TESTIMONY OF KARL KNIGHT

EXECUTIVE DIRECTOR OF THE

VIRGIN ISLANDS WATER AND POWER AUTHORITY

TO THE

36th LEGISLATURE OF THE U.S. VIRGIN ISLANDS

October 29, 2025

Good day, Honorable Milton E. Potter, President of the 36th Legislature of the United States Virgin Islands, other Honorable Senators present, and the listening and viewing audience. I am Karl Knight, Executive Director and Chief Executive Officer of the Virgin Islands Water and Power Authority (hereinafter "WAPA" or "the Authority"). Joining me today are members of the Authority's management team: Chief Operating Officer of the Electric System Lemuel Lavinier, Director of Plant Production Kevin Smalls, Superintendent of the Randolph Harley Power Plant Facility Kevin Harrigan, and Chief Financial Officer Lorraine Kelly. We are here at your invitation to provide an understanding of the underlying issues behind the outages recently experienced in the St. Thomas/St. John district, discuss the short- and long-term plans to avoid those situations in the future, and to provide guidance on what the 36th Legislature can do to assist.

I want to start with a heartfelt apology to our customers. As I have said before, every single one of WAPA's employees reside in this community, I have no remote workers. *Who feels it, knows it*. We are all keenly and personally aware of the disruption and inconvenience that interruptions in our service cause to the residents, businesses, schools and government entities on these islands.

We strive hard every day to provide the level of service and reliability that we all desire. On those days when we fall short, we take no pride in the knowledge that we have let our community down. We take every outage seriously, no matter how big or small, and understand how the cumulative impact affects our quality of life. We are cognizant of the frustration expressed by the residents of our community and appreciate that the desire to respond to the frustrations of your constituents has led us here today. We recognize the necessity of this exercise of accountability to the public that we serve. So let us begin.

During my short tenure, the Authority has been making what I consider steady progress. For every step backwards, we were able to take two or three steps forward. This past September stalled our forward momentum and threatened to derail that progress. The Authority was reminded once again that matters left unresolved for too long will eventually return to haunt us. In this case, it is deferred maintenance on our plant equipment.

Generators

The Randolph Harley power plant (Harley Plant) facility provides power generation for St. Thomas, St. John, and Water Island with the following ten generating units, all owned by the Water and Power Authority:

Generating Unit	Year in Service	Fuel	Nameplate Capacity (MW)	Available Capacity (MW)	Current Status
Unit 23	2004	LFO	40MW	unavailable	Out of Service as of 3/29/25 pending repairs.
Unit 27	2012	LFO	26MW	18MW	Derated pending NOx pump repairs
Unit 15	1980	LFO/LPG	20MW	18MW	Currently dispatched on LFO
Wärtsilä 1	2019	LPG	7	6	Available for dispatch
Wärtsilä 2	2019	LPG	7	6	Available for dispatch
Wärtsilä 3	2019	LPG	7	6	Available for dispatch
Wärtsilä 4	2024	LFO/LPG	9	9	Currently dispatched on LFO, pump repairs
Wärtsilä 5	2024	LFO/LPG	9	9	Currently dispatched on LFO, undergoing LPG testing
Wärtsilä 6	2024	LFO/LPG	9	9	Currently dispatched on LFO, undergoing LPG testing
Wärtsilä 7	2024	LFO/LPG	9	9	Currently dispatched on Diesel, undergoing LPG testing
Total:			**134MW**	**90MW**	

The plant utilizes Liquefied Petroleum Gas (LPG), also simply referred to as propane, and a Light Fuel Oil (LFO), Ultra Low Sulfur Diesel (ULSD), often commonly referred to as “diesel”, as the fuel for the generators. These generating units are supported by an additional 4 megawatts of solar power through a power purchase agreement with InterEnergy Holdings at Estate Donoe.

Chronological Series of Incidents

Sept. 3-4, 2025

On Wednesday, September 3, Saintnals, which operates the propane terminals on behalf of the Authority, reported a gas detection alarm. This alarm triggered an automatic emergency shut down of the propane terminal. Harley Plant immediately lost the benefit of the units that were operating on LPG at the time. Unit 15 tripped when it attempted to switch to diesel operation. Although Wartsila units 4, 5, and 6 initially remained online, operating on diesel, they eventually tripped due to the loss of the LPG-fueled vaporizer. This triggered a district-wide outage. As units were restored, Unit 15 remained offline due to a "clanging" noise emanating from its turbine section during coast down that could have indicated signs of a major mechanical failure. The unit was left offline in an abundance of caution until a borescope inspection of its internal mechanical components could be conducted the next day. No mechanical damage was found, and the unit was returned to service on Thursday evening. No gas leaks were ultimately found and Saintnals' investigation into the incident revealed that the gas detector's beam was apparently obstructed in a manner that simulated a gas leak. Units 23, 27, and Wärtsilä 7 were unavailable during this event. Wärtsilä 7 was in the process of being prepared for LPG operation.

