

PUBLIC WORKS COMMISSION
MEETING OF WEDNESDAY, DECEMBER 13, 2017
8:30 A.M.

Present: Wade R. Fowler, Jr., Chairman
D. Ralph Huff, III, Vice-Chairman
Darsweil L. Rogers, Secretary
Evelyn O. Shaw, Treasurer

Others Present: David W. Trego, CEO/General Manager
Jay Reinstein, Assistant City Manager
Jim Arp, City Council Liaison (VIA TELECONFERENCE)
Melissa Adams, Hope Mills Town Manager/Liaison
PWC Staff

Absent: Michael Boose, Cumberland County Liaison
Media

REGULAR BUSINESS

Chairman Fowler called the meeting of Wednesday, December 13, 2017, to order.

APPROVAL OF AGENDA

Upon motion by Commissioner Shaw and seconded by Commissioner Huff, the agenda was unanimously approved.

Prior to approval of Consent Items, Mr. Trego announced the retirement of Dwight Miller, Chief Financial Officer, after 19 years of service to PWC. Mr. Trego expressed his thanks to Mr. Miller. He stated Dwight Miller leaves PWC in perhaps the best financial shape we have ever been in. Mr. Trego stated Dwight Miller has helped staff and Commissioners make good decisions.

Mr. Trego also stated while we search for a new Chief Financial Officer, Rhonda Haskins has graciously consented to serve as Interim Chief Financial Officer until a new one is named.

Commissioners Rogers and Shaw thanked Mr. Miller for his flexibility and outstanding stewardship. Commissioner Fowler stated Mr. Miller has done a great job and thanked him for his service.

Bobby Russell, Human Resources Officer, announced Jason Campbell, the new PWC Safety Specialist.

CONSENT ITEMS

Upon motion by Commissioner Shaw and seconded by Commissioner Rogers, the Consent Items were unanimously approved.

- A. Approve Minutes of meeting of November 8, 2017
- B. Approve bid recommendation to award bid for purchase of 40,000 feet of 750 MCM Underground Primary Distribution Cable, PWC Stock No. 1-065-522 (with option to purchase additional quantities within a one-year period upon agreement of both parties) to Anixter, Inc., Apex, NC, the lowest responsive, responsible bidder in the total amount of \$241,920.00, and forward to City Council for approval.

The 750 MCM Underground Primary Distribution Cable is an Electric Inventory Item.

Bids were received on November 7, 2017 as follows:

<u>Bidders</u>	<u>Total Cost</u>
Anixter, Inc., Apex, NC	\$241,920.00
Wesco Distribution, Inc., Clayton, NC	\$243,040.00
Stuart C Irby, Fredericksburg, VA	\$257,175.00
Shealy Electrical Wholesalers, Greenville, SC	\$286,740.00 *

*Shealy Electrical Wholesalers quoted 40,500'

Comments: Plans and specifications were requested by seven (7) suppliers with four (4) responding. This cable is a regularly stocked electric inventory item last purchased in February of 2017 at a cost of \$5.369 per foot. The current bid price is \$6.048. The cost of this cable fluctuates due to metals pricing.

Local/SDBE Participation: Anixter, Inc. is not classified as a SDBE, minority or woman-owned business. There are no known local vendors who can supply this equipment.

- C. Approve bid recommendation to award bid for the purchase and delivery of all materials, equipment and incidentals for two (2) sets of 69 to 15 or 25 kV Transformer No. 1 Relay Control Switchboards and two (2) SCADA HMI and Communications Switchboards to Keystone Electrical Mfg. Co., Des Moines, IA, the lowest responsive, responsible bidder in the total amount of \$173,936.80, and forward to City Council for approval.

The Relay Control Switchboards and SCADA HMI Switchboards for a 69 to 15 or 25 kV Substation are budgeted in EL31-T/D Differential and Back-up Overcurrent Relay Replacement

Bids were received on November 2, 2017 as follows:

<u>Bidders</u>	<u>Total Cost</u>
Keystone Electrical Mfg. Co., Des Moines, IA	\$173,936.80
Electrical Power Products, Inc., Des Moines, IA	\$177,540.00
SEL Engineering Services, Inc., Charlotte, NC	\$183,532.00
AZZ Enclosure Systems, LLC, Millington, MD	\$184,940.31
KVA, Inc., Greer, SC	\$207,044.00
KEMCO Industries, LLC, Sanford, FL	\$227,174.00

Comments: Plans and specifications were requested from twelve (12) suppliers with six (6) suppliers responding. The lowest responsive, responsible bidder is recommended.

