PREPARED STATEMENT OF
HUGO V. HODGE, JR., EXECUTIVE DIRECTOR/ CEO
V.I. WATER & POWER AUTHORITY
TO THE COMMITTEE ON ENERGY AND ENVIRONMENTAL PROTECTION
OF THE 30th LEGISLATURE OF THE VIRGIN ISLANDS

February 22, 2012

Good day Honorable Senator Craig Bassinger, Chairperson of the Committee on Energy & Environmental Protection, Honorable members of the Committee and other Senators present, testifiers and the listening and viewing audiences. My name is Hugo V. Hodge, Jr. and I am the Executive Director and Chief Executive Officer of the Virgin Islands Water and Power Authority (the "Authority"). With me to assist in this presentation are members of the Authority's Executive Staff. I thank you for allowing the Authority the opportunity to testify once again on the status of the Authority's efforts to develop and implement Alternative and Renewable Energy Projects to reduce the cost of power and to answer the questions that were put forth in the invitation.

A. OVERVIEW

Let me start by saying that the Authority is very mindful of the hardship that is taking place in the community due to the high cost of electricity. We know that our electrical rate is extremely high and indeed at the present price of $0.58 cents per kWH for residential customers and $0.54 cents per kWH for commercial customers, the Authority's rates are among the most expensive in the United States. While compared to other Caribbean islands, the Authority's rates are slightly above the middle of the pack, we understand that this is no solace to the people of the Territory whose per capita income is among the lowest in the United States, and are struggling every day to make ends meet. The Authority's efforts to find a sustainable and affordable source of energy

to produce power to the residents of the Territory has been, to say the very least, an uphill battle. The global recession, coupled with our aging infrastructure, critical cash shortfall, deferred maintenance, a declining customer base, and high fuel prices all converge to put the Authority in the most challenging time in the history of its operation. I would like to take this brief opportunity to thank the hard working employees of the Virgin Islands Water and Power Authority who each day diligently perform their duties and responsibilities to the best of their ability in these trying times. I also thank the Governor of the Virgin Islands and the Senate for its continued efforts to assist the Authority in its efforts to diversify its fuel portfolio, and a special thanks to the people of the Territory for their patience. There is still however much to do to address rising fuel prices, and the Authority is forging full steam ahead with a number of projects, which will commence at the end of this year, that we are confident will start the process towards significantly reducing the electric rates in the Territory.

No discussion on where the Authority is now with its effort to reduce the cost of power would be complete without a review of the events that have caused us to be where we are today. To put things into perspective, in the past few years, the price per barrel the Authority pays for fuel has jumped from $32.06 per barrel in October 2003 to a high of $132.00 per barrel in September of 2008, then down to $46.06 per barrel in April of 2009. Today, the price per barrel of oil paid for by the Authority hovers at $138.50 per barrel. As a result of the massive spikes in fuel prices, WAPA continues to face operating cash shortfalls as our fuel expenses outpace the revenues collected under the LEAC.

As if that were not enough, the cessation of oil refining activities by our fuel supplier, HOVENSA, LLC ("HOVENSA"), has further exacerbated an already critical situation. Prior to HOVENSA's closure of its oil refining operations, the Authority and its customers enjoyed a discount on the market per barrel price of fuel. Pursuant to the Third Extension Agreement between the Government of the Virgin Islands and HOVENSA, LLC, the per barrel price of fuel oil was the lower of the average landed cost at the refinery and the New York Harbor price, minus $2.00. Today, the Authority purchases No. 2 fuel from its new supplier Trafigura. The unit price in dollars per barrel ($/bbl.) under the new contract is computed by using a price formula of the specified postings plus the fixed premium amount offered by the Seller. Specifically, the pricing formula is:

> Fifty percent of No. 2 fuel from the average of quotations for the "U.S. Gulf Coast Waterborne" as published by the Platt's Oilgram Price Report; rounded to four (4) decimal places;
>
> Plus fifty percent of Heating Oil from the average of quotations for the "U.S. Gulf Coast Waterborne" as published by Argus US Products rounded to four (4) decimal places; said result must be then multiplied by 0.42 to convert from cents per gallon to dollars per barrel.
>
> Plus a fixed premium of $9.97 barrel.

To give you some perspective on the scope of the Authority's fuel use, the Authority purchases approximately 200,000 barrels of fuel per month or 2.4 million barrels of fuel per year for the operation of its Electric and Water Systems. As the chart below demonstrates, the amount of fuel that the Authority purchases for its operation has remained somewhat consistent over the past nine years, and in the past two years that amount had decreased significantly. However, the price of fuel has escalated rapidly,

and, as you can see, even though the Authority is using less fuel, it nonetheless pays more for that fuel.

Figure 1 – Historical Fuel Purchase and Costs

Fuel Purchased	FY 04	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12
Barrels-Mill	2.33	2.36	2.34	2.46	2.43	2.39	2.44	2.26	2.1
Paymts-$Mill	$76.80	$111.80	$149.20	$165.30	$214.60	$190.30	$184.60	$207.30	$264.6
Price Per Bbl	$32.96	$47.37	$63.76	$67.20	$87.23	$79.63	$75.66	$94.03	$121.3
Sales-GWh	741.2	763.8	767.5	776.4	775.9	724.3	754.8	755.8	723.