Sept. 8, 2025

On the morning of Monday, September 8, as we attempted to shake off the issues of the prior week, we had a trip of the Wärtsilä units 1, 2, and 3 that were online at the time. Unit 15 remained online, all other units were offline or unavailable. This trip resulted from inadvertent purge valve operation at the start of LPG testing of W7. Unfortunately, W1, W2 and W3 fuel lines got contaminated with diesel during that event, requiring emergency maintenance to restore their operation. This led to a capacity shortfall resulting in rotating power outages from 8:57 a.m. until 5:50 p.m. when all customers were restored. Restoration efforts were delayed by the purge valve operation which triggered the LPG fuel leak alarm that necessitated the evacuation of plant personnel that morning as per our safety protocol.

Sept. 11, 2025

On Thursday, September 11, the plant experienced capacity shortfalls to start the day. Units 23, 27, Wärtsilä 1, 4, and 7 were unavailable for dispatch. W1 was still undergoing repairs from the event of Sept. 8, and W4 and W7 were unavailable due to pump repairs for LPG operation. The challenges were made worse when the Battery Energy Storage System developed a fault and Wärtsilä 3 also tripped due to a bad gas detector sensor during the course of the day. There were rotating outages throughout the day until sufficient capacity was brought online that night.

Sept. 17, 2025

On Wednesday, September 17, the Harley Plant experienced a generation shortfall yet again. A defective starting air valve on W6 caused the Wärtsilä Phase II engines to trip offline. This was a maintenance matter unrelated to the ongoing warranty repairs. At that time, we were left with just Unit 15, and W1, W2, and W3 online with approximately 36 megawatts in generating capacity. The plant productions team was able to start Unit 27, just back from repairs, for the first time in months

but only at the derated capacity of 11 megawatts due to a malfunction of the NOx pump. However, that was good enough to prevent further rotating outages.

Sept. 18, 2025

On Thursday, September 18, schools and government offices were closed due to the expected impacts from a passing tropical wave. Unfortunately, there was water intrusion into the enclosure of Unit 15 that caused an electrical short which triggered the fire suppression system. Additionally, that day, there was a fault on the overhead section of the Feeder 13 transmission line as a result of the high winds. Unit 15 would remain unavailable until the following week when we could finally install replacement CO_2 cannisters, shipped over from St. Croix, to restore the fire suppression system.

Sept. 19, 2025

On Friday, September 19, the recurrence of the defective air valve on W6 around 10:20 AM triggered a series of cascading events that again caused a district-wide outage. Although Wärtsiläs 4, 5, 6, and 7 are individual engines, they have common support systems that they share, including the compressed air system. The failure of this system on Wärtsilä 6, caused the other three units to trip offline as well. Without the availability of Unit 15 and 23, and without a replacement air valve in inventory, the capacity shortfalls continued to a limited degree through Tuesday, September 23. We are in the process of implementing air compressor upgrades and redundancy to mitigate such failures.

Sept. 23, 2025

With the passing of another storm system on Tuesday, September 23, the Authority experienced feeder related outages, due to issues in the field, but had not seen a return to the level of generation instability that plagued the plant in the previous weeks.

Oct. 24, 2025

Last Friday evening, the Authority did experience a district-wide outage triggered by a fault on the underground section on the St. Thomas side of the St. Thomas-St. John transmission line. This triggered a fault on the underground section of the Feeder 13 transmission line. The fault combination and duration knocked out generation briefly in the Harley plant. While generation was placed back online relatively quickly, the fault current caused damage to the transmission line serving the island of St. John and Feeder 13. After repairing and restoring Feeder 13, crews worked through the night and located the faulted cables at around 1:24 a.m. The extensive repairs were started immediately, St. John's service was restored at 10:48 a.m. We want to take this time to recognize the sterling contribution of Mr. Fernando Jospeh and his crew, Mr. Micah Smith, and contractor Mr. Davis Registe who worked through the night to repair these transmission lines.

We have chronicled these events to demonstrate that there is no smoking gun. The back-to-back occurrence of these events magnified the effect and gave the appearance of a larger problem, but these were random events with very little correlation. It was a false alarm at the propane terminal, an apparent incident of operational error, storm-related outages, and mechanical failure of a valve that

conspired to create one of the most disruptive periods of power generation we have experienced in the past year. These were not systemic issues. The underlying commonality is the lack of preventative and routine maintenance that has left the Authority vulnerable to equipment failures. Had we had the full use of Units 23, 27, and 15, along with the smaller Wärtsilä engines, we would have had more than sufficient capacity to respond to any of these events with minimal disruption to our customers.