Local/SDBE Participation: Keystone Electrical Mfg. Co. is not classified as a SDBE, minority or woman-owned business. There are no known local vendors who can supply this equipment.

- D. Approve bid recommendation to award bid for purchase and delivery of two (2) ABB 72.5 kV Disconnecting Circuit Breakers for the replacement of the two breakers at PO Hoffer Substation and Murray Fork Substations to ABB, Inc., Mt. Pleasant, PA, the lowest responsive, responsible bidder in the total amount of \$92,800.00, and forward to City Council for approval.

The two (2) ABB 72.5 kV Disconnecting Circuit Breakers are budgeted in EL33 – T/D Sub 66 kV Power Transformer Protection Equipment Upgrade (CPR1000218).

Bids were received on November 9, 2017 as follows:

<u>Bidders</u>	<u>Total Cost</u>
ABB, Inc., Mt. Pleasant, PA	\$ 92,800.00
Wesco Distribution, Raleigh, NC	\$104,500.00

Comments: Plans and specifications were requested by two (2) suppliers with two (2) suppliers. The lowest responsive, responsible bidder is recommended. .

Local/SDBE Participation: ABB, Inc. is not classified as a SDBE, minority or woman-owned business. There are no known local vendors who can supply this equipment.

- E. PWCORD2017-26 – Electric and Water/Wastewater (W/WW) Budget Amendment #2

PWCORD2017-26 is an Electric and Water/Wastewater FY 2018 amendment increasing the Electric Fund \$255,100 to \$253.9 million. The W/WW Fund budget is increasing \$1,076,500 to \$110.8 million.

Electric Fund

- Increase in revenue of \$255,100. Included in this amount, is an increase in Federal Grant revenue of \$213,100 and an increase in State Grant revenue of \$42,000. The increase is due to FEMA and NC Department of Public Safety reimbursement proceeds relating to claims resulting from Hurricane Matthew.
- A transfer to the new Substation Rebuild CPF of \$500,000 to cover the additional cost of property, associated surveys, appraisals and negotiation work for the acquisition of the Sallie Hill Farm property. Funds have been made available by deferring an existing project (CPR1000065 POD V 230-66kV Substation ROW Acquisition).
- A transfer within the Rates Department of \$25,500 from the Electric Fund to the Water Fund for consulting expenses to update PWC's facility investment fees.

W/WW Fund

- Increase in Federal Grant revenue of \$439,600 and an increase in State Grant revenue of \$136,900 due to FEMA and NC Department of Public Safety Hurricane Matthew claim reimbursements.
- Increase in Contribution Revenue and Capital Expenditures relating to the NCDOT Utility Relocation Agreement to relocate a section of sewer main that is along Buckhead Creek. The total expected cost for FY 2018 is \$500,000. NCDOT will reimburse PWC for the cost.
- A transfer within the Rates Department of \$25,500 from the Electric Fund to the Water Fund for consulting expenses to update PWC's facility investment fees.

Staff recommends that the Commission adopt the budget ordinance amendment.

F. Capital Project Fund (CPF) Budget Ordinances

Below are the CPF budget ordinances for Commission action and a summary explaining the purpose for each. The majority of the changes are reallocating bond proceeds to provide funds for the design of Annexation Areas 32 – 34. NCDOT has recently accelerated the I-295 project impacting these areas and caused an acceleration to complete the proposed design by April 2018.

The following ordinances will be effective upon adoption:

- PWCORD2017-27 - Annexation Areas 16-17 CPF is almost complete and is adjusted to its estimated final cost. This releases \$3,372,700 of allocated bond proceeds that will be used in Annexation Areas 18-19.
- PWCORD2017-28 - Annexation Areas 18-19 CPF is amended to add bond proceeds as a partial funding source. This will release \$4,555,000 in committed funds from the Annexation Reserve Fund that will be used towards the new accelerated Annexation Areas 32-34. These proceeds were made available from the amendments to Areas 16-17 and the 2016 W/S Revenue Bond CPF.
- PWCORD2017-29 - 2016 W/S Revenue Bond CPF is also amended to reallocate bond proceeds to Annexation Areas 18-19. This was made possible by delaying

projects that were not in the construction phase. These projects will more than likely be funded by the next bond issuance planned in the Fall of 2018.

- PWCORD2017-30 - Annexation Reserve Fund is amended to decrease its funding to Annexation Areas 18-19 by \$4,555,000 and allocates the remaining funds of \$8 million to Annexation Areas 32-34. This is the current estimate to complete the design of these areas.
- PWCORD2017-31 - Annexation Areas 32-34 CPF establishes the Fund and budget for these areas. Design costs estimated at \$8 million will be performed this fiscal year and construction at a later date.