As I testify before you today, approximately 75% of the net revenues of the Authority go towards the payment of fuel. The remaining 25% is used to pay salaries and fringe benefits, debt service, maintenance, insurance, rent, capital projects, vendors, etc. For the record, the LEAC is not used to pay for any of the aforementioned costs. Needless to say, the remaining 25% is not adequate to satisfy all those needs, especially since WAPA has to utilize that 25% to also pay for fuel.

B. WHAT THE AUTHORITY HAS DONE/IS DOING TO ADDRESS RISING FUEL COSTS

For the past eight years, the Authority has left no stone unturned in its quest to address volatile fuel prices. Though regrettably not all of our efforts have gained the expected results, we are undaunted in our pursuit to bring rate relief to the citizens of the Territory, and believe that the solution is imminent. The journey the Authority has taken to decrease

its 100% reliance on fuel oil is illustrated by the following list of projects the Authority has pursued, and is currently pursuing:

1. In September of 2004, the Authority issued a Request for Proposal ("RFP") for Renewable and Alternative Energy. That proposal process came to a halt when the Public Services Commission ("PSC") issued an order enjoining the Authority from proceeding further with the procurement process without its approval. A two year legal battle ensued which ultimately resulted in a ruling by the Superior Court that the PSC does not have the statutory authority to enjoin the Authority. In the interim, the Authority had no choice but to cancel the procurement.

2. In September 2005, the Authority issued another RFP for Alternative and Renewable Energy and selected a wind technology proposal for negotiation. After months of extensive negotiations, the process came to a stalemate when the bidder could not commit that the wind turbines that were being proposed could withstand hurricane force wind. Thereafter, the bidder advised the Authority that it was withdrawing its proposal.

3. On December 28, 2007 the Authority issued yet another RFP for the purchase of alternative or renewable energy for the Territory. As a result of this RFP, in August of 2009, the Authority entered into two (2) twenty (20) year power purchase agreements; one with Alpine Bovoni, LLC to provide 32 MW of energy for the District of St. Thomas/St. John and one with Alpine Anguilla,

LLC to provide 16 MW of energy for the District of St. Croix. Per the agreements, Alpine would have provided energy by constructing Waste-to-Energy Plants on St. Thomas and St. Croix, along with the facilities on each island to pelletize the solid waste as a fuel source. The project would have also used petroleum coke as a supplemental fuel source. This month, February 2013, that project would have been in commercial operation selling power to the Authority at $0.14 per/kWH. The project did not materialize however due to opposition from certain segments of the public to the inclusion of petroleum coke as a fuel source and Alpine's inability to obtain authorization from the Legislature of leases of government property needed for the project. In the interim, and in response to the concerns raised about the use of petroleum coke as a supplemental fuel source, the Parties agreed to terminate the agreement with Alpine Bovoni, LLC, and re-negotiated the agreement with Alpine Anguilla, LLC, which agreement removed petroleum coke as a fuel source. What remained was a single Waste to Energy plant only, capable of producing 16 MW of waste energy with a waste station facility to be constructed on St. Thomas. The cost of the energy to be sold to the Authority under this revised agreement would have also been $0.14 per/kWH, and the project would have been in commercial operation by December of 2013. When Alpine could not obtain the lease of Government property needed to construct the waste station facility on St. Thomas, it terminated the contract for the project on February 15, 2012.

4. In August 2010, the Authority dedicated a new Heat Recovery Steam Generator ("HRSG") on St. Croix. The HRSG had been recommended in a 2005 Harris Group Study of the Authority's System and by a similar study conducted by R.W. Beck in 2008. It was also recommended by the consultant for the PSC, Georgetown Consultants, and was referenced as an initiative in the OIG report in 2009 that the Authority should continue to pursue. The HRSG is a boiler designed to capture the hot gases from two gas turbines, Units 16 and 20, which gases would have ordinarily exhausted into the atmosphere. By utilizing the HRSG, hot gases are converted to steam, sent to a steam header where it is distributed to steam turbines #10 and #11 to generate additional electricity, and to the desalination plants to produce potable water. Essentially, steam is produced in this process without the Authority burning additional fuel. This method of combining the operation of the combustion turbine with a heat recovery steam generator improves overall efficiency because additional fuel is not burned to produce the steam. On a daily basis, the Authority burns 300 to 600 less barrels of fuel per day when the HRSG is operational. This process is saving the Authority, depending on the availability of units for this mode of operation, between $15,171,225.000 to $30,342,450.000 annually in fuel costs at today's fuel prices. The Authority plans, once it obtains funding, to purchase and install another HRSG, this time for the island of St. Thomas. We anticipate going out for this procurement in 2014 or 2015.

5. The Authority commissioned an Electrical Grid Interconnection Study (the "Study") which was performed by Siemens Energy Inc. The Study was to determine the feasibility of an electric grid to connect the Virgin Islands, Puerto Rico, and parts of the British Virgin Islands. This project was funded in part by $250,000 provided by this Honorable Body, and an additional $475,000 that was provided by Department of Energy. The final Study, which was completed on December 13, 2011, concluded that an electrical grid connection with Puerto Rico was feasible. However, as a pre-requisite for going forward with this project, an environmental impact and assessment study had to be conducted. On November 7, 2012 the Authority issued an RFP to secure proposals to conduct the environmental study. At its January 28, 2013 meeting, the Authority's Governing Board authorized the Authority to negotiate with CDR Maguire Inc. for this study. Once a contract is finalized, the study is anticipated to be completed by December of 2014. Note that a preliminary environmental screening was performed on the proposed project. In addition, a pre-application meeting with all applicable federal and local regulatory permitting entities took place. Based on the consensus of the parties at this meeting, it was determined that the project is likely to obtain the necessary permits.

