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இலங்கைப் பொதுப் பயன்பாடுகள் ஆணைக்குழு  
PUBLIC UTILITIES COMMISSION OF SRI LANKA



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Our No. }

PUC/E/Tariff/01

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திகதி }  
Date }

November 13, 2024

Eng. K. G. R. F. Comester,  
General Manager,  
Ceylon Electricity Board,  
No. 50, Sir Chittampalam A. Gardinar Mw.,  
Colombo – 02.

**Inconsistency in hydro inflow forecasting of SDDP results of adjacent months**

Reference is made to;

1. SDDP results sent in September, October and November – 2024,
2. Commission letter dated November 2, 2023 (attached),
3. CEB letter dated November 17, 2023, replying to above Number 2 (attached),

It is observed that CEB's aforementioned SDDP results show a considerable inconsistency with respect to hydro inflow forecasting for months October, November and December - 2024. Further, rainfall forecasts of Department of Meteorology does not justify the said variations of hydro inflows.

Summary of the variations observed in hydro inflow forecast is shown below for your reference;

| Forecast for Month; | Sent in September, 2024                              |  | Sent in October, 2024              |                             |   | Sent in November, 2024                              |   |
|---------------------|--|--|------------------------------------|-----------------------------|---|---|---|
|                     | Met. Department Rainfall Forecast* sent in September | CEB SDDP Inflow Forecast (GWh) sent in September | Met. Department Rainfall Forecast* | CEB Inflow Forecast (GWh)   |   | Met. Department Rainfall Forecast* sent in November | CEB SDDP Inflow Forecast (GWh) sent in November |
|                     |  |  |                                    | As per SDDP sent in October | Filed for Tariff Revision on Oct 24, 2024 |   |   |
| October             | Near Normal  | 370.40   | Near Normal                        | 514.40                      | 449.28                                    |   |   |
| November            | No Signal  | 472.00   | Near Normal                        | 511.20                      | 511.12                                    | Near Normal   | 486.70  |
| December            |  | 307.40   | Near Normal                        | 332.80                      | 333.13                                    | Near Normal   | 386.90  |

\*Note: Met. Department forecast mentioned above is for hydro catchment areas

In view of alleviating any inconsistency of hydro inflow forecasts, the Commission intends to review the hydro forecasting procedure adopted by System Control Centre for monthly dispatch planning process.

Therefore, you are hereby required to submit a written down procedure used for hydro inflow forecasting for monthly dispatch planning process, on or before November 22, 2024.

In addition, if the forecasting is done through SDDP software, the following information shall also be submitted;

1. Data fed into SDDP software (all the data labels and number of entries)
2. Format of output obtained through the software (explained using an example)
3. Detailed mechanism of manual interventions done to adjust the output (to accommodate the forecasts of Department of Meteorology or any other requirement)

Kanchana Siriwardena  
Deputy Director General (Industry Services)

Sgd./Damitha Kumarasinghe  
Director General



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Date }

Nov 02, 2023

Dr. N. De Silva  
Actg. General Manager  
Ceylon Electricity Board

**Clarifications on Hydro Inflow Forecasting Methodology**

Reference is made to Section 59 of Sri Lanka Electricity Act No. 20 of 2009.

The Commission identifies hydro inflow forecast as a critical variable in optimally utilizing the hydro power generation and planning the overall generation dispatch. Therefore, clarifications are required on the inputs and the methodology that is used to forecast the hydro inflow in the monthly dispatch planning.

The clarifications on the same shall be submitted to the Commission by November 7, 2023.

Damitha Kumarasinghe  
Director General

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28, ශාන්ත මයිකල් පාර, කොළඹ 03.

06 ඉහල මහල, இலங்கை வங்கி வர்த்தகக் கோபுரம்,  
28, சென் மைக்கல் வீதி, கொழும்பு 03.