Staff recommends the Commission adopt the above budget CPF ordinance and ordinance amendments.

END OF CONSENT

4 MONTH (JULY THRU OCTOBER 2017) FINANCIAL RECAP – (Goal #1)

Presented by: J. Dwight Miller, Chief Financial Officer
Brenda Brown, Controller

Dwight Miller, Chief Financial Officer stated he will do the presentation as Ms. Brown is not able to be in the meeting today.

He stated the recap is for four months, ending October 31, 2017. Mr. Miller noted in the budgeting process some expenses do not come in the month projected.

He stated the Electric G&A Expenses are above last year by 17.6%, but under budget for this year. The Electric Other Operating Expenses are down 4.2%. The Electric City Transfer/PILOT is up 0.3%. The Water Sales are up 6.8%. The Waste Water Sales are up 7.2%. The Water/Wastewater G&A Expenses are up 9.8%. The Water/WW Other Operating Expenses are down 2.5%. The Net Bad Debts are just over 0.2%. The Days Cash Reserve is 142.94 days.

Mr. Miller stated our actual Operating Revenues are above budget but less than last year at \$84.3 million. Power Supply and Generation is \$51.1 million, which results in Available Operating Revenues of \$33.1 million. Other Operating Expenses of \$16.1 million results in Operating Results of \$16.9 million which above budget, but less than we were last year. Mr. Trego pointed out that the majority of the Power Supply differential is the Coal Ash settlement. We had to pay the arrears and we are taking it out of Rate Stabilization.

Regarding Electric Purchased Power, Mr. Miller stated the megawatt hour comparison is 2.7% above what it was in 2015. Our cost per megawatt hour is up from the previous year, but it is less than it was in 2015 by 5.4%.

Water Sales Volume – Our volumes are .4% less than last year and .6% less than it was in 2015 in the comparison period. Total Operating Revenues were \$32.1 million. Expenses were \$23.7 million and Operating Results were \$8.4 million. Mr. Miller stated it is greater

than it was last year but quite a bit higher than we budgeted for this time. Staff responded to questions from Commissioners regarding the Operating Results for this time period.

For the Fleet Maintenance results, City Sales are \$1.97 million and PWC Sales are \$775,800; the ratio is 72% to 28%. Operating Expenses are \$3.03 million. The Operating Expenses include parts and labor which are the main drivers in this category. Operating Results are \$-276,500.

Capital and Debt Service is off to a slower start than last year. Mr. Miller stated the numbers are closer as the work begins and as we get closer to the end of the year.

For the Bad Debts, we are down just above .2%. The industry average is .5%. Mr. Miller stated the AMI meters allow us cut meters off quicker, which is reducing our bad debt write-off.

Operating Reserve is 143 days. He stated he expects this number to decrease as we go further into the year.

Mr. Trego stated he has requested for the departments to focus on earmarking expenses for the correct month and not simply averaging them.

INFORMATION SYSTEMS DISASTER RECOVERY UPDATE

Presented by: Susan Fritzen, Chief Corporate Services Officer

Susan Fritzen, Chief Corporate Services Officer, stated we will discuss our status on Disaster Recovery, in particular IS Recovery. She stated when you consider business continuity there are two components to it for an organization. The first is the business side; what do you do with the people and the processes which are done every day? We are working on that already and have completed a business impact analysis. We are now analyzing the results.

Ms. Fritzen stated, today we will focus on Application Data Restoration. She stated the Butler Warner Generation site offers limited disaster recovery. We have data backup and corporate email there. But we know we need a bigger solution and have been focusing on it. We are investigating options for the Disaster Recovery solution as it relates to the IS requirements. She stated this means full replication of the all our systems we have in our data center.

Ms. Fritzen discussed the options below.

