) 2016, the Tariff Determination Regulation (TDR) 2022, and the parameters adopted during the tariff review of DGPC and MHP in 2022. Following the public consultation procedure, ERA notified the general public of the application received, however, no comments were received.

After thorough deliberation, ERA issued a tariff order for the domestic generation tariff of Nu 3.89/kWh to THyE from the Commercial Operation Date (25th January 2024) until 30th June 2025 on 5th February 2024.

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iv) Approval of 3.80MW DSP SI Phase II Solar Project Tariff

De-suung Skilling Program Solar Initiative (DSP SI) submitted a tariff proposal to the ERA requesting a generation tariff of Nu 4.50/kWh which covers the DSP SI Phase II solar project, which includes a 2.1 MW ground-mounted solar installation at Dechencholing, a 200-kW rooftop solar project at the Centenary Farmers Market (CFM) in Thimphu, and a 1.5 MW rooftop solar project at the Royal Academy in Pangbisa, Paro.

The ERA reviewed the proposal following the TDR 2022, the DETP 2016, the Alternative Renewable Energy Policy 2013, and the parameters from the DSP SI Phase I tariff review conducted in September 2023, along with international best practices. After a thorough review, tariff of Nu 4.50/kWh for one year, starting from April 2024 to June 30, 2025, was approved for the 3.80 MW DSP SI Phase II project as pilot project.

Dechencholing Solar Power Plant Phase I

3) LICENSE

The ERA has granted licenses to the following power plants after thorough assessment of their applications, as mandated by the Electricity Act of Bhutan 2001. The following are the list of licenses issued by the ERA.

i) Construction License

Project Name	Applicant Name	Licence Type	Issue Date
17.38 MW Sephu Solar Power Plant	Department of Energy (DoE)	Construction	2nd October 2023

ii) Operation License

Project Name	Applicant Name	Licence Type	Issue Date
118 MW Nikachhu Hydropower Project	Tangsibji Hydro Energy Limited	Operation	25th December 2023

iii) System Operator License

Applicant Name	Licence Type	Issue Date
Bhutan Power System Operator	Operation	25th December 2023

iv) Exemption License

Project Name	Applicant Name	Licence Type	Issue Date
2 MW Phase-II Dechencholing Solar Power Plant	Desuung Skilling Program	Construction Exemption	15th September 2023
1.4 MW Rooftop Solar Power Plant at The Royal Academy	Desuung Skilling Program	Construction Exemption	6th December 2023
30 kW Shangsa Off-grid Solar PV Plant	Department of Energy	Construct, Generate and Distribute Exemption	5th January 2024
250.56 kWp Phase-II Solar Rooftop Project at CFM	Desuung Skilling Program	Construct and Operate Exemption	1st April 2024
915 kWp Solar Power Plant for 305 Households	Department of Energy	Construct and Operate Exemption	28th March 2024

1.4 MW Rooftop Solar Power Plant at The Royal Academy, Pangbisa

v) Extension of construction License

Licencee	Installed Capacity	Licence Type	Extended On	Actual Validity	Extension Validity
Punatsangchhu-I Hydroelectric Project Authority	1200 MW	Construction	29th March 2024	10th November 2015 or the commercial operation date, whichever is earlier	31st December 2028
Punatsangchhu-II Hydroelectric Project Authority	1020 MW	Construction	8th February 2024	9th Feburary 2019 or the commercial operation date, whichever is earlier	31st December 2024

4) RELIABILITY

i) Issuance of Power Outage Reporting Format

The ERA presented the power outage reporting format during the third quarter (Q3) Performance Review Meeting (PRM), BPC at Paro on October 17, 2023. The new power outage reporting format prepared by ERA that needs to be submitted by BPC was discussed considering all the requirements of the Distribution Code (Amendment) Regulation 2022. BAsed on the consultation, the format for reporting the power outages was finalised during the meeting which hereafter BPC will report the daily power outages. The introduction of feeder wise reliability indices target under the Guaranteed Service Levels (GSL) and challenges with the existing GSL provisions under the Distribution Code (Amendment) Regulation 2022 was also discussed.