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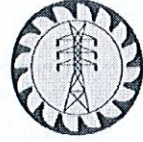
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பணிப்பாளர் நாயகம்  
Director General

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2023/11/22  
2.00p.m

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இலங்கை மின்சார சபை  
CEYLON ELECTRICITY BOARD



Your ref:

My ref: DGM/SYC/GNI/PUCSL

Date: November 17, 2023

Director General  
Public Utilities Commission of Sri Lanka  
6<sup>th</sup> Floor, BOC Merchant Tower  
No.28, St, Michael's Road  
Colombo 3.

**Responses on clarifications request on "Hydro Inflow Forecasting Methodology",  
"October 2023 Generation Dispatch" and "Operating Lakvijaya Coal Plant at Partial  
Capacity During Night Peak Time Period"**

This has reference to following letters from PUCSL,

1. PUCSL letter No. PUC/E/Tariff/01 dated 02<sup>nd</sup> November 2023 addressed to Actg. General Manager, CEB on "Clarification on Hydro Inflow Forecasting Methodology"
2. PUCSL letter No PUC/E/Tariff/01 dated 02<sup>nd</sup> November 2023 addressed to Actg. General Manager, CEB on "Clarification on October 2023 Generation Dispatch"
3. PUCSL letter No PUC/LIC/2023/CEB/10 dated 10<sup>th</sup> November 2023 addressed to General Manager, CEB on "Operating Lakvijaya Coal Plant at Partial Capacity During Night Peak Time Period"

CEB responses for the clarification requested by above three letters are as follows.

**Clarifications on Hydro Inflow Forecasting Methodology**

At present, inflow forecasting is carried out using the Stochastic Dual Dynamic Programming (SDDP) dispatch planning software, where monthly inflows to individual reservoirs and ponds for the past 43 years since 1979 have been incorporated as input data into the SDDP model. Thus, based on these historical inflow data, model itself generate inflow forecast scenarios using a Stochastic inflow model.

**Clarification on October 2023 Generation Dispatch**

Under the referred letter, it has been requested to provide clarification regarding the comparative reduction of overall daily generation cost following the first 10 days in October 2023. Accordingly, our response is as follows:

It is to be noted that initial total hydro storage on 01<sup>st</sup> October was 517.8 GWh which was around 43% of the total storage. Thus, with prevailed low reservoir storage, it was planned to build up the hydro storage at least up to 800 GWh by end of year 2023. Accordingly hydro generation has been dispatched with restrictions during the first 10 days of the October where daily average inflow of 22 GWh was experienced.

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However, there was a drastically improvement in inflows to hydro catchment areas from 11<sup>th</sup> October onwards, where daily average of around 32 GWh of inflow was experienced. Accordingly, with an improved inflow pattern, hydro generation has been increased while restricting thermal generation from 11<sup>th</sup> October onwards, resulting further reduction in overall generation cost.

**Operating Lakvijaya Coal Plant at Partial Capacity During Night Peak Time Period**

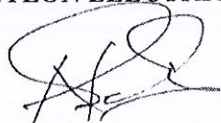
Under the referred letter, it has been requested to provide reason for partial operation of LVPS unit 02 during night peak on 07<sup>th</sup>, 08<sup>th</sup> & 09<sup>th</sup> November 2023 while dispatching some thermal plants during the same period.

It is to be noted that, Lakvijaya plant has been specifically requested to avoid frequent de-loading and loading of unit 02 to avoid pressure variation inside the HP heater tubes and to reduce the fatigue stresses to prevent failures in HP heater No 03. Accordingly, System Control were compelled to dispatch oil-fired thermal plants exclusively for Night peak operation while adhering to the constraint associated with Lakvijaya Unit 02.

Above information is forwarded herewith in fulfilling the Conditions 3(1) and 30(9) of Electricity Transmission and Bulk Supply License No. EL/T/09-002.

Yours faithfully,

**CEYLON ELECTRICITY BOARD**



Eng. (Dr.) Narendra De Silva  
**Actg. General Manager**  
**Ceylon Electricity Board**

Eng. (Dr.) Narendra De Silva  
Actg. General Manager  
Ceylon Electricity Board  
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