6. On May 18, 2011, the Authority issued an RFP for Solar Energy which resulted in proposals from twenty-seven companies. After reviewing all twenty-seven proposals, the Authority created a short-list comprised of six (6)

bidders, and eventually entered into contracts in June of 2012 with Sun Edison, Lanco Solar and Toshiba for a combined total of 18 MW of power, 10 MW of which will be generated on St. Croix and 8 MW will be generated on St. Thomas. The majority of the project will be completed by December 2013, and the remaining solar projects will all be operational by April of 2014. With this 18 MW of power, the Authority will have 17% of its peak demand generating capacity coming from renewable sources, and will be well on the way to meeting the requirements of Act 7075, which mandates that 20% of the Authority's peak demand generating capacity must be derived from renewable energy technology by 2015.

7. In April of 2011 the Authority commenced a study that examined the economic and technical feasibility of converting a large part of its electric generation on St. Thomas and St. Croix to burn Liquefied Natural Gas (LNG). This study was conducted by R.W. Beck (now SAIC) and Galway Group. The results of the study concluded that small-scale LNG would be a practical option for the Authority to pursue. Similarly, General Electric (GE) conducted a technical engineering evaluation to determine the feasibility of converting the Authority's combustion turbines for dual fuel use. Following GE's determination of the feasibility of converting the Authority's combustion for dual fuel use, the Authority in July of 2012, revisited the 2011 LNG feasibility study performed by Galway Group. This study confirmed that small-scale LNG would be a practical and economic approach for the

Authority to pursue. This study also identified the potential of using Liquefied Petroleum Gas ("LPG") as a bridge fuel for the Authority's facilities until LNG was implemented.

Encouraged by these studies, on November 30, 2012, the Authority issued a Request for Qualifications ("RFQ") for a company that could supply it with LNG. In addition the Authority also issued, on the same date, an RFQ for a company to provide LPG. The strategy of issuing the two RFQs was to allow the Authority to proceed expeditiously to maximize its future ability to burn diesel, LPG and/or natural gas, or any combination thereof, as a function of future market conditions and availability of supply. The Authority received five (5) submissions for LPG and eight (8) submissions for LNG. The Authority subsequently shortlisted the number of interested parties to three (3) LPG candidates and four (4) LNG candidates. In January, the Authority met with all the shortlisted companies and heard presentations on their submissions. After those discussions, the Authority determined that it would proceed in parallel with further discussions with both the LPG respondents and the LNG respondents. Given the currently less developed state of small–scale LNG market, negotiations with the LNG respondents and the implementation of an LNG solution is likely to take longer than the LPG solution. Consequently, the Authority has elected to focus its attention on the LPG project. Therefore, the Authority is in the process of providing the three shortlisted LPG respondents with additional technical information, in order to

enable them to submit a detailed technical and commercial proposal to the Authority for a bundled, turnkey solution to meet our needs for: (a) reliable LPG supply, (b) LPG storage and transportation infrastructure, and (c) turbine conversion to tri-fuel capability.

In proceeding first with LPG, it is the Authority's intention to ensure that the LPG infrastructure design will: (a) permit the Authority, to the maximum extent possible, to utilize such infrastructure for both LPG and LNG, and (b) not preclude the Authority in any way, technically or economically, from transitioning from LPG to LNG at some point in the future.

The Authority will be requesting the LPG respondents to provide pricing and more developed technical proposals by April 2013. LNG respondents will be asked to provide pricing and more developed technical proposals by June 2013. It is anticipated that contract negotiations will be fast-tracked to commence in April 2013, with the front-running LPG respondent with a view to executing an LPG contract by the end of April 2013. Negotiations with LNG respondents will commence after the contract is executed for LPG, which is likely sometime in June 2013, with contract signing by mid-summer 2013. The Authority is aiming to complete the LPG project by the end of the first quarter of 2014 although some permitting activities may cause the start-up of the project to slide into second quarter of 2014. Based on current market prices, the conversion to LPG is expected to reduce the price of fuel to operate the units by approximately 30%, and the LNG option may provide even

greater savings in the future. Although LNG use would be expected to further decrease fuel costs, its implementation could take several more years to complete due to the lengthy U.S. Federal permitting process and the long lead time needed for sourcing and construction of that infrastructure.

8. In furtherance of implementing both the LNG and LPG projects, the Authority must convert its combustion turbines (CTs) at its St. Croix and St. Thomas generating facilities to enable them to burn LPG and LNG in addition to fuel oil. It is anticipated that four boilers at the two facilities will be permanently shut down. The Authority has commenced discussions about the conversion with General Electric, the original equipment manufacturer for the majority of the Authority's generating units. We are currently seeking a funding source for financing this project.

