BEFORE THE

VIRGIN ISLANDS PUBLIC SERVICES COMMISSION

DOCKET NO. 289

PETITION OF VIRGIN ISLANDS WATER AND POWER AUTHORITY

FOR CHANGE TO LEVELIZED ENERGY ADJUSTMENT CLAUSE (LEAC)

REPORT OF

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WAPA LEAC PETITION OCTOBER THROUGH DECEMBER 2023

SEPTEMBER 14, 2023

PETITION OF VIRGIN ISLANDS WATER AND POWER AUTHORITY

FOR CHANGE TO LEVELIZED ENERGY ADJUSTMENT CLAUSE (LEAC)

Overview

In compliance with the Public Service Commission's ("PSC's") stipulation that the Authority file a proposed LEAC rate by July 29, 2023, for the upcoming period, the Virgin Islands Water and Power Authority ("the Authority" or "WAPA") submitted its preliminary petition for the Electric Levelized Energy Adjustment Clause (ELEAC) rate in the fourth quarter 2023 (October through December 2023) on July 28, 2023.

WAPA indicates that while the supporting schedules in its filing indicate a rate of $0.2390 per kWh, this filing does not propose or request any rate action at this time. The current LEAC rate is $0.2222 per kWh.

Major WAPA Assumptions

Cost of fuel and Generation Mix

As in any ELEAC filing, the cost of fuel and the efficiency of the generation used are the most important inputs which determine the ELEAC rate. WAPA's filing does not assume any changes to the generation units available for dispatch in October-December 2023 compared to today.[1] This filing does not assume the new Wartsila generation units are online on St Thomas during the projected ELEAC period and WAPA states that their in-service date remains uncertain. Based on these and related assumptions in WAPA's filing:

- The fuel mix for the projected operations for October through December 2023 is 25.6% No. 2 Oil and 74.4% LPG for St Thomas.
- The average heat rate for the plant for the three months is 15,211 BTU/kWh which is a significant deterioration over the same three months in 2021 of 12,095 BTU/kWh for St Thomas.[2]
- The price of No. 2 Oil in this filing is projected to increase to $3.14/ gallon from $2.44/ gallon for the same three months in 2021.
  The cost of LPG in this filing is projected to decrease to $1.05/gallon from $1.10/ gallon for the same three months in 2021.
- All of WAPA's LPG is sourced from Vitol a supplier with whom WAPA has had significant disputes and is currently in a final buyout deal that is to be consummated no later than December 2023. The cost of LPG to WAPA is based on an index plus a "transportation charge."[3] The assumed transportation rate for LPG in this filing is $0.33/gallon which is the PSC approved rate. However, the Authority is currently paying

[1] While the four new Wartsila units are on Island and available they have been currently undergoing initial testing using oil but have not been declared available for commercial operation. WAPA estimates that LPG could be available to fuel the new units in November 2023.

[2] Provided on WAPA Spreadsheet for this LEAC filing (4Q23 WAPA Electric LEAC Model, Worksheet 2).

[3] The transportation charge represents several items in addition to the transportation including but not limited to profit for the supplier.

$0.68/gal for spot deliveries from Vitol. The contractually mandated rate with Vitol is $0.38/gal, 5 cents higher than the PSC-approved $0.33/gal.

- WAPA's computation for the ELEAC rate is:
    - $0.2390/kWh based on a transportation rate of $0.33/ gallon, which is the rate last approved by the PSC.
    - $0.2458/kWh based on a transportation rate of $0.38/ gallon, which was the contractual rate with Vitol.
    - $0.2868/kWh based on a transportation rate of $0.68/ gallon; the rate that Vitol currently requires prior to fuel being delivered.
- The four new Wartsila units have been on island for nearly two years, having been delivered in November 2021. In the most recent briefing by WAPA Exec Director Smith the PSC Staff were informed that all four units have been test fired using oil in August 2023.

New Simulation Model (PLEXOS) Contracted For by WAPA

The Authority previously paid for and acquired industry standard software and used a third-party consultant to manage its acquired PLEXOS model; however, current management indicates that they believe that the inputs WAPA provides to feed into the existing model are generally not accurate. After the PSC instructed the Authority in June to file an Electric LEAC by July 29, the Authority promptly engaged Sargent & Lundy to begin building a new PLEXOS model from scratch to ensure that the inputs as well as the inner wiring of the model are as accurate as possible. The implementation of the new PLEXOS is also costly with an initial development cost of $240,000. No specific date has been provided for the completion of the new model and its potential use in ELEAC proceedings. However, once completed, the Authority indicates that it will submit an amended LEAC filing with a dispatch forecast based on the new PLEXOS output.