Options Analysis

Components	Option 1: Cloud-based Disaster Recovery	Option 2: BWG Plant	Option 3: Co-location in Raleigh Data Center	Option 4: City/County 911 Center
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One Time Costs	None	\$ 420,000 IS Infrastructure & Equipment \$ 175,000 Upgrade Room, HVAC, UPS, etc	\$ 420,000 IS Infrastructure & Equip.	\$ 420,000 IS Infrastructure & Equipment \$ 1,365,877 PWC cost for 1584 sf equipment room (2016 prelim. estimate)
Recurring Costs	\$520,000 Annually for Service \$25,000 Annually for High Speed Link	\$ 10,000 Annual room maintenance cost	\$ 30,000 Annual cost for Co-lo lease \$ 25,000 Annual cost-High Speed Link	\$ 25,000 Annual cost for High Speed Link \$ 10,000 Annual facility maintenance cost
Increase in IS FTE	None	None	None	None
Infrastructure Aging	Vendor bears risk to keep current	PWC bears risk and responsibility – may need refresh every 2-3 years	PWC bears risk and responsibility – may need refresh every 2-3 years	PWC bears risk and responsibility – may need refresh every 2-3 years
Geographical Risk	Very Low – in locations across USA	High in terms of weather and storm path	Moderate – 90 miles away but in same region	Moderate/High – Unknown but local site
Security	Vendor manages physical and IS	PWC manages physical and IS	Vendor manages physical PWC manages IS	County/City manages physical PWC manages IS
Testing of DR Scenarios	More difficult to coordinate virtually. May be limited in number of tests and simulations	Easiest to test multiple scenarios annually	Relatively easy to test scenarios, but may require on-site presence to coordinate	Relatively easy to test scenarios, but may require on-site presence to coordinate
Long term stability	Reputable and stable vendor	Current contract with Duke ends Dec 2023. LT plans for the plant/operations uncertain	Should pick vendor with financial viability and experience in this area	Uncertainty as to the direction and timeline

Ms. Fritzen pointed out the following regarding the above options.

Option 1 - significant recurring costs for worst-case scenario.

Options 2 & 4 - uncertainty introduces too much risk to invest significant infrastructure.

Option 3 - offers most flexibility with reasonable annual costs and ability to migrate to a more permanent location. There is a one-time capital investment of \$420K required. This is an estimate only.

She also noted for **Option 4** there would be an expense of \$1.4 million which would give us 1,500 sq. ft. to locate our equipment. It would be a secured room and no one else would have access to our equipment. The long term stability for each option was also discussed.

Council Member Arp inquired about PWC's timeline. Ms. Fritzen stated we are behind where we need to be. Mr. Trego stated when he had the initial conversation with Kristoff Bauer concerning the 911 Center being a possibility, the Commissioners deferred at that time to see how the City's option would evolve.

Mr. Trego also stated there is one risk that is not on the chart, there is some increased risk in having the back-up center in the same general locale. If we experience a hurricane and if Duke Progress loses its system, we can potentially lose both buildings. Though the chances are "low" with emergency generation, there is still an increased risk. This is why some entities have, as a best practice, that you pick something close but in a different region.

Council Member Arp stated the 911 Center, joint effort is still alive. There is still the potential for funding available. He stated they will press ahead in the attempt to build a 911 Joint Center. He also stated he believes the off-site approach is the better option. He stated if the backup-center is built in Raleigh, there is the possibility a hurricane that affects Fayetteville affects Raleigh also. He believes the remote offsite may be a better solution and may also be a cheaper solution. Discussion ensued.

In response to Commissioner Shaw's question, Ms. Fritzen summarized the options. She stated Option 3 offers the most flexibility with reasonable annual costs and also allows us to migrate to a permanent location. Discussion ensued on locations. Mr. Trego stated the RFQ would not be location specific.

Commissioner Rogers concurred Option 3 is the best option. He also asked inquired about Duke's power supply. If our power goes down, Duke goes down. Mr. Trego stated if we place the back-up center in a remote site and Duke services it, it will be on a different feed.

Mr. Trego stated based on the conversation he believes the direction from the Commission is to keep options open but to pursue Option 3, and the Commissioners agreed.

PRESENTATION OF OPTIONS FOR BUY ALL SELL ALL RATE RIDER FOR SOLAR CUSTOMERS

Presented by: Jon Rynne, Chief Operations Officer, Electrical

Commissioner Fowler stated this presentation is in response to the recent inquiry from Representation Szoka regarding net-metering.

Mr. Rynne stated he was asked by Mr. Trego to compile our buy-all sell-all riders and options for tailoring the program to solar installations. He stated a number of municipal utilities across North Carolina vary with their application of credits for solar production. The credits range from \$.03273/kWh to \$.0616/kWh. The basic customer charge for the sell all metered service varies from \$0 to \$15.00.

Mr. Rynne stated PWC's Buy All Sell All Rider is a bilateral metering scheme. It means you have one meter for generation (on the solar array) and one meter for all power requirements. All the renewable energy generated is metered and credit calculated from the rider schedule. He also stated all power that is consumed is metered and billed at the applicable rate. It is unlike net-metering which cancels each other out; bi-lateral metering separates the two so you can quantify them. Our rider credit is based on wholesale power supply costs. We have avoided energy costs; avoided coincident peak (CP) reduction from solar installations. For Buy All Sell All, we have estimated. The sum of energy and average CP reduction costs make up the rider credit. Currently our rider credit includes those components. Discussion ensued.