9. The Authority is working in conjunction with the Virgin Islands Energy Office to complete wind studies to determine the economic feasibility of wind power development in the Territory. The National Renewal Energy Laboratories ("NREL") estimates that 12 MW to 33 MW of potential utility scale winds energy deployment exists in the Virgin Islands. These estimates assume the possibility of siting 10 to 20 wind turbines with rated capacities greater than 1 MW each. Logistical considerations and space limitations may make achieving the higher end of the range difficult. NREL has also determined that when the wind resource potential in the Virgin Islands is compared to the costs of recent utility scale projects in the Caribbean, the cost

of energy in the Virgin Islands can be expected to range between $0.14 to $0.30 cents per kWh. The wind anemometry utilized to measure the wind strength was installed in November of 2012. Once one year of data is accumulated, the Authority will have enough information to satisfy the needs of prospective bidders. The Authority anticipates using the result of the study to issue, on or before December 2013, a request for proposal for a wind power solution.

10. Act 7360 was signed into law on May 14, 2012. The Act acknowledged the unprecedented economic and energy crisis facing the Territory, and established the Virgin Islands Water and Power Authority Generating Infrastructure Fund (the "Fund"). The Fund contains the proceeds from the gasoline tax, which had, pursuant to the same legislation, been increased from $0.07 to $0.14. The monies deposited into the Fund is to be used exclusively by the Authority to: (1) fund new energy and power generating units and/or heat recovery steam generators which are to be energy efficient and have the ability to convert to natural gas and (2) assist with the issuance of bonds for the Virgin Islands Water and Power Authority through the Public Finance Authority. This legislation will be an instrumental piece of a larger plan to reduce the high cost of energy in the Territory. Towards this end, after the legislation was passed, the Authority met with its financial consultants to discuss the viability of the Authority floating bonds using the Fund as the repayment source for these bonds. Our financial consultants advised that the

rating agencies would be hesitant with an approach that uses the Fund as collateral because the legislation does not allow for the Authority to issue the bonds and further, does not allow for automatic disbursement of the monies to the Authority. While the current legislation allows for the Commissioner of Finance to disburse the monies in the Fund upon the authorization of the Authority, *See 33 VIC §3039a(c),* the legislation does not allow for the automatic disbursement of the monies to the Authority once that request has been made. A provision that allows the Authority, and not the PFA, to float the bonds and for the Authority to have automatic access to the monies in the Fund will allow the Authority the ability to leverage the additional revenue more efficiently, by combining it with its projected net electric revenues. If the Authority were to add the fuel tax revenue to projected net electric revenues, it could leverage 100% of the fuel tax revenue. This is possible because the Authority is an established issuer and has maintained ratings since 1998 with all three major rating agencies (Moody's, S&P and Fitch). Furthermore, the Authority has a history of solid debt service coverage well above the covenants required under the existing indenture of 1.25x for senior lien bonds and 1.15x for subordinate lien bonds, and has never missed a debt service payment.

In addition to the change to allow for issuance of bonds and for automatic disbursements of the monies in the Fund, the Authority is also requesting a further change to Act 7360 pertaining to the uses for the Fund. In addition to

the listed purposes for which the monies in the Fund may be used, the Authority would like to also be able to use the monies in the Fund for the conversion of the existing power generating units to operate on fuel oil, LNG and LPG. As the Authority noted in its outline on the status of the LNG and LPG projects, the implementation of LPG is approximately 14 months away. The conversion is approximately a nine to twelve month process after permitting, and is a critical step in the process that will bring the most immediate relief to residents from the high energy costs in the Territory. Hence, the Authority will be coming before this Body to seek these amendments to Act 7360. We hope we will have your support to these measures.

11. As you know the Authority, as part of its operations, produces potable water. For over thirty years, the Authority has produced this water utilizing the Israel Desalinization Engineering ("IDE"). This process is dependent on burning fuel oil, and approximately 7% of every gallon of fuel oil purchased by the Authority is used by the IDE to achieve thermal demand for production purposes. In the past, this technology was very viable given the low cost of fuel and the fact that oil prices then were not subject to the volatility and fluctuating prices we experience in today's oil market. Accordingly, once oil prices rose and remained high, the Authority commenced its due diligence to secure, via its procurement process, potential options that would result in the lowest production cost for potable water, while simultaneously maintaining a

high quality of water to our customers. The procurement resulted in the selection of Seven Seas to produce water via the Reverse Osmosis or "RO" process. The RO process pushes sea water through a very fine membrane at high pressure. The filter separates the water molecules from the salt ions, creating purified drinking water. The RO project was selected in order to change the Authority's process of producing potable water at its generating facilities on both islands from a thermal dependent process to a reverse osmosis process. The Authority has agreed to purchase 3.3 mgd of water from RO for its St. Thomas operation. These permanent facilities, barring any unforeseen circumstances, are estimated to be in commercial operation by early April 2013. St. Croix's RO facility for potable water should be in operation, again barring any unforeseen circumstances, by September 2013.