PRM meeting at Namsay Choling Resort, Paro

ii) Assessment on National Electricity Reliability

The ERA in collaboration with the DoE and BPSO carried out a study to assess power reliability and quality studies for 2023. The study involved a site visits from 26th December 2023 to 10th January 2024 in 8 dzongkhags namely Paro, Chhukha, Samdrup Jongkhar, Dagana, Sarpang, Zhemgang, Gasa and Thimphu which have been selected in consideration of load from three domains, viz. urban, rural, and industrial area.

Overall, the root causes of the power outage were found same for all the distribution line and substation such as High Tension (HT) fuse failure, line maintenance, and transformer overloading. To improve the power supply reliability and quality, following measures such as upgrading of Distribution Transformer (DT) (overloaded), adequate electrical equipment spares of required specification and use of insulated conductors that can minimize the Right of Way (RoW) requirement and momentary faults were recommended. Since, one of the major causes of power outage is HT fuse failure, the team advised the BPC to explore an alternative option for HT fuse in the distribution network. After assessment and analysis, the working committee has published the “National Electricity Reliability Assessment 2024” report.

Power quality assessment and 66kV multi-circuit tower at Pasakha

iii) Power Reliability Study of ESD Phuentsholing and Samtse

The ERA visited the 33kV Serina & Bosokha feeder under the ESD Phuentsholing on April 22, 2024 to study the distribution system network with regard to the power supply reliability. The Serina & Bosokha feeder is 110.65 kms in length and passes through thick vegetation, rugged terrain, and the area receives heavy rainfall and lightning strikes during summer season. It is observed that the feeders are equipped with switching and control mechanism such as Load Break Switch (LBS), Automatic Recloser Circuit Breakers (ARCBs) and Fault Passage Indicators (FPIs) in order to improve the reliability of the feeder. The BPC official was recommended to install some more FPIs (communicable and non-communicable) wherever necessary to help reduce the outage duration. The following figure shows the tapping point of 33kV Serina & Bosokha feeder at Sadu Madhu.

33kV Serina & Bosakha Feeder at Sadu Madhu

During the visit, RoW issues were observed on distribution lines owned by the private industries/consumers. For those issues, the BPC was instructed to inform the respective private owner to do the RoW clearing to prevent the power outage in future.

RoW clearing issues on private power distribution lines

The ERA also visited the 11 kV Chengmari distribution line in Samtse on April 25, 2024 to inspect and understand the ground realities of the lines and their related issues. It is observed that the 11kV Chengmari distribution line spans approximately 85 Km from the 33/11kV Samtse with numerous trunk lines in between, affecting both power quality and reliability. However, this issue has been addressed through construction of the 33/11kV, 2.5MVA substation at Yoeseltse, which was energized on April 26, 2024. This new substation has helped to improve the power quality and reliability as the Chengmari feeder will have two power sources, one from Samtse substation and another from the new substation at Yoeseltse having the incomer (33kV Norbugang feeder) from the Dhamdum substation.

11kV Chengmari Feeder

33/11kV, 2.5MVA Substation at Yoeseltse

The team also conducted the earthing test of the substations visited to ensure that earthing system were within the standards to provide protection to their equipment or system and safety of the personnel.

The earthing test conducted at Ring Main Unit (RMU), Karbraytar under ESD Phuentsholing gave the maximum reading of 70.8 ohms and the minimum of 20.93 ohms. Similarly, the earthing test was conducted at DT substation in Norbugang under ESD Samtse and the reading ranges from 30.7 to 66.1 ohms. Accordingly, the BPC was advised to improve the earth resistance values within permissible limits by adopting efficient methods.

Conducting earthing test

iv) Visit to High Voltage Industries

The ERA visited Bhutan Brewery Private Ltd, Bhutan Silicon Metal Private Ltd, and Bhutan Carbide and Chemicals Ltd in Paskha to verify the power reliability and quality issues. The industries visited shared that they are not experiencing any power reliability or quality issues, as they have dedicated feeders from the Singhigaon substation. The team was informed that industries fed by the 66kV ring network usually face the power reliability issues. The team discussed the issue on the 66kV ring network system with the BPC and was noted that BPC is in the process of mitigating the issues through new investment plan.

Visit to BBPL

Visit to BSMPL

v) Site visits

To gain a comprehensive understanding of project components and operations, officials of ERA conducted site visits to solar and hydropower plants. These on-site inspections allowed for firsthand observation of the projects' various stages, from construction to operation and challenges faced by the Licensees.