Mr. Rynne stated before AMI there was not a good way to really understand the footprint of the solar outputs without having the time element. With AMI we can look at what the array output is during the co-incident peak hour during the month.

Mr. Trego stated when we estimated it there were assumptions we had to make. In the months we assumed, we assumed there was 100% output of the solar panels which is not true. We overstated it in the months when it occurred, but perhaps understated it because some of our coincident peaks in the shoulder months do happen when there may be solar output. It was truly an estimate based on empirical data, but not on what was generated.

Mr. Rynne stated the Buy All Sell All rider is a very low risk to PWC. The calculation of the credit minimizes PWC's risk to lack of performance of the solar arrays during the coincident peak hours each month. The rider is \$0.03734 per kWh.

He also stated we looked a different mechanism to come up with a value for the solar rider. He stated we looked at what Austin Energy and the Minnesota Department of Commerce adopted. It was developed by Clean Power Research. It is a value of solar rider; a bilateral metering scheme. The rider credit is based on a formulaic look at the value of solar.

The following are included:

- ▶ Power Supply cost forecasts
- ▶ Transmission cost forecasts
- ▶ Historic solar production & CP performance of current rooftop solar installations from AMI data. This is new because we did not have access to this in the past.
- ▶ Historic loss calculations from the EIA-861
- ▶ Estimates of Transmission & Distribution capital and growth estimates
- ▶ Estimated environmental cost avoidance based on historic RECS, SO_x/NO_x costs & EIA-861 data

Mr. Rynne stated the Value of Solar methodology is in place at Austin and Minnesota.

Value of Solar Components

Value of Solar Assessment Components

Value Component	Basis
Energy Value	Avoided cost of purchased energy to meet electric loads as well as distribution losses, based on solar production profile.
Capacity Value	Avoided purchased capacity costs by meeting Coincident Peak (CP) load through renewable sources, as determined by historic load profile data.
Transmission & Distribution Capacity Value	Savings in T&D costs resulting from the reduction in Coincident Peak load by renewable sources.
Environmental Compliance Value	Avoided cost to comply with environmental regulations and local policy objectives.

Commissioner Shaw asked if there are a recommended historical number of months, quarters or years that Clean Power Research recommends you gather before you establish what your data is for historic. Mr. Rynne responded no. There is not a recommended time. He stated in each of the other cases they have different formulas based on what their particular utility uses in power supply and their distribution and transmission arrangements. He stated in Austin they started with the data they had. If they had 12 months of data, they based the value of solar calculation on that twelve months and as the years progressed they updated each year. Mr. Rynne stated that is what we are planning to do here at PWC. If we go with an option like this we would establish a formulaic rate that would be updated every year with the data we had from the previous twelve months and the power supply cost forecast we have going forward. He stated unfortunately, like PWC, a lot of the utilities that have residential roof-top solar did not have a lot of data to go on until they had AMI data in place. Mr. Trego stated most of the Value of Solar utilities acknowledge they are one year behind. You are basing the next year's rate on the previous year's data.

Mr. Rynne discussed the Value of Solar formulas. He noted for the environmental value REC Costs are only applicable when the customer allows PWC to utilize them for REPS compliance.

Proposed Value of Solar Rider

- Higher risk to PWC
 - ▶ Risk of difference of forecast Power Supply & Transmission Costs and actuals.
 - ▶ Risk of difference between historic performance of solar to reduce CP demand vs. actual performance

- ▶ 52% of the VOS Rider dependent on CP Demand reduction from solar
- ▶ Load Profile from AMI must be updated annually & utilized to forecast credit for next year
- ▶ Small data set of historic AMI data, 12 customers for 2016
- ▶ Risk could be lower through metering actual Coincident Peak reduction monthly
 - Increases billing complexity & requires monthly manual calculation
- ▶ Estimated VOS Rider Credit w/RECS - \$0.06971/kWh
- ▶ Estimated VOS Rider Credit w/o RECS - \$0.06471/kWh

Discussion ensued on the risks to PWC. Council Member Arp asked if a consumer who has a solar array can receive the value of the historical amount and in the next year we true-up with them. Mr. Trego responded there is a way to minimize the risk difference. He stated part of the reason that we have to go a year behind (and most of the risk is there) is because in December Duke gives to us based on their budget, their estimated power supply costs. We do not true-up with them until the following June. There is a lag in the period of time in our projected power supply costs and our actual power supply costs. He stated the majority of the \$.069 or \$.064 cost is tied to power supply. He stated it is a way to fix that. On our regular customers we have a Wholesale Power Cost Adjustment we can do. If the true-up at the end of the year results in a big credit we can give back to the customers. If it is a cost we have the ability to charge customers to make it up. Additional discussion ensued.