For the record, the majority of the St. Thomas potable water and a significant portion of St. Croix's potable water are already being processed by RO. If you recall in the latter part of 2011, there was severe water shortages on St. Thomas due to an unexpected critical malfunction of the system. In December 2011, the Authority installed six (6) temporary seawater RO units at the Randolph E. Harley Power Plant, resulting in an output of 1.5 million gallons of water per day. An additional unit capable of generating another 500,000 gpd was brought over from St. Croix, resulting in a total of 2.0 million gpd being generated. These units helped to eliminate water rationing that started mid-November on St. Thomas, and are now bridging the gap until

the permanent RO system is available in April 2013. The change from the IDE process to the RO production technology proposed by the Authority is anticipated to result in approximately a 50% reduction in water production cost. Not only will the implementation of RO translate into savings and lower water rates to customers, but it will bring much needed capital improvements to the distribution system. It is important to note that the final rate re-structuring will be subject to review by the PSC upon the filing of a Water Base Rate Review.

12. The implementation of the AMI /AMR project is well underway. AMI stands for Advanced Metering Infrastructure and AMR stands for Automated Meter Reading. It is a proven technology that will enable the Authority to read meters remotely without having to physically visit and manually read meters. An AMI system consists of various components and adds value primarily by enabling two-way communication between customers and the Authority. AMR enables only one-way communication, allowing the Authority to only read meters. AMI/AMR includes the communication hardware, software, and associated system and data management software that creates a network between advanced meters and utility business systems. It allows collection and distribution of information to customers and other parties. With the implementation of AMI/AMR technology, the Authority will be able to more easily anticipate its customers' electricity needs, and more accurately report customer consumption based on actual usage instead of estimated usage. The

Authority's customers will now have greater consumer control over their bills because they will be able to monitor their use online and adjust use throughout the month before they receive their bills. Customers will also have more accurate readings because readings will never be estimated as a result of inaccessible or malfunctioning meters.

Additionally, when smart meters monitor all energy use, the Authority will receive an actual and more accurate overview of energy consumption in any given area. This means that the Authority can examine suspicious areas where energy use is higher than expected, thereby providing the Authority with an even better tool to detect fraud.

Finally, the Authority will also be able to respond to consumer outages faster, thereby saving the consumer valuable down time. The meters would alert dispatchers that power is out. Depending on the amount of meters without power and where the meters are located, line crews can pinpoint problems before even leaving the office. Ultimately, it will save the Authority time and money on multiple trips just for assessment.

WAPA anticipates the cost of the project to be between $8 million to $10 million. In getting ready for the AMI/AMR deployment, the Authority has conducted extensive research on the technology to be used and completed a business case for AMR/AMI. In addition, the Authority also conducted a Pilot in the STT/STJ District and has concluded that the technology chosen for

the AMI System will work in the Territory. At its December 2012 meeting, the Authority's Governing Board authorized negotiations of a contract in the amount of $9 million for AMI implementation with Itron/Tantulus. The Authority is also proceeding ahead to add AMI for Water Distribution to the scope of work. This project is, barring unforeseen circumstances, anticipated to be completed in the fourth quarter of 2013.

13. The Authority is implementing Distribution Automation Technology and a Smart Grid capital improvement project. Distribution Automation ("DA") is a proven technology which will enable the Authority to remotely, and in some cases automatically manipulate basic switches, capacitors, relays and other devices necessary to control a large and complex array of power lines, substations and other elements of the system. This will result in correcting faults and rerouting power around failed distribution equipment much more quickly, further reducing the impact and duration of outages. DA handles this remote manipulation along with a software application system called SCADA ("Supervisory Control and Data Acquisition"). SCADA allows dispatchers to see what is happening on the system and make changes remotely. This project will help to mobilize the field crews in an efficient manner by assisting them to get directly to the root of the problem, hence a reduction in outage time. DA includes the communications hardware, software, and associated system and data management software that creates a mesh network between all switches installed on the Authority's system.

KEY Benefits of the DA System

- **Direct financial benefits**: lower costs, avoided costs, stability of costs, and pricing choices for customers.
- **Power reliability and power quality benefits**: including reduced number and length of outages, reduced number of momentary outages, "cleaner" power, and reliable management of distributed generation in concert with load management and/or microgrids.
- **Safety and security benefits**: increased visibility into unsafe or insecure situations, increased physical plant security, increased cyber security, privacy protection, and energy independence.

Energy efficiency benefits: reduced energy usage, reduced demand during peak times, reduced energy losses, and the potential to use "efficiency" as equivalent to "generation" in power system operations.

C. EFFICIENCY OF THE AUTHORITY'S SYSTEM

Much concern has been expressed about the efficiency of the Authority's system. The Authority is working diligently on a daily basis to continually improve the system in ways that will reduce the amount of oil consumed per kWh of electricity produced and therefore the cost of fuel that must be borne by our customers.

The Authority operates its system first to meet the needs of customers for electricity and water to ensure protection of health and safety, to promote convenience and economic well-being. In other words, the Authority's first priority must be to provide electricity when needed and then to provide it in the most efficient and cost effective manner possible. Therefore, at times, the Authority is forced to forego the most efficient operation to ensure reliable supply of electricity and water when needed. When forced into these actions, one must be mindful that the Authority cannot be connected to other systems to draw resources from during periods of forced outages.