Site visit to 180 kW Solar Power Plant in Rubessa, 32 MW Yungichhu Hydropower Plant, Bhutan Hydropower Services Limited, Chumey Mini Hydropower Plant, Kurichhu Hydropower Project and Jigmeling AIS Substation

6. OPERATIONAL PLAN FOR 2024-2025

1) Amendment of Internal House Wiring Regulation 2016

The ERA Secretariat reviewed the Internal House Wiring Regulations 2016 for the identification and clarification of ambiguous provisions and gaps and understanding the roles and responsibilities of relevant agencies involved in the implementation and enforcement of the regulations. The findings and shortcomings in the existing regulations were presented in the 120th Commission Meeting. Considering the deficiencies in the existing Regulations and also the complexity in implementing the regulation, the Commission directed the amendment of the Regulations and formation of a taskforce with members from all relevant agencies.

2) Amendment of Distribution Code 2022

In the last fiscal year, the ERA Secretariat reviewed the Distribution Code (Amendment) Regulation 2022 to ensure clarity, effectiveness, and alignment with the evolving needs and standards in the electricity sector of the country. The review aimed at establishing the terms and conditions of electrical energy supply to consumers, enhancing consumer rights protection, and addressing emerging challenges such as the integration of Distributed Energy Resources (DERs). The findings and shortcomings in the existing regulations were presented in the 121st Commission Meeting. Considering the deficiencies in the existing Regulations, the Commission directed the amendment of the Distribution Code (Amendment) Regulations. This amendment will include the Secretariat and stakeholder consultations for the applicability and implementation.

3) Revision of Accounting and Reporting Regulation 2007

The Accounting and Reporting Regulation 2007 has mandated licensees to submit various information, including audit reports, generation data, energy sales, and customer numbers. However, licensees still rely on manual data maintenance and recording, resulting in uncertainty and mismatches in the information provided to ERA for analysis, thereby impacting decision-making. Moreover, the current regulation's scope is confined to financial aspects, necessitating an expansion to include technical requirements as well. This enhancement is crucial as data serves as the primary tool for assessing licensee performance and keeping ERA informed. Consequently, ERA will review and amend the Accounting and Reporting Regulation to expand the types of data required to include technical performance metrics, outage reports, and equipment maintenance records.

4) Revision of Tariff Determination Regulation 2022

In 2016, the erstwhile Ministry of Economic Affairs (MoEA) issued the DETP 2016 to provide guidelines for domestic tariff determination. This guideline through its rationalized and subsidy mechanism was issued to facilitate the Royal Government to provide affordable electricity through subsidized tariff and improve the quality of life of the people.

Upon issuance of the DETP 2016, the TDR 2007 was amended by incorporating the provisions of the DETP 2016. The TDR 2016 was further amended with incorporation of the provisions of Guideline for determination of Regulatory Asset Base 2021 and provisions of System Operator Charges Regulation 2022. The TDR 2022 was then issued accordingly for determination of tariffs for tariff period 2022-2025.

During the current fiscal year 2024-2025, TDR 2022 will be amended to address the existing issues and challenges faced by ERA and Licensees such as provisions for commissioning of hydropower projects in between the tariff cycle, determination of regulatory asset base, analysis on reconciliation of cost, demand charges, power purchase price and performance of licensees.

Therefore, ERA recognizes the need to review the existing Regulations to address the above issues and help the Licensees to submit the tariff applications on time for the tariff period 2025-2028.

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5) Development of Manual for Reviewing and Drafting of Regulatory Frameworks

The formulation of Rules, Regulations, Standards, Codes, and procedures related to the electricity sector is one of ERA's primary functions. Currently, we have more than 16 frameworks, including guidelines and procedures, formulated and issued to licensees for compliance. These frameworks were initially developed in 2008 and 2009, with some later amendments. However, due to evolving energy dynamics and advancements in digital technology, and for a more efficient business ecosystem, there is a need for robust, flexible, and enabling regulatory frameworks.

The original frameworks from 2008 and 2009 were formulated with the assistance of external experts, and subsequent amendments have also been guided by experts. There is now a critical need for standardized guidelines or manuals for reviewing and formulating subordinate legislation to ensure robustness, flexibility, and effectiveness in regulatory frameworks.