Mr. Rynne discussed the System Average Avoided Cost Rider.

- Bilateral Metering
- Rider Credit Based on Wholesale Power Supply Costs
 - System Avoided Cost : Average forecast total power supply and transmission for coming FY, based upon the historic Energy, CP Demand & Transmission Costs, divided by the estimated total energy (kWh's) to be purchased
 - This average per kWh would be Rider Credit
- Low risk to PWC
 - Average of Energy, CP Demand, and Transmission over total amount of energy purchased lowers PWC risk of the variability of solar to reduce CP demand effectively
 - True Up differential still a risk, but diluted over total kWh's
- Estimated System Average Avoided Cost Rider - \$0.0685/kWh

Discussion began on the Avoided Cost Method. Mr. Trego stated a lot of utilities use this method. It is simple, it is repeatable and Duke uses this method in pricing their solar. The credit per kilowatt hour is roughly the same, the methodology is pretty defensible. The Value of Solar is more leading edge in that it tries to come up with the true value of solar. Commissioner Fowler stated one reason we are looking this because some of the larger stores want to go roof-top solar; they want to go net-metering. Mr. Trego stated staff, from a philosophical prospective, knowing how the Commissioners are taking a look at this, will help us to apply the same methodology to our community solar. It does not have to be identical. It helps staff when we are putting together our offering to customers. Additional discussion ensued.

Mr. Trego stated what we would also do here when we come to the Commissioners with electric rates, we will make this a formula that the Commissioners will approve rather than a rate, similar to the Value of Solar. Every January when we get the Duke estimate we would just plug the numbers into the formula and be able to update it without having to have a public hearing. You would be approving the formula for this particular rate to make it easier to implement on an annual basis.

Mr. Rynne stated the formula for the System Average Avoided Rider, is as follows:

$$\frac{\Sigma(\text{CP Demand Cost} + \text{Energy Cost} + \text{Transmission Cost} - \text{Ancillary Credits})}{\Sigma(\text{Energy Consumption})}$$

Commissioner Fowler asked Mr. Trego if the System Average Avoided Cost Rider is his recommendation. Mr. Trego responded yes, from a simplistic perspective and not wanting to create a completely separate billing system, which is manual and takes a look a coincident peak. He stated if we signed more customers on later, where we would have a bigger data set with the Value of Solar, and where the risks are minimized, we may want to come back to the Commission in the future. Mr. Trego stated he believes now, with twelve customers, it addresses the initial issue that Representative Szoka had. At least we now have the initial information from the AMI meters to make a better determination.

Mr. Trego stated the Value of Solar tries to calculate what we think the ultimate value of those solar panels can provide to us. Since the cost of the Simple method and the Value of Solar method are relatively close, he doesn't see a huge subsidy risk across customers, which has been a concern of the Commissioners. There is basically a synergy there. He stated staff can plug in the numbers every year to ensure there is not a disjoint between the two methods.

Mr. Trego stated he recommends going with the Avoided Cost Method and when we come to the Commissioners with Electric Rates for approval; part of our public hearing will involve a formula for revising the Buy All Sell All rate based on it, if the Commissioners are okay with that.

Council Member Arp asked, since there is so much interest in solar in NC, have we talked to the Department of Commerce or the FCEDC. We have big box stores that are interested in this type of technology, but also leveraging this and our capacity and in what we have in place from an economic development standpoint to encourage businesses to come here because we have system in place, and we just make it part of our package. Mr. Trego stated by updating the rate and increasing it from 3.7 cents to over 6 cents will help and provides an incentive. From an operational standpoint he feels pretty confident there is not a lot of subsidy across customer classes or within customer classes. We are not subsidizing it with the cost we need to operate the business. We are truly giving to them what the value of solar is for us in using the avoided cost methodology. Additional discussion ensued regarding the larger entities over 10 kilowatts.

Commissioner Shaw verified that the word ‘credits’ was not substituted for ‘subsidies’. Mr. Trego stated this is not a substitution. Credits are based on whatever is calculated. He stated that is why keeping the Value of Solar formula is so important. If are able to get rid of some of the risks, and as we grow that group and get more data points, we will know if there is a subsidy that is emerging. He stated he feels relatively confident that within that solar group we are not subsidizing it from customers that do not have solar. He went on to state the variations across the 12 customers that have solar.

GENERAL MANAGER REPORT

Chemours Plant

Mr. Trego stated he has had conversations with then County Chairman Adams and Amy Cannon, County Manager, to see if PWC can be a part of the solution.

He directed the Commissioners to a map that detailed where PWC’s lines end on Route 87. He identified the area where wells have been contaminated. He stated there are some wells in Bladen County that have been impacted.