So let us talk about solutions.

The most immediate solution to improving the reliability of the Harley Plant is to invest in the maintenance of the current generating assets to ensure their operational readiness and extend their life cycle. However, the ability to keep our equipment properly maintained is directly tied to the financial health of the company. With sufficient funding, the Authority can maintain adequate inventory of spare parts. It can meet the payment obligations of our operation and maintenance contracts. It can maintain preventative maintenance software, tools, and equipment. The Authority would be able to immediately pursue the major overhaul required on Unit 23 in the Harley Plant.

I want to place a disclaimer on the record; the following statement is provided only for placing the current challenge in proper context. During the Authority's budget presentation before the Committee on Budget, Appropriations, and Finance this past August, we projected a budgetary shortfall of approximately $9.6 million in the current fiscal year. In December 2014, the Authority's residential rate per kilowatt-hour was $0.49. The rate has historically been as high as $0.52 per kilowatt-hour. The current residential rate is $0.43 per kilowatt-hour. An increase of two cents per kilowatt-hour on the current rate would yield at least $12 million in additional annual revenue and close the projected budget shortfall facing the Authority. That would resolve our immediate fiscal challenges and allow us to make further progress on our past due vendor payments.

I want to be clear; we are not advocating for a rate increase. While it may be the easy and quick solution—one the Authority has taken in similar circumstances—it carries significant risks. The increase would be justifiable given the undeniable rise in the cost of goods, services, and labor over the last five years. However, increasing rates would have a harmful impact on our operations. It would drive rising accounts receivable by our customers, including from the Government. It would stall economic recovery and growth, hasten grid defection, and ultimately erode our sales revenue. WAPA has been down this road before. Instead, we firmly believe in pursuing solutions that protect our customers and strengthen the Authority without resorting to measures that could undermine both.

We have chosen the more difficult path. That is to right-size our operation to fit within current rates by reducing our operating expenditures. There are opportunities for cost reductions and inefficiencies that can be improved. The challenge is to strike the right balance in how we pursue those operational cuts. If we cut staff dramatically, we risk reducing the level of customer responsiveness and satisfaction that our customers expect. If we reduce materials and supplies, then we risk being unable to provide our employees with the resources they require to be productive in performing their tasks. If we reduce our maintenance budgets, as we have done in the past, then that results in the power outages that bring us here today.

Allow me to provide an update on several initiatives that are in progress that will ultimately make a tangible difference in our operational reliability.

The loss of generation capacity has the greatest impact on the overall reliability of the grid. However, the most frequent cause of outages at the distribution feeder level is trees coming into contact with the power lines. For certain feeders, this has become a chronic issue.

I am pleased to say that we have begun interviews for utility tree trimmers and expect to have at least one in-house tree trimming crew functioning in each district before the end of November. We also expect to have an Invitation for Bids issued for a tree trimming contractor to supplement our in-house crews released within the month of November. That contract should be effective by next spring. This will return dedicated tree trimming capacity to the Authority for the first time in years.

Feeder 13 is a main transmission feeder on St. Thomas that was installed more than 20 years ago. The underground portions of this feeder are starting to approach the extents of their useful life and have frequently developed faults resulting in outages. We are now nearing completion of an overhead transmission line that allows the Authority to bypass the underground portion of Feeder 13. This bypass is expected to be completed before the end of the year and will allow us to repair and replace the underground of Feeder 13.

We are also anticipating the phased completion of the Estate Fortuna and Estate Bovoni solar farms by VIElectron in Q2 and Q4 2026. The Fortuna solar farm will place at least 25 megawatts of solar energy onto the grid backed up by 50 megawatt-hours of battery energy storage. The Bovoni solar farm will add another 10 megawatts with a 7.4 megawatt-hour battery. These projects will significantly increase the daytime generating capacity of the Authority in the St. Thomas-St. John district. They will reduce the maintenance, operating, and fuel costs of the existing generation fleet. They will also afford the capacity for daytime maintenance of generators to increase generation reliability without the looming threat of capacity shortfalls.

The Authority is pursuing temporary generation for the Randolph Harley Plant as an interim measure until a permanent generation project can be completed. The Office of Disaster Recovery (ODR) has included temporary generation as a component of the power generation replacement bundle being administered by the Super Project Management Office on behalf of the Authority. ODR is currently evaluating proposals for the selection of a contractor to lead this effort. Realistically, when timelines for contract negotiations, environmental permitting, and commissioning are considered, implementation of temporary power generation is likely at a minimum of 18 months away. We are working with ODR to determine the best way to expedite this project's delivery.