Therefore, the ERA Secretariat will prioritize the development of comprehensive guidelines tailored specifically for the review and formulation of legal instruments. This document will be designed to assist professionals, particularly those without a legal background.

6) Revision of Dispute Resolution Procedure 2009

The Dispute Resolution Procedure was formulated in the year 2009 to establish a process for resolving disputes between Licensees, and between Licensees and Customers regarding the enforcement of regulatory frameworks. This Procedure underwent review as part of the Operational Plan for Fiscal Year 2023-2024 aimed at enhancing the business ecosystem. Following deliberation during the 121st Commission meeting, members of the Authority acknowledged the need to amend the Dispute Resolution Procedures. The focus is on streamlining procedures to enhance effectiveness, clearly categorizing the nature of cases, and establishing platforms for mediation and adjudication. The Commission further directed ERA Secretariat to consult the Bhutan Alternative Dispute Resolution Centre for any arbitration needs. Consequently, the ERA Secretariat will review and amend the Dispute Resolution Procedure of 2009 during Fiscal Year 2024-2025.

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7) Development of Right of Way Regulation

The growing demand for energy and the government's plan to enhance hydropower generation capacity necessitate the construction of transmission and distribution lines. However, significant challenges arise when these lines cross private land, leading to RoW issues.

A RoW designates a strip of land that allows a power utility to construct and maintain power lines on private property. While essential for electricity delivery, this right imposes restrictions on land use, limiting activities such as building or planting tall trees within the RoW corridor for safety reasons. This issue intersects with eminent domain, which allows the government to acquire private land for public use. Although power lines serve a public purpose, acquiring RoW often creates tensions among stakeholders. Achieving consensus among landowners, utilities, and the public through effective stakeholder consultation is crucial.

The lack of clear RoW guidelines creates uncertainty for all parties. A robust legislative framework is necessary to define the rights and obligations associated with RoW acquisition, ensuring fair compensation for affected landowners. Additionally, establishing a dispute resolution process between landowners and utilities is vital for timely resolutions.

A well-defined framework for RoW acquisition can balance energy infrastructure development with the protection of landowners' rights. This approach benefits all stakeholders: landowners receive fair compensation, utilities gain clear procedures, and the public enjoys a reliable power grid delivered through a transparent process.

8) Revision of Service Rules and Regulation 2018

Amendment of Service Rules and Regulation 2018 is one of the operational plans for the fiscal years 2023-2024 and it was submitted to the Authority during the 121st Commission meeting held on 17th May 2024. Based on the submission, the Authority opined that amendment of Service Rules and Regulations needs to be done comprehensively and also need to facilitate the implementation of the approved ERA Strategic Documents. In view of which the Authority decided to declare the amendment of the ERA Service Rules and Regulation as non-operational for the fiscal year 2023-2024 and directed the Secretariat to take it up in the upcoming fiscal year 2024-2025's operational plan with holistic review to ensure meritocracy, equity, uniformity, productivity and foster an environment for the promotion of our Secretariat's Vision, Mission and Core Values.

9) Development of HRD Masterplan 2025-2030

In the absence of the proper Human Resource Development (HRD) Master Plan, capacity-building efforts at the ERA Secretariat have been largely reactive, addressing immediate needs rather than following a structured, long-term strategy. This ad-hoc approach has created significant gaps in strategic human resource planning. Moreover, many former employees who underwent extensive training have resigned, resulting in a substantial loss of institutional knowledge and expertise. Currently, 50% of the workforce comprises newly recruited employees with limited experience, hindering their effectiveness in fulfilling their mandates.

The absence of a comprehensive HRD framework exacerbates these challenges, as there is no systematic path for professional growth and integration. A structured development plan is crucial to build competencies consistently and align capacity-building initiatives with ERA's long-term goals. Such a plan would also enhance talent retention by providing clear career progression pathways and continuous development opportunities.

To address these issues, ERA must prioritize the creation and implementation of a HRD Master Plan focused on robust training programs that meet both immediate and future needs. This plan should include mechanisms for knowledge transfer to mitigate the impact of employee turnover. As part of this effort, during the fiscal year 2024-2025, the ERA Secretariat will conduct a comprehensive Training Needs Assessment to enhance employee skills and knowledge, improve performance, and foster a positive work environment.