Mr. Trego stated to get down Route 87 with a main line is roughly 27,700 feet of line. Though we have some distribution in the area it is not robust enough to get a line there. We need to get a main line to the area. Mr. Trego stated for a line that is 8 to 12 inches on a per foot basis, it will cost roughly \$2 million. This is just for the line and not for distribution lines. This is just a rough estimate.

Mr. Trego stated we have other proposed developments that have requested some water service in the Grays Creek area. These are the elementary schools that the County and school district has shown interest in possibly getting water to because there have been small amounts of GENX detected in their water.

Mr. Trego stated there was a study completed in 2009 that looked at what it would take to get water into different areas. He stated this area was one of the areas that were identified. He stated PWC has agreed with the County to have that part of the study that associates with this corridor updated. They have agreed to share the cost of the updated study.

Mr. Trego stated, though this is very preliminary, PWC is hoping to see we can be part of the solution as the County takes a look at the different options for water for their residents. He pointed to an area on the map in Cumberland County that is served by Bladen County Water. He stated at the time the residents needed water, it was too far away so Cumberland gave Bladen permission to serve those residents, but they do not have very robust lines coming across that area.

Mr. Glass stated the well that serves from Bladen County to Cumberland County has shown some contamination.

Commissioner Rogers asked how long it would take to get water down there. Mr. Trego stated one thing that would speed up the project is Design-Build. The County is taking a

look at funding sources. Some of the answers will come when we know if there are restrictions on how we have to bid it. Mr. Trego stated designing a line 28,000 feet down a state road is not something that can happen quickly. Mr. Glass stated it would be two years at best. He also stated he met with the County and they have employed a local firm to begin the preliminary evaluation of extending water down there. They are waiting for their preliminary numbers to come back. Discussion ensued regarding Chemours, and rural systems.

Commissioner Huff asked if there is any possibility of PWC going after a Farmers Home loan. Mr. Trego stated the County is looking at that option. It is part of the options we need to investigate.

Commissioner Huff stated he received a call from a developer who is doing work in the area (Route 87). They are being required to go from a 6 inch line to an 8 inch line because of its approximation to the current line. He asked if this is something that PWC picks up the difference. Mr. Trego if it is done for our benefit, then we will enter into a participation agreement with the developer. If it is because of a fire-flow requirement, then the developer would bear the cost. Mr. Brown stated we received an official request for participation agreement from the developer today. Discussion ensued.

Mr. Trego stated the Commissioners have had as a goal of promoting the municipal power story of PWC. He stated Carolyn Justice-Hinson has done a wonderful job of scheduling him. He has spoken to three Kiwanis Clubs, the Rotary Club, the Hope Mills Chamber of Commerce and Mr. Rynne has also stepped in to speak to an additional Rotary Club. Mr. Trego stated he expects to receive more requests. The speaking engagements have been very well received.

Commissioner Huff stated he has received a letter from the president of the Summertime Homeowners Association. He states the water level in their lake is dropping when it is not going over the overflow or through the gates. The letter states there is a PWC line under the lake and he (the president of the association) believes we may be draining the lake. Mr. Noland stated he has no knowledge of that but will check on it.

(Brief break)

PRESENTATION BY GDS ASSOCIATES

Presented by: Chris Dawson, GDS Associates

Mr. Trego stated PWC is engaged in exploring our long-term power supply options. Our current contract with Duke Energy ends in 2024, but we have a notice period. We need to begin to evaluate our different options. Mr. Trego stated GDS Associates are assisting us. *He reminded the Commissioners a portion of this presentation will be in closed session.*

GDS Associates presented to the Commission an informational presentation on the evaluation of power supply options and generation portfolios to serve PWC customers

beyond the 2024 early termination period for PWC’s existing Power Supply & Coordination Agreement with Duke Energy Progress.

Mr. Dawson stated there are many options available today that can be used to produce power, from modular nuclear units to advanced sophisticated coal plants that convert coal into gas. He also mentioned traditional gas fired resources (combined cycles and combustion turbines), to include renewable resources. He stated they began with a wide net, gathering a lot of data to pull into the study to have a good starting point.

He stated several things became clear. PWC would not need to pursue a very large project (500-1000 megawatts). He stated it also applies to large combustion turbines which are used to cover the peaking portion of our load. Mr. Dawson stated we have also excluded looking at wind and solar options. It is not to suggest we will not install or pursue renewal resources in the future.

Mr. Dawson discussed PWC’s Load Duration Curve.