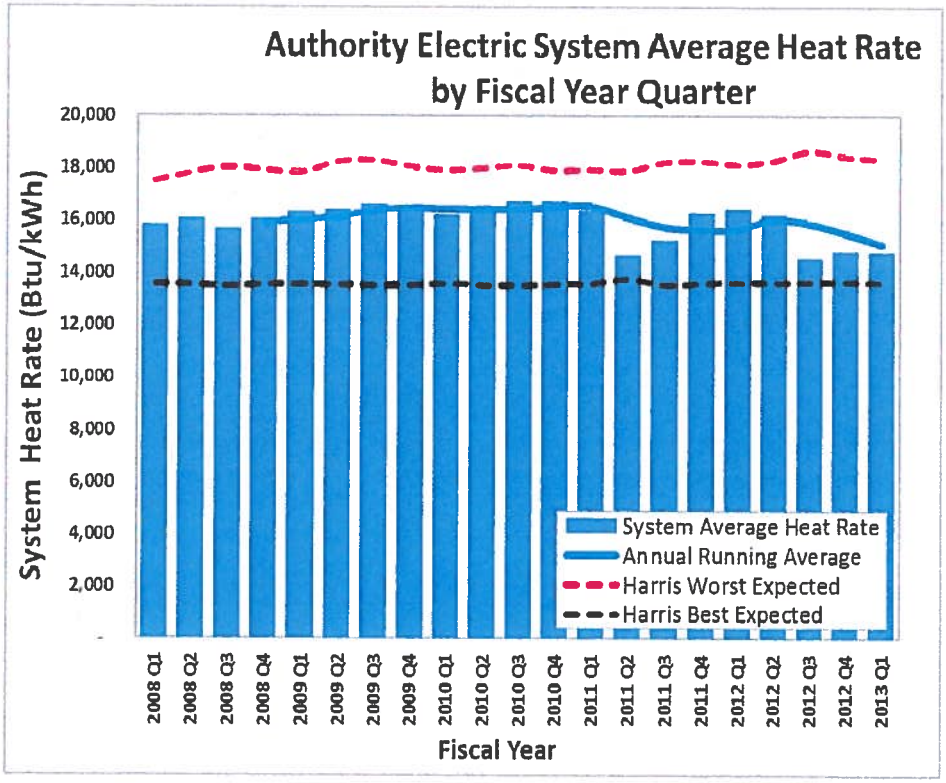
Primarily, the efficiency of the Authority's generation system can be improved by improving the reliability of the most cost effective generation units now installed on the system and installing new more cost effective resources. The amount of improvement that can be made by operating the available units in a more efficient way hour to hour to serve our customers' load is relatively far less.

Unfortunately, information from various reports and other sources and comparisons to US and other utilities that very different from the Virgin Islands has been used to imply that the Authority should be able to operate its current system in a way that would reduce the cost of fuel by 1/3 or even ½ of the cost being incurred. That expectation is simply not founded in fact and is very misleading and damaging. For instance, as I will testify further in a moment, some may have concluded from information from the U.S. Department of Interior's Office of the Inspector General (OIG) December 2009 Audit Report that the Authority could improve efficiency by almost 50% from 21% to 31% simply by operating more efficiently. That expectation is not in that Report. By contrast, that Report included an analysis that shows the effect of improving the efficiency by 10% from 21% to just over 23%. As you will see, that level of improvement has occurred since the Report was prepared.

Simply stated, improving system efficiency will required adequate rate relief in the near term to allow the Authority to perform needed maintenance and overhauls on a timely basis and sufficient access to capital funds necessary to install new assets needed to improve system efficiency. It will also require the focus, attention, and dedicated efforts of the Authority's employees, Governing Board, this Honorable Body, and regulators.

Overall, the most comprehensive assessment available of Authority's operating efficiency was presented in a 2005 Report prepared by the Harris Group, Inc. has operated its system within expected ranges considering the real world factors that need to be taken into account concerning the Authority's specific situation. While the Report was prepared some time ago, the system has not changed dramatically in the interim. As you can see from the following graph, the Authority's heat rate has fallen within the ranges anticipated in the Harris Report and even more importantly, it has been improving in recent years. By way of explanation for those not familiar with the term, heat rate, a utility system's heat rate is often used to quantify efficiency but it is inversely related to efficiency – as efficiency improves, the heat rate goes down.

Figure 1 - Efficiency Consistent with the Harris Report



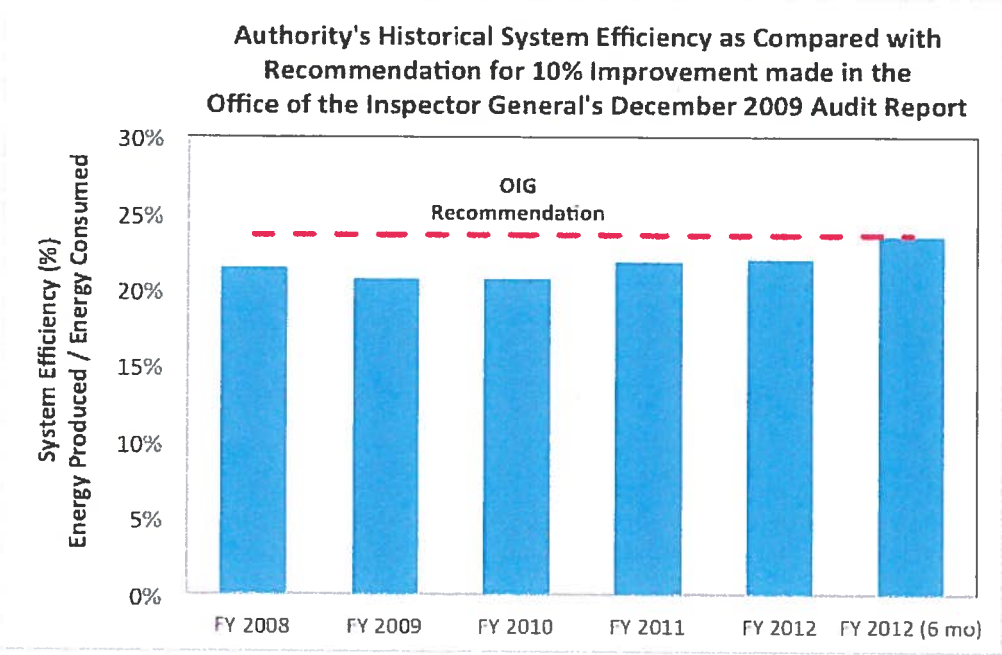
D. RESPONSE TO QUESTIONS:

To shed further light to the state of energy issues facing the Authority, you have asked that we respond to a number of questions in your invitation letter. As such, please note the following:

1. *According to the U.S. Department of Interior's Office of the Inspector General (OIG) December 2009 Audit Report, plant efficiency is one of the largest obstacles WAPA faces in lowering energy costs to consumers. What specific corrective actions has WAPA taken to improve its approximately 21% low level of efficiency and meet OIG's recommended net increase in power production efficiency by 10% to (31%)?*

   The OIG Report referred to potential fuel cost savings that could result from improving the Authority's 21% efficiency level by 10%. This has been misunderstood as meaning that the Authority's efficiency level should improve to 31%. The estimated savings mentioned in the Report of $18 million was based on the Authority's efficiency level improving by 10% from 21% to just over 23%. As can be seen from the chart below, the Authority's actual performance for the first six months of 2013 has met the level of efficiency improvement referenced in the OIG's December 2009 Report.

Figure 2 - Potential Efficiency Improvement per OIG Dec 2009 Report



2. *OIG and Georgetown Consulting Group, a Virgin Islands Public Services Commission (PSC) Consultant recommended the use of Heat Recovery Steam Generators as a means of WAPA improving efficiency of its generating unit and reducing the cost to consumers. What actions are being taken by WAPA (and by what timetable) to purchase and install an HRSG, particularly on the island of St. Croix?*

As I testified earlier in this presentation, the recommendation to consider the installation of HRSG's on the islands of St Croix and St. Thomas was provided by Harris Group Inc. in a condition assessment study commissioned by the Authority and completed October 31, 2005. These recommendations were reiterated by the Georgetown Consulting Group in 2007, R. W. Beck's Power

Supply Study in 2008, and The Office of the Inspector General Report in 2009. The Authority has in fact acted on these recommendations to install HRSGs on both islands.

In fact, HRSGs have been installed on the Islands dating back to 1989.

a. In 1989, the Authority installed HRSG Unit 21 on St. Croix that uses waste heat from either Unit 16 or 17 to produce electrical energy through either Unit 10 or 11 steam turbines and also provides steam for water production through the IDE plant.

b. In 1997, the Authority installed a HRSG on St. Thomas, also referred to as HRSG Unit 21, which uses waste heat from Units 15 and 18 to produce electrical energy through Unit 11's steam turbine and also provides steam for water production through the IDE plant.

c. In 2010, The Authority installed a second HRSG on St. Croix referred to as Unit 24 that uses waste heat from Units 16 or 20 to produce electrical energy through Units 10 and 11 steam turbines.

d. Currently, the Authority is evaluating and planning two additional HRSG projects on St. Thomas. The first project would entail modification of the existing HRSG Unit 21 to produce additional electrical energy since the steam needed for water production will no longer be needed as a result of the implementation of RO water production capability. The second project would be to install another HRSG on St. Thomas that would use waste heat from Unit 23 to produce electrical energy through Units 11 and

13 steam turbines. This second project may also involve construction of a new Frame 6 gas turbine to provide additional capacity to ensure better reliability by providing redundancy for the most efficient generating units on St. Thomas.

Please see page 7, item 4 for information previously provided on this matter.

3. *WAPA recently issued Requests for Proposals and Requests for Qualifications to seek alternative and renewable fuel sources to diversify energy production in the Virgins Islands. Provide a plan with action costs and timetable for alternative and renewable energy production in the territory and the expected impact of each source.*

   The answer to this question has been provided in significant detail earlier in my testimony, so I will not review that information again at this time.

4. *Has WAPA established (and is in compliance with) a preventative maintenance schedule to maximize the efficiency of its existing generating units and reduce costs to consumers?*

   The Authority has in place an ongoing 5 year capital project and maintenance plan, which is updated on an annual basis. Any capital projects and major maintenance activities not completed in the current year are carried over into the next year's plan. A preventive maintenance schedule represents a guideline not a requirement, therefore the reference to "compliance" seems out of context. Preventive maintenance is a critical activity to help assure long-term reliable performance of the generating units. However, the level of maintenance that can

be practically performed is a function of available personnel resources and funding for and availability of necessary replacement parts and equipment.

When required maintenance funding levels or personnel resources are restricted or reduced, preventive maintenance intervals are typically one of the first areas where discretionary compromises are made, particularly to maintenance intervals. Although these discretionary interval extensions can be made on occasion with little harm to operating reliability, continued deferral can have and has had significant and detrimental long term effects on the condition and therefore the reliability of the Authority's generation resources.

