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(650) 483-5721



## **Automated Metering Infrastructure Assessment Project**

***Response to Virgin Islands Water and Power  
Authority PR-14-21 Bid Request for Additional  
Information by Z2Solutions LLC (Z2S RFI #2)***

***April 20, 2022***



20 April, 2022

Nicole Aubain  
Contract Administration Manager  
Virgin Islands Water and Power Authority  
9720 Estate Thomas  
Al Cohen Plaza St. Thomas, VI 00802

RE: AMI Assessment Project

Dear Nicole Aubain:

Z2Solutions LLC is pleased to provide this additional information as requested in Z2S FRI #2.

Z2Solutions sincerely hopes you will consider our proposal and will be happy to discuss this proposal to address the needs of your program. With our extensive experience and expertise, successful history of implementations and customer satisfaction, we feel that VIWAPA will enjoy a most successful AMI Assessment project. Please do not hesitate to contact me at 650-483-5721 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "J. Wambaugh", with a stylized flourish at the end.

John O. Wambaugh  
Z2Solutions LLC



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## **1. Request for Company financial stability & credit worthiness**

Z2Solutions LLC (Z2) received a request to “Please provide sufficient financial stability & creditworthiness information such as a yearly loss and profit summary or a credit history report. “ on 19<sup>th</sup> April, 2022.

Please find below Z2Solutions LLC’s profit and loss statement from 2020 and 2021, as well as the current year to date. Please note that the slight loss shown in 2021 is due to outstanding receivables which carried over to 2022 (Z2Solutions accommodated several customers who experienced COVID hardships with personnel as well as one customer who experienced hardships due to hurricane damage). Also, as noted previously, Z2Solutions is a limited liability company and proceeds are distributed to the partners (as subcontractors).



## Z2Solutions LLC

### Profit and Loss

January - December 2020

	TOTAL
▼ Income	
Sales	2,150,014.59
Unapplied Cash Payment Income	3,758.39
Uncategorized Income	25,117.89
<b>Total Income</b>	<b>\$2,178,890.87</b>
GROSS PROFIT	<b>\$2,178,890.87</b>
▼ Expenses	
Bank Charges	132.00
Benefits	287,810.16
Insurance - Disability	17,297.01
Insurance - Health	17,113.32
Insurance - Liability	5,637.54
Office Expenses	4,195.91
Salary	21,365.64
Subcontractors	1,411,191.55
Taxes & Licenses	130,429.12
Travel	32,775.69
<b>Total Expenses</b>	<b>\$1,927,947.94</b>
NET OPERATING INCOME	<b>\$250,942.93</b>
NET INCOME	<b>\$250,942.93</b>



## Z2Solutions LLC

### Profit and Loss

January - December 2021

	TOTAL
▼ Income	
Sales	1,617,117.67
Unapplied Cash Payment Income	0.00
Uncategorized Income	22,382.50
<b>Total Income</b>	<b>\$1,639,500.17</b>
GROSS PROFIT	<b>\$1,639,500.17</b>
▼ Expenses	
Bank Charges	0.00
Benefits	399,439.02
Insurance - Disability	17,297.01
Insurance - Health	13,710.95
Office Expenses	14,628.60
Salary	-8,437.50
Subcontractors	955,946.85
Taxes & Licenses	242,122.42
Travel	16,669.42
<b>Total Expenses</b>	<b>\$1,651,376.77</b>
NET OPERATING INCOME	<b>\$ -11,876.60</b>
NET INCOME	<b>\$ -11,876.60</b>



## Z2Solutions LLC

### Profit and Loss

January 1 - April 19, 2022

	TOTAL
▼ Income	
Sales	390,221.19
Uncategorized Income	21,342.50
<b>Total Income</b>	<b>\$411,563.69</b>
GROSS PROFIT	<b>\$411,563.69</b>
▼ Expenses	
Bank Charges	20.00
Benefits	95,446.52
Insurance - Health	3,590.88
Office Expenses	5,175.38
Subcontractors	148,442.82
Taxes & Licenses	4,179.53
Travel	1,000.00
<b>Total Expenses</b>	<b>\$257,855.13</b>
NET OPERATING INCOME	<b>\$153,708.56</b>
NET INCOME	<b>\$153,708.56</b>

## 2. Request for clarification of costs included in the bid

Z2Solutions LLC (Z2) received a request to “An engineering analysis of failing devices including meters, communication modules, and collectors is included in the scope of work under the complete system assessment. Were the shipment of the meters, communication modules, and collectors included in the Bid cost provided?. ” on 19<sup>th</sup> April, 2022.

Because the amount and nature of shipping is unknown at this time, shipping costs were not included in the bid cost provided. A shipping budget can be included. Note also that travel costs were not included but are expected to be billed at cost. Z2 can work with VIWAPA to establish a shipping cost budget in



the early stages of the project as appropriate. Regardless, it is not anticipated that there would need to be a large amount of materials shipped to complete the objectives of the project.