- Base load resource need is approximately 150 – 200 MW
- Intermediate resource need is approximately 100 – 175 MW
- Peaking resource need is approximately 150 – 225 MW (including planning reserves)

Mr. Trego stated, prior to our current contract, we had another power supply contract with Duke that in a different way used this same model. We would buy our base load from Duke only. We had a contract for our base load. On a daily basis we would go into the market for our intermediate resources based on the current market price. We would use Butler Warner for our peaking resources.

Mr. Dawson discussed generation technology, which included reciprocating engines; community solar; and retail customer generation. He also discussed conventional technology, which included combined-cycle; combustion turbines; and Butler-Warner repowering.

He discussed potential base load resource alternatives which include:

Supplier	Capacity	Contract Type	Description
1. NTE	475 MW	Hybrid PPA	Unit(s) contingent PPA with ability to provide full-requirements and some market access optionality
2. Southern Company	150 MW	Hybrid PPA	Unit contingent PPA with ability to provide partial-requirements
3. Combined-Cycle	300 – 400 MW	JOU / Sole Owner	Potential to develop as Jointly Owned Unit or as solely owned

He also discussed potential intermediate resource alternatives, which include:

Supplier	Capacity	Contract Type	Description
1. LM 6000	60 MW	Sole Owner	Unit contingent
2. LMS 100	96 MW	Sole Owner	Unit contingent
3. Southern Company	150 MW	Hybrid PPA	Unit contingent PPA with ability to provide partial-requirements
4. Butler-Warner Repower	210 MW	Sole Owner	Refurbished LM 6000 units and HRSGs. Assumes reuse of steam turbine generator and existing steam cycle equipment.

Mr. Dawson discussed potential peaking resource alternatives, which include:

Supplier	Capacity	Contract Type	Description
1. GE 7E CT	94 MW	Sole Owner	Unit contingent
2. Reciprocating Engines	8–18 MW	Sole Owner	Unit contingent
3. Southern Company	150 MW	Hybrid PPA	Unit contingent
4. Butler-Warner Repower	210 MW	Sole Owner	Refurbished LM 6000 units and HRSGs. Assumes reuse of steam turbine generator and existing steam cycle equipment.
5. Butler-Warner (Existing)	180 MW	Sole Owner	Unit contingent

Mr. Dawson discussed how they approached the evaluation of the Resource Portfolio Alternatives.

1. Combining appropriate resource type and need to meet PWC’s overall capacity and energy requirements
2. Selecting most economical, feasible base, intermediate, and peaking resources
3. Simplified assumptions for certain technical aspects, such as:
 - a) No issues with transmission & pipeline interconnection;
 - b) Transmission service availability and deliverability;
 - c) Firm natural gas service;
 - d) Resources always available (no maintenance outages);
 - e) Financing available for all ownership options.

Commissioner Rogers motioned to go into closed session pursuant to NC General Statutes 143-318.11 (1). Motion was seconded by Commissioner Huff and unanimously approved at 10:03 a.m.

After discussion, Commissioner Rogers motioned to return to open session at 10:42 a.m. Motion was seconded by Commissioner Shaw and unanimously approved.

Mr. Dawson recommended the following: begin discussions with select suppliers; look at possibility of extending the life of Butler-Warner (how it would operate); complete detailed analysis. Conclude Phase II by June 30, 2018, with a decision if we need to issue an RFP.

Commissioner Shaw motioned to accept and approve the Phase II Project for the GDS Agreement. Commissioner Rogers seconded the motion and it was unanimously approved.

Mr. Dawson gave a timeline for Phase II. He expects to come before the Commission again in June of 2018.

REPORTS AND INFORMATION

Commissioner acknowledges receipt of the following reports and information:

- A. Personnel Report for November 2017
- B. Position Vacancies
- C. Approved N.C. Department of Transportation Encroachment Agreement(s):
 - Encr. #18620 – 8” RJD line and 16” steel casing @ US HWY 401 nr. Ramsey St.
- D. Actions by City Council during meeting of November 13, 2017, related to PWC:
 - Approved Bid Recommendation to Award Contract for North Fayetteville Water Systems Improvement Contract 2: Water Transmission Main Project
 - Approved Bid Recommendation to Award Contract for the Legion Hills Outfall and New Pinewood Drive Lift Station
 - Approved Bid Recommendation to Award Contract for Sewer Main Rehabilitation Work for Fiscal Year 2018
- E. Financial Statement Recaps as of October 31, 2017
 - Electric
 - Water/Wastewater
 - Fleet Maintenance Internal Service Fund

ADJOURNMENT

There being no further business, upon motion by Commissioner Rogers, seconded by Commissioner Shaw and unanimously approved, the meeting was adjourned at 10:45 a.m.