10) Review and Update of Reliability Indices Target

In the year 2023-2024, ERA conducted a study on power reliability to determine the preliminary baseline for the reliability indices. The preliminary baseline was determined and accordingly set a target for the year 2024-2025. The BPC is currently installing the DT meters, which can automatically record the power outage events in the system and root out the errors accounted for due to manual recording. The BPC is tentatively planning to complete the installation of DT meters by October 2024. So, to completely set a new standard for reliability indices based on the DT will be possible only in the fiscal year 2025-2026 since it requires historical data of the past one (1) year. In this regard, the ERA will continue to review and update the power outage data from Jan 2024 to March 25 and set new reliability indices target for the year 2025-2026.

11) Study of Low Voltage Consumer's Power Quality

The ERA as the sector regulator has been enshrined with a mandate as per Section 11.2 of the Act to ensure the quality of the electricity supply. Power quality is important in today's digitally driven electricity business and it plays a vital role than ever before. The modern electrical equipment requires high-quality power to function correctly, and the efficiency and productivity of such equipment also depend heavily on the power quality. Poor power quality results in more fault conditions, equipment failure and increases the risk of equipment damage.

Therefore, to ensure the licensee maintains healthy power quality in accordance to the prevailing standards, the ERA shall carry out the study on the power quality available to low voltage consumers and develop a report.

12) Conduct a Feasibility Study on Digitalization of Services

ERA as the sector regulator is mandated to ensure the efficient business operation of the power sector in meeting the national objective to drive the country's economic transformation sustainably. Digitalization is one of the key factors for modernization and prompt service delivery, digitalizing the services in the electricity sector is not an exception. Therefore, ERA plans to conduct a feasibility study on the digitalization of services entailing a thorough analysis of the potential benefits, challenges, and overall viability of transitioning traditional services to digital platforms. Furthermore, this study will assess the technological and operational aspects to determine if digitalization can enhance efficiency, accessibility, and customer and stakeholder satisfaction.

Key considerations include the current technological infrastructure, the adaptability of the workforce, cost implications, advantages, and the security of digital platforms. This process can help ERA make informed decisions about embracing digital technologies to improve service delivery and remain competitive in a rapidly evolving digital landscape. Therefore, during the fiscal year 2024-2025 ERA will conduct a feasibility study on digitalization of services.

13) Review of the proposed Investment Plans of DGPC, MHPA, THyE and BPC

During the fiscal year 2024-2025, the DGPC, MHP, BPC and Tangsibji Hydro Energy Limited (THyE) will be submitting their Investment Plan for the tariff period 2025-2028 by October 2024, which is 9 months before the expiry of the current tariff period as per the Section 13 of the TDR 2022 and in line with the Guidelines for Filing Tariff Applications 2022.

The Generating companies of DGPC will be submitting the investment proposals pertaining to installation and up-gradation of power house facilities, installation and replacement of equipment in the dam complex and maintenance and construction of civil structures like buildings, walls and fencing, etc. The investment proposals from DGPC will also include the proposed investments for their Corporate Office, 336 MW Chukha Hydropower Plant, 60 MW Kurichhu Hydropower Plant, 64 MW Basochhu Hydropower Plant and 1020 MW Tala Hydropower Plant for the tariff period 2025-2028. MHPA and THyE will also submit their investment proposal to ERA for the tariff period 2025-2028.

The BPC will be submitting the investment proposals categorized as Plan Works and Outside Plan Works. The Plan Works are those works that shall be funded by BPC or through loan/special financing arrangement from RGoB. The Plan Works are in line with the Corporate Strategic Plan (CSP) of BPC and categorized as Transmission, Distribution and Others/Corporate Office. Whereas the Outside Plan Works are those Associated Transmission System (ATS) to be taken up by BPC on behalf of other agencies for the construction of hydro power projects, if any (e.g., PHPA II, small Hydropower plants etc).

The investment proposals for plan works are aimed for strengthening the network, improving reliability through network expansion, improvement and up-gradation of existing transmission and distribution system to cater and replacement of old and obsolete assets.

Upon receipt of the Investment Proposal, ERA will first review their investment proposals through desktop study. Second, the ERA will conduct stakeholder consultations with the Licensees and relevant agencies to discuss and clarify the doubts of the investment proposals, to list out the priority of the project, risk associated with each project for the proposed investment and to seek their comments if any. Third, the ERA will carry out a site verification to generation, transmission and distribution sites for the investments which are not clear to ERA.