Staff Analysis and Observations

The issues raised by this current WAPA filing requiring Commission attention are discussed below:

1. The frequency of filing for the ELEAC. There has been no formal request by WAPA on the frequency of ELEAC filings nor has there been a decision from the Commission. WAPA has indicated to Staff in its conferences that it will request quarterly ELEAC filings given the volatility of fuel prices and WAPA's lack of liquid financial resources to deal with price spikes. The current filing has been made for the three-month period October through December 2023. There is also a current statutory requirement that WAPA provide information quarterly to the PSC regarding the ELEAC.[4] This latter requirement to file data quarterly does not require the Commission to change the ELEAC quarterly. While fuel prices have been volatile recently Staff recommends that the Commission review the ELEAC semi-annually to change the rate. We recommend that the ELEAC rates be reviewed and changed on April 1 and October 1 of each year. Since filings will be required

[4] In the recent proceeding for the Water Department WLEAC the Commission required WAPA to come current with all quarterly WLEAC finings as required by statute.

to be made quarterly WAPA can review the quarterly data and if required ask the Commission to act in a particular quarter if there is a serious under or over recovery.

2. The requirement to file quarterly data with the Commission can only change if approved by the Legislature. The statutory filing requirement does not require Commission action each quarter.

3. The ability to conclude the agreement to pay Vitol the required buyout amount. There has recently been an extension granted by Vitol to WAPA to make the final payoff amount. The extension runs through December 31, 2023. After the payoff it is Staff's understanding that all Vitol assets and operations will be owned by WAPA.[5] In the absence of the payoff it is not clear what the status and outlook for WAPA would be. The balance that is required to be paid to Vitol is $100 million and WAPA indicates that the process to obtain federal funds is well under way and will be executed successfully.

4. Implementation of a new PLEXOS model. The lack of a fully new and developed model should be no reason for deferring the appropriate analysis and implementation of an appropriate ELEAC. Additionally, there should be no connection between the successful payoff to Vitol and including the four new Wartsilas in the determination of the appropriate ELEAC using the new PLEXOS.

5. Deferring the inclusion of the four new Wartsilas in the computation of the ELEAC. The new units have been on Island for over 2 years by the end of this forecast Quarter. WAPA has indicated that all units have been successfully test fired in August 2023. While there is always some level of uncertainty as to whether the new units will reliably be in service in October 2023, Staff does not believe that it is appropriate to exclude the new units from the analysis and determination of an appropriate ELEAC starting on October 1, 2023. Staff has used the information provided by WAPA for the period October through December 2023 and has provided an estimate as to what the ELEAC would be with the four new units in operation for the benefit of the Commission. WAPA did indicate that there would be uncertainty as to whether the pipeline to fire the units with LPG would be complete for service during the entire projected period.[6] We have therefore for evaluation purposes assumed that the new units would burn No 2 oil. The cost of using oil is significantly greater than the use of propane.

The major assumptions for the results presented below in computing the alternative ELEACs are as follows:

- Staff has used the most recent futures prices for oil and LPG as of September 8, 2023, as has been the practice in ELEAC proceedings. While there is a minimal

[5] The Settlement Agreement between VITOL and the Water and Power Authority has not been disclosed.

[6] In conference WAPA indicates that the current estimate is that propane would be available for testing in the new units mid-November 2023.

difference between the futures prices used for LPG currently and as filed, there is a significant difference in prices for No. 2 fuel oil. The table below shows the comparison of the oil prices used in WAPA's petition with the values used in Staff's report.

WAPA Average Oil price/gal	**Average September 8th Oil price/gal**
$ 2.65	$ 3.27

- Staff understands that the first three Wartsila units are due for substantial maintenance, resulting in a shutdown of each unit for approximately three weeks and that some of this will occur during the projected period. Consequently, Staff has used the same generation from the existing Wartsila units as WAPA used in making the current filing. Staff has also assumed full commercial operation of the four new Wartsilas beginning October 1, 2023. These adjustments eliminate the need for operation of certain of the less efficient generating units and replaces that output with generation from the new Wartsilas.

The generation used by WAPA in the current filing is as follows:

WAPA St. Thomas Generation Mix
October through December 2023

Generation Type	Fuel Type	Heat Rate	BTU	Kwhrs Produced	% of Total
Unit 15	Oil	22,302	28,438	1,275	1.41%
Unit 23	Oil	27,376	173,874	6,351	7.02%
Unit 27	Oil	12,545	319,900	25,500	28.17%
Unit 15	LPG	22,302	540,318	24,227	26.76%
Wartsilas	LPG	9,450	313,495	33,174	36.65%
Total	--	15,200	1,376,025	90,527	100.00%