### 3. Request for experience with troubleshooting and/or repairing failing AMI systems

Z2Solutions LLC (Z2) received a request to “Does Burns and McDonnell have experience analyzing, troubleshooting, and/or repairing AMI systems that were in a similar functioning state ( failing meters, collectors, etc. ) as the Virgin Islands Water and Power Authority’s AMI System? “ on 19<sup>th</sup> April, 2022.

Z2Solutions assumes that this was mistakenly identified to Burns and McDonnell and is answering this as if it was addressed to Z2Solutions.

As described below in the answer to question #4, Z2 personnel have worked with Tantalus, as well as all the other major AMI vendors (Landis+Gyr, Itron, Sensus) to evaluate their technologies and provide feedback. Additionally, Z2 personnel were principals of the first 2 fixed network AMI/AMR vendors (CellNet Data Systems (now Landis+Gyr) and TWACS (now Aclara/Hubbell). Consequently, Z2 understands the AMI industry and AMI technologies better than any other consultancy.

Z2 has conducted audits and evaluations with the following utilities to troubleshoot these communications systems and recommend repair or replacement options:

- Clay Electric Cooperative (Keystone, Florida from 2018 and 2021). Clay Electric deployed the IPv6 version of Landis+Gyr which was Landis+Gyr’s first greenfield deployment of this technology. Z2 was heavily involved in troubleshooting the problems with this deployment and identified changes which Landis+Gyr needed to apply to their technology (software or hardware) and new processes for the utility to better identify and resolve these problems.
- Barbados Light & Power Corp (Barbados in 2020). The island of Barbados is rolling out 5G wireless communications and the provider of this service notified BLPC that their AMI solution was interfering with the new towers and would have to be shut down. Z2 conducted onsite studies to prove that the interference was not caused by the AMI solution and was instead caused by the operation of the 5G towers (e.g. they were interfering with themselves).
- Grand Bahamas Power Company (Freeport, Grand Bahamas in 2021). GBPC is implementing the RF Mesh technology from Landis+Gyr. GBPC has been experiencing performance issues in the eastern end of the island and Z2 provided guidance and support in identifying and, subsequently, resolving the performance issues.
- EnergyUnited (North Carolina, US in 2019). EnergyUnited had a mixed technology (part wireless and part power line carrier) AMI solution which was failing due to a number of problems (meter LCDs, excessive meter failures, communications failures, etc.). Z2 analyzed the solution and determined that the existing solution could not be remediated without significant cost and, consequently, required a replacement. Z2 coordinated a procurement effort to replace this solution and provided guidance to EnergyUnited for how to replace an AMI solution with another AMI solution. The issues associated with replacing an existing solution are very different in that deployment needs to be planned more diligently. This is especially true if the replacement solution is a mesh technology. Since VIWAPA likely doesn’t have an existing manual meter reading workforce of any size, the process of new meter sets and meter replacement will need to factor in whether there is network coverage at the location.





#### 4. Request for experience with Tantalus

Z2Solutions LLC (Z2) received a request to “Does ZS2 have experience working with Tantalus?” on 19<sup>th</sup> April, 2022.

Z2 personnel have known and worked with the principals at Tantalus since Tantalus’ founding in 1989. Z2 had annual calls or site visits with Tantalus to review their technology and provide some market assessment during these formative years and had regular contact with the Keith Martin from the technical side to fully understand their technology and provide guidance on the utility AMI market. Z2 personnel were requested to conduct a deep dive review of their Software technology in 2010

Tantalus underwent a leadership change and Z2 is very familiar with this leadership and has worked with Dermot O’Leary (while he was at Schlumberger) and Gerry Kaiser (while he was at Landis+Gyr) and has regular meetings and discussions with them to understand the changes and capabilities of the company.

Z2 personnel assisted Anaheim Utilities in 2003 with their selection of 3 AMI technologies to pilot and their final decision to move forward with Tantalus for their AMI solution in 2004. Anaheim Utilities was one of Tantalus’ first full utility customers. Z2 wrote and oversaw the test plan for all vendors and wrote the final report on the technology (See coverpage and table of contents for this report below, as this report is proprietary work product).

Z2 has conducted several procurement exercises for an AMI solution which have included Tantalus and is, consequently, very familiar with their offerings and the evolution of their technology:

- Chugach Electric – 2014
- Middle Tennessee Electric – 2016
- Snohomish Public Utility District – 2020
- SKELEC - 2022



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# Final Report to Anaheim Public Utilities

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## ***Tantalus Networks***

### **Version Change Record:**

<u>Version</u>	<u>Date</u>	<u>Name</u>	<u>Changes</u>
0.1	06/07/2004	John O. <del>Wambaugh</del>	Outline
0.2	06/22/2004	John O. <del>Wambaugh</del>	Input from Tom and Karen
0.3	09/07/2004	John O. <del>Wambaugh</del>	Input from Tom and Karen. Waited on final resolution of Tantalus firmware problem
1.0	09/10/2004	John O. <del>Wambaugh</del>	Final Version



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