14) Approval of DGPC tariff for the tariff period 2025-2028

The prevailing DGPC generation tariff will expire on 30th June 2025 and DGPC will be submitting their tariff revision proposal to the ERA by March 2025, four months before the current tariff cycle ends. The tariff revision proposals will be reviewed as per the amended TDR 2022.

The investment proposals submitted along with tariff proposals will be reviewed and verified for final approval to ensure consistency with the investment proposals submitted in October 2024. ERA will review investment proposals submitted along with tariff proposals if there is only necessary additional information and update according to the already reviewed investment. Along with the investments, ERA will review WACC parameters (cost of equity, cost of debt and gearing ratio), inflation rate, interest on working capital, O&M expenses, allowances for Auxiliary Consumption, energy generated and inventories.

During the review of tariff application, ERA will conduct stakeholder consultations with DGPC to discuss and clarify the doubts of the parameters proposed in tariff proposals and conduct public consultation with Licensees, relevant agencies and consumers. Finally, submit the review findings to the Authority for determining the DGPC generation cost of supply for the tariff period 2025-2028.

15) Approval of MHP and THyE tariff for the tariff period 2025-2028

The prevailing MHP and THyE generation tariff will expire on 30th June 2025. MHP and THyE will be submitting their tariff revision proposals to the ERA by March 2025, four months before the current tariff period expires. The tariff revision proposals will be reviewed as per the amended TDR 2022.

The investment proposals submitted along with tariff proposals will be reviewed and verified for final approval to ensure consistency with the investment proposals submitted in October 2024. ERA will further review investment proposals submitted along with tariff proposals if there is only necessary additional information and update according to the already reviewed investment. Along with the asset base and investments, ERA will review O&M expenses, inventories, energy generated, and energy required for domestic consumption.

During the review of tariff application, ERA will conduct stakeholder consultations with MHP and THyE to discuss and clarify the doubts of the parameters proposed in tariff proposal and conduct public consultation with Licensees, relevant agencies and consumers. Finally submit the review findings to the Authority for the determination of the MHP and THyE generation cost of supply for the tariff period 2025-2028.

16) Approval of BPC tariff for the tariff period 2025-2028

The prevailing BPC tariff for the High Voltage (HV), Medium Voltage (MV) and Low Voltage (LV) Customers and Wheeling will expire on 30th June 2025 and BPC will be submitting their tariff revision proposal to ERA by March 2022. The tariff revision proposals will be reviewed as per the amended TDR 2022.

The investment proposals submitted along with tariff proposals will be reviewed and verified for final approval to ensure consistency with the investment proposals submitted in October 2024. ERA will further review investment proposals submitted along with tariff proposals if there is only necessary additional information and update according to the already reviewed investment. Along with the assets base and investments, ERA will review capital work in progress, O&M expenses, inventories, non-tariff revenue, energy purchase, import and sales, energy generated from embedded generation, and energy required for the consumers.

During the review of tariff application, ERA will conduct stakeholder consultations with BPC to discuss and clarify the doubts of the parameters proposed in tariff proposal and conduct public consultation with Licensees, relevant agencies and consumers. The review findings will be submitted to the Authority for the determination of the BPC cost of supply for the tariff period 2022-2025. Upon approval of the BPC cost of supply by the Authority, ERA will submit the note sheet to the RGoB for the subsidy allocation.

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17) Approval of Punatsangchu-II Hydroelectric Project Authority tariff

Punatsangchu-II Hydroelectric Project Authority (PHPA II) is expected to commission 2 generating units by the end of 2024 and is expected to submit their tariff proposals to the ERA by August or September 2024 before the commissioning of the project. ERA will review the proposed assets, investments, O&M expenses, inventories, energy generated, and energy required for domestic consumption in line with TDR.

During the review of tariff application, ERA will conduct stakeholder consultations with PHPA II to discuss and clarify the doubts of the parameters proposed in tariff proposal and conduct public consultation with Licensees, relevant agencies and consumers. The review findings will be submitted to the Authority for the determination of the PHPA II generation cost of supply for the tariff period 2025-2028.