Preventative maintenance and overhaul projects have been deferred, primarily due to cash constraints. Unfortunately, this has adversely impacted the reliability of the Authority's most cost effective generation units. The bottom line result has been than the costs to the customer have been higher than had the maintenance been done in a timely fashion.

5. *Given that WAPA uses approximately 80% of its operating funds for fuel and fuel related costs, what are the specific funding resources allocated, per island to adequately maintain and repair existing generating units and engage in the practice of economic dispatch?*

The Authority must meet its obligation and expenses on an ongoing basis. Except for funds specifically earmarked for maintenance and improvement of generation units, such as funds collected through the RFM portion of the LEAC Rate, the allocation of operating revenues and other funds to maintenance and repair must

come after paying fuel costs because fuel is absolutely essential to operations. To the extent available funding falls short of the actual fuel costs or other critical costs and expenses, necessary funds typically are reallocated from maintenance or production operations to cover the shortfall. For many years, there have been significant preventative maintenance and overhaul projects deferred due to lack of funding that have significantly reduced the reliability of our generation plants. At times, this has caused us to use the Authority's less efficient generation plants to produce the energy needed by our customers.

The implementation of automated economic dispatch of our generation system has been considered in the past by the Authority. Implementing an automated system would require significant investment in infrastructure. The unique configuration of the Authority's generation systems involving the use of waste heat from multiple generation units depending on unit availability adds significant complexity and cost to any system of automatic generation dispatch control. At present, the Authority uses unit loading guidelines that were developed by the Harris Group and through other studies to determine the most cost effective and reliable hour to hour use of the available generation resources to meet customer electrical loads and to provide heat used in the production of water. We will be reconsidering in the near future the currently available options for achieving the most economic dispatch with assistance from our power supply consultants.

6. *Has WAPA established a bill paying policy with the Government of the Virgin Islands to ensure that all delinquent utility bills owed to WAPA are paid as soon*

as possible and that Government entities pay WAPA month utility bills on a priority and timely basis?

Government accounts are considered key accounts at the Authority. As such, key accounts are assigned to a manager, dedicated to monitoring these accounts and to aggressively address delinquent balances. The Government of the Virgin Islands has made significant strides in reducing its outstanding balance to the Authority. In November 2011, the Government and its Instrumentalities owed the Authority approximately $30 Million for both water and electric services. As of January 31, 2013, the Authority is owed a total of $19.8 million for utility services (water and electric). Of the $19.8 million, $8.5 million (of which $1.1 million is current) is owed by the Instrumentalities. The greatest portion of the debt owed by the instrumentalities is $5.6 million which is owed by Juan Luis Hospital. The Central Government owes the Authority $11.3 million, of which $3.4 million is current. The greatest portion of the Central Government's debt is for streetlight services, which has a balance of $4.9 million.

7. *In the Public Services Commission's December 2012 Order issued to WAPA based upon the finding from Georgetown Consulting Group, the PSC issued a requirement that WAPA meet certain minimum filing requirements before asking for any further LEAC increase. What corrective action has WAPA taken to rectify problems associated with requirement for LEAC filings?*

Since the issuance of that Order, and pursuant to a Petition for Reconsideration filed by the Authority which raised issues of concern pertaining to the minimum

filing requirements, the PSC has opened a docket to facilitate the issues associated with the LEAC rate filing mechanism. The Authority looks forward to working with the PSC to introduce a mechanism that is efficient and effective. In addition, the Authority has retained the services of InFront Consulting to assist, as needed, in addressing the Authority's rate filing activities. Further, the Division of Pricing and Rates, which has been understaffed due to retirement and illness of its personnel, is being restructured and re-staffed and will play a key role in ensuring the LEAC filings are complete.

8. *In accordance with PSC Rules and Regulations, WAPA is required to determine and file with the PSC annually its "avoided cost". Please respond as to whether WAPA has complied with this specific PSC Rule and Regulation from Year 2007 to the present, and if not, why?*

The Authority has filed avoided cost information with the PSC on three occasions since 2007. The information was filed in 2008, 2010 and 2011. The 2012 avoided cost study is delayed. The Pricing and Rates Division of the Authority is charged with, among other things, the responsibility for overseeing the preparation of the avoided cost study. However, as previously stated, this Division has been understaffed due to retirement and illness of certain key personnel. The Authority is in the process of re-structuring and re-staffing this business unit. We anticipate that when fully staffed, all rate related matters, to include the filing of the avoided cost study, will be more timely. With regard to the 2012 avoided cost study information, the Authority received a preliminary

draft of the study this week and will be filing the final results with the PSC after presenting the result to the Authority's Governing Board at the February 28, 2013 meeting.

E. CONCLUSION

The Authority has continuously emphasized that the volatility in fuel prices and accompanying high cost of power is not our crisis alone. It is a situation of global proportions and assistance from the local and federal governments is required to continue to fight this battle. There is, however, much more to do, and the Authority will continue to exhaust each and every avenue to bring much needed rate relief to the Territory and its ratepayers. We continue to invite any and all efforts from the Legislature and the Governor to partner with the Authority in any endeavor that will identify potential sustainable solutions.

END OF TESTIMONY