For the Staff analysis to present the impact of adding the new four Wartsilas to the generation, we used the same generation as WAPA for the four existing units and then added generation from the four new Wartsilas which would displace generation from WAPA's older existing generation. With all the Wartsila fleet running only minimal additional generation would be required from Unit 15 which burns LPG. We point out that this is not a detailed projection made in this proceeding given the time constraints but an estimate to display the potential results to the commission. The resulting dispatch for St Thomas is as follows with the full fleet of Wartsilas in operation:

Staff St. Thomas Generation Mix October through December 2023					
Generation Type	Fuel Type	Heat Rate	BTU	Kwhrs Produced	% of Total
Unit 15	Oil	22,302	11,782	1,339	1.48%
Unit 15	LPG	22,302	262,763	11,782	13.01%
Wartsilas	LPG	9,450	313,495	33,174	36.65%
Wartsilas	Oil	9,450	417,995	44,232	48.86%
Total	--	11,113	1,006,035	90,527	100.00%

The resulting heat rates for St Thomas with the full fleet of Wartsilas running for the projected period are lower than those used by WAPA in its petition due to the increased efficiency of the four new Wartsila units..

WAPA Average Heat Rate	Staff Average Heat Rate
15,200 BTU/kwhr	11,113 BTU/kwhr

- One remaining factor that should be considered is the delivery charge amount from VITOL for LPG. This charge provides for delivery, demurrage, taxes and other items. The rate currently allowed by the Commission and used by WAPA is 33 cents per gallon. VITOL has previously increased that charge to 38 cents per gallon. In addition, VITOL is now requesting that this charge be increased to 68 cents per gallon. The effect of the new Wartsilas being in operation using fuel oil and the impact of the varying delivery charges is shown in the table below.

Vitol Delivery Charge per Gallon	Staff 10/23-12/23 ELEAC	WAPA Petition Calculation
$0.33	23.38 cents/kwhr	23.90 cents/kwhr
$0.38	23.99 cents/kwhr	N/A
$0.68	27.64 cents/kwhr	N/A

STAFF RECOMMENDATIONS

1. This WAPA ELEAC filing was made with the clear intention that the rate be set for a Quarter, rather than a semi-annual period. Unless the Commission chooses to include the new Wartsilas in the calculation of the ELEAC, the rate approved by the Commission should be set for the forthcoming Quarter and a new filing for the January 1-March 31 period be made no later than October 15, 2023.
2. The ELEAC should be set by the Commission semi-annually on April 1 and October 1 of each year. To establish an April/October semi-annual review, the first Quarter of 2024 should also be set as a quarterly rate. However, we note that WAPA management has indicated a preference for a continued quarterly rate setting. Staff has indicated that

quarterly informational filings are required by statute. Consistent with semi-annual proceedings WAPA can petition if the results of a quarterly review indicates a significant level of under recovery. WAPA has indicated in conferences that with the new PLEXOS software available the determination of a new ELEAC to reflect changes in fuel prices should be an efficient undertaking. Staff agrees with that observation with regard to changes in fuel prices. However, Staff believes that in the past changes in the availability of generating units have a significant impact on the ELEAC because of changes in the efficiencies of the available plants and a change in the ELEAC is not just based on changes in fuel prices.

3. The ELEAC filing by WAPA should be made 75 days prior to the implementation date and include the petition with narrative; executable spreadsheets with the computation and development of the ELEAC; and supporting documentation. The existing Minimum filing Requirements ("MFRs") should be evaluated to determine if and how they should be modified to accompany the ELEAC filings.
4. WAPA has indicated that the final payoff to Vitol of $100 million will be executed on time. The Commission should accept this statement for this proceeding at this time. The proposed supply and pricing of LPG for the future should be provided and briefed to the Commission and Staff well before the next ELEAC is filed.
5. The impact of operating the four new Wartsila generating units should be provided to the Commission. Staff analysis shows that at the Commission approved transport cost of $0.33/gallon for LPG the ELEAC would not be below the current ELEAC of $0.2222/kWh. This is with the four new Wartsila units running on oil. When they are dispatched using propane the cost will be significantly less. However, in reality WAPA is paying $0.68/gallon for LPG transport and at that rate the projected ELEAC is higher above the current $0.2222/kWh.
6. Given all the uncertainties Staff would recommend that no change in the current ELEAC be implemented. Staff recommends that the Commission require that WAPA and Commission Staff collaborate on the open aspects that will need to be implemented for the January 1, 2024 ELEAC including but not limited to:
    a. Implementation of the modified PLEXOS for the ELEAC.
    b. Agreement, if possible, for the MFRs to accompany the ELEAC filing.
    c. Appropriate parameters to be used in conjunction with the four new Wartsila units.
    d. Pricing for oil and LPG.
    e. Plans for generation expansion for each Island.