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18) Approval of 54 MW Burganchu ,18MW Suchu and 32 MW Yungichu tariff

The construction license for 54 MW Burgangchhu Hydropower Project, license No. BEA/LICENCE/0026 is issued with effect from 19th September 2022 along with license conditions to be compiled by the Druk Hydro Energy Limited (DHyE) while undertaking the construction of the hydropower plant. The License is valid for a duration of two years and three months from the date of issuance of the license or till the commercial operation date, whichever occurs earlier. Similarly, Construction License for the 32 MW Yungichhu Hydropower Project was issued on Authority on August 18, 2022, which remains valid until March 18, 2025, and for 18MW Suchu, it was issued on 19th September 2022 and is valid till 18th July 2024.

The above-mentioned Projects are all expected to be commission during the fiscal year 2024-2025, therefore, the ERA is expecting tariff application from the 3 projects before the project commissioning. Once the tariff application is received, ERA shall review the proposed asset, investments, O&M expenses, inventories, energy generated, and energy required for domestic consumption in line with TDR.

During the review of tariff application, ERA will conduct stakeholder consultations with DHyE to discuss and clarify the doubts of the parameters proposed in tariff proposal and conduct public consultation with Licensees, relevant agencies and consumers. The review findings will be submitted to the Authority for the determination of the generation cost of supply for these three projects for the tariff period 2025-2028.

Construction sites of Small Hydro Plants

7. FINANCIAL STATEMENT

The ERA funds its daily operations through the license application fees, annual license fees, and tariff application fees as per the Electricity Act of Bhutan 2001. For the fiscal year 2023-2024, the Honorable Minister, MoENR approved an Annual Budget of Nu. 49.45 million, based on the Authority's recommendations. Shown below are the summary of the revenues generated and the corresponding expenditures incurred during the fiscal year:

1) Revenue (in Million)

Licensees	Particulars	2023-2024
DGPC	Annual License fee	14.800
DHPC	Annual License fee	1.260
Sephu	License processing fee	0.050
BPC	Annual License fee	36.290
DGPC	Transfer of license from BPC to DGPC.	0.100
THyE	Construction and operation license fee	0.100
THyE	Tariff Application fee	0.295
THyE	Annual License fee	1.180
MHPA	Annual License fee	7.200
	Total	**61.275**

2) Annual Expenditure

Particulars	2023-2024
Pay and Allowance	24.367
Travel Incountry	1.013
Travel Outcountry	2.503
Utilities-Telephone, Fax, Internet, Telex	0.309
Utilities-Electricity, Water & Sewerage	0.004
Rental- Building	0.049
S&M-Office Supplies, Printing & Publication	1.117
S&M-Others (Newspaper & Magazines)	0.376
Maintenance of Properties-Vehicle	0.020
Maintenance of Properties-Equipment	0.006
Maintenance of Properties-Computer	0.227
Operating Expenses-Advertising	0.201
Operating Expenses-Taxes, Bank Charges etc	0.002
Operating Expenses-Incountry Meetings	1.996
Hospitality & Entertainment	0.061
Subscription to International Organization	0.786
Contribution: PF	1.496
Retirement Benefits	0.689
Current Expenditure	35.866
Training-HRD	2.251
Office Equipment	0.157
Computers & Peripherals	0.074
Professional Services	0.134
Capital Expenditure	2.666
Grand Total	**38.531**

8. Event Gallery

Signing ceremony of ISA work plan

ERA Strategic Plan Workshop

Launching ceremony of ERA Strategic Plan

Sensitization on regulatory frameworks to the licensees

9. GLOSSARY

ACT	Electricity Act of Bhutan 2001
ERA	Electricity Regulatory Authority
MoENR	Ministry of Energy and Natural Resources
BPC	Bhutan Power Corporation
DGPC	Druk Green Power Corporation Limited
MHPA	Mangdechhu Hydro Power Authority
BPSO	Bhutan Power System Operator
DHI	Druk Holding and Investment Limited
PHPA-I	Punatshangchu Hydro Power Project Authority-I
PHPA-II	Punatshangchu Hydro Power Project Authority-II
RGoB	Royal Government of Bhutan
DSP SI	De-suung Skilling Program Solar Initiative
MW	MegaWatt
kWp	kilowatt peak
CFM	Centenary Farmers Market
ESD	Electricity Services Division
TDR	Tariff Determination Regulation

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