The installation of a new battery energy storage system (BESS) is also part of the power generation replacement bundle. This project would allow for increased energy storage capacity at the Harley Plant and insulate customers from shorter duration outages due to capacity shortfalls. This project does not require the extensive air permitting that generators require and may be able to be implemented in under 18 months.

Finally, the core of the power generation replacement bundle is the replacement of Units 14 and 15 with new, permanent generation units. This project will take more time for full implementation but promises to add additional fuel-efficient generation to the Harley Plant. More specifics on the timeline will become available once a contractor is selected.

Emergency Support Function (ESF)

The U.S. Virgin Islands is the recipient of $67,653,000 for enhancing or improving the electrical power system through the HUD Community Development Block Grant – Disaster Recovery Program. This program is administered by the Virgin Islands Housing Finance Authority. It originally earmarked $53 million to WAPA but has subjected WAPA to significant bureaucratic obstacles in order to access the funds. Furthermore, WAPA's allocation has recently been reduced to $35 million. We have submitted applications to utilize the funds on four projects:

- Installing a Battery Energy Storage System to backup the East End Substation;
- Replacing transformers in the distribution system;
- Installing distribution automation devices; and
- Rebuilding transmission Feeders 11 and 12.

We are awaiting feedback and funding on these applications. These are the types of projects that have an immediate, beneficial impact on the reliability of the power grid. They allow for quicker detection, isolation, and restoration of power during outages. They will improve power quality by ensuring consistent voltage and a stable power factor. They are also crucial for integrating growing amounts of distributed energy resources, such as solar power and electric vehicle charging stations onto the grid. Additionally, they enhance grid resilience against extreme weather events, including thunderstorms.

Of course, we could invest even more in this area of critical need if the $18 million that has been mysteriously reallocated were restored to the Authority. Composite poles and underground duct banks are valuable on the day a major storm hits, but the improvements achievable with these energy system enhancement funds benefit our customers every single day of the year. I cannot think of a more critical use of these funds than the purpose for which they were granted to the U.S. Virgin Islands—to stabilize the power grid.

Reproposed Legislation

In our invitation to this hearing, we have been asked to identify how the Legislature of the Virgin Islands can assist the Authority. We presented a list of measures and accompanying draft legislation to the Committee on Budget, Appropriations, and Finance on August 11. These include:

- Full payment for streetlighting services which were underfunded by $4.7 million in the most recent fiscal year (now totaling $6.8 million in arrears);
- Adjusting the legislatively mandated 30-day meter-reading cycle to 35 days to eliminate unnecessary estimation;
- Modifying the statute regarding backbilling;

- Permitting a customer charge for the water system;
- Placing a cap on liability for the Authority;
- Allowing increased disconnection fees in cases of theft or criminal activity;
- Revising the limitations on competitive bidding to streamline WAPA's procurement; and
- Appropriating past due PSC annual assessments so that the Authority can return to good standing with its regulator.

We would like to add three additional items to this list:

- Appropriate funding from the Tourism Revolving Fund to cover the costs of WAPA's support of the St. Thomas Carnival, Crucian Christmas Festival, and St. John Celebration.
- Provide further clarification of the PSC's authority to avoid encroachment into managerial decisions, procurement, and internal policies or superseding the Governing Board's statutory mandate.
- Amend the provision requiring the sunsetting of the Net Metering program for systems larger than 10 kilowatts to include commercial customers in addition to residential customers.

We have prepared detailed white papers outlining each issue, its impact on the Authority and proposed legislative solutions. We stand ready to engage in focused discussions to advance these proposals and move forward toward implementation.

Despite the recent outages, the Authority has made substantial progress in strengthening reliability despite limited resources. We are undertaking a transformative effort that will significantly enhance service delivery to our customers. WAPA's challenges are complex but entirely solvable. They do not warrant a federal takeover—only the political will to resolve. I urge you to listen to your fellow Virgin Islanders who have accepted the responsibility of managing this critical public service. We are not waiting for Superman to fly to our rescue. At WAPA, we have resolved to roll up our sleeves and do the necessary work to serve this community each and every day.

I want to thank the men and women of the Virgin Islands Water and Power Authority for their dedication and personal resilience in pursuing the mission of affordable and reliable power and potable water service.

Finally, Honorable Senators, public hearings like this are a necessary tool for public accountability and legislative oversight but are not effective forums for deriving real solutions. I want to remind you that my staff and I are available for individual meetings should you wish to discuss in detail the direction we are pursuing, our progress, and the challenges that remain. That is how you can best support our efforts to move the Virgin Islands Water and Power Authority forward.

I thank you for this opportunity to testify and we look forward to any questions you may have.