

March 27, 2013

To the Members of the Pemberton NJ Borough Council

For Presentation at the April 15, 2013 Meeting

Ladies and Gentlemen of the Council

It is my intent to read and distribute the following material at the regularly scheduled meeting of the Borough Council on April 15, 2013. This discussion responds to the Legal Council statements and demonstrates how the Borough Council is making an excessive profit at the expense of Resident Consumers residing within it's community who have elected to install Solar Generators.

The discussion provides justification for the Pemberton Borough Electric Department to charge a fixed and equitable fee to all it's customers covering the cost of maintenance and improvement of the infrastructure associated with the distribution of electric energy. This fee is generally called a "Delivery" charge and would be the same for Solar and Fossil Fuel customers. The Pemberton Borough Electric Department could then implement "net metering" for solar customers without the concern that the community is "underwriting" the use of those systems. This would be fair to all consumers including those who elect to install solar energy generation.

The following is respectfully submitted,

A handwritten signature in blue ink that reads "Bruce T. Buzalski". The signature is written in a cursive style with a blue highlight effect.

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## Financial Analysis

### The impact of Solar Installations in the Borough of Pemberton, NJ

The Borough Council of Pemberton has decided that they will not "underwrite solar installations" by using "net metering" but instead will pay for the installations "excess" electricity at the same rate that they pay for energy from their supplier (\$0.04-\$0.06) starting in June of 2014.

"Net Metering" is the practice of, in effect, using a single meter that runs backwards, providing a credit for energy created and a debit for energy used. It is the same as having two meters and measuring the energy produced and sent to the grid and the energy consumed from the grid and billing the difference.

The Term "Excess Electricity" seems like a very simple term. It is not. A solar installation is designed to produce no more than 70% of the total annual consumption prior to the installation. With that guideline there is NO excess energy produced. The other way of looking at it is when the solar system is generating more than it can use at that moment in time, the "Excess" is delivered to the grid. In normal operation, the consumer can use 25% or less of the energy produced. Therefore 75% or more goes into the grid. The Borough refers to any energy going into the grid as "excess". That energy is what would be used by the consumer at times when the sun doesn't shine.

The Borough feels that if it uses Net Metering, it will be providing it's infrastructure (for delivery of energy) at no cost to the Solar Customer. There is no argument with that statement. The town could solve the problem by fairly and equitably charging all consumers for that overhead at a fixed monthly fee just as they currently charge a \$7 fee to cover the cost of meter reading and billing. Their current practice is to bury the "delivery" cost in the charge per kWh which increases the burden on those who use more power.

Lets look at the annual Borough Profit for the three scenario's; no solar, Solar with Borough Plan and Solar with Net Metering. The chart below compares the Borough Profit and the Resident Consumer's Cost for one year.

Plan	Relative to No Solar			
	Borough Profit		Consumer Cost	
	Total	gain/(loss)	Total	gain/(loss)
No Solar	\$790	\$0	\$2,174	\$0
Boroough Plan	\$1,676	\$885	\$2,898	\$724
Net Metering	\$237	(\$553)	\$1,897	(\$277)

For the same residence and constant power usage, the Borough annual profit increases by **\$885** for a solar installation when using the Borough Plan and decreases by **\$553** if net metering is used. The Resident Consumer Energy costs increase by **\$724** using the Borough Plan and decrease by **\$277** using net metering

The Pemberton Borough Electric Department has gone to great lengths, paying legal fees to have their ordinance revised to avoid the loss of income resulting from solar systems. What they have done is unfairly increased their income through these revisions at the

expense of anyone with solar systems installed. This is a far greater cost than if a fixed Delivery Fee were charged to all customers

### **Response to the Borough Legal Council's comments**

It is the intent of Solar systems to provide clean energy passively to reduce the countries reliance on other forms of energy. Incentives are associated with this in the form of tax deductions and SRECS (Solar Renewable Energy Credits) which are currently valued at about \$0.01 per kWh or less. As the number of solar and wind systems increase, there are issues being addressed to assure that the grid remains balanced at all times. This issue will be resolved in time and is not a detractor from the need for clean energy. It is more a political argument supported by those who have the potential to lose profit as these systems proliferate.

### **The Borough's current practice.**

The PBED currently installs two meters on a residential SGE. One meter measures the energy used. The other measures the energy returned to the grid. As previously demonstrated, this results in doubling the of the amount of energy sent into the grid cost for the residential SGE. The PBED profits significantly from this process. The residential SGE suffers an unfair loss. It is for this reason the the major electrical distribution companies use "Net Metering". It is not their intent to underwrite the cost of the system installation.

### **Response to Council's Arguments**

The council states that the Solar Customer wants to be paid for their "surplus energy". That statement is misleading and incorrect. First, SGE does not create "surplus" energy. The systems are designed to produce 70% of the residents total annual usage. At any one point in time (over seconds, minutes, hours) the SGE may produce more than the residence can use within that time interval but subsequently there are intervals where more energy is required than can be generated. All the energy produced is therefore needed in the systems operation.

The Council states that a Battery "Analogy" is incorrect because energy is not stored "in the grid". The analogy is using an example that has some similarities to the original in order to make a teachable point. It was never stated that "the Grid stores energy" but that the grid is used "LIKE", "AS IF IT WERE" a battery in that energy is put in and energy is removed. If water is taken from a river, used and returned the net effect on the over all flow of the river is zero. Other customers on the river are in no way burdened by the usage. The total energy flowing through the PBED's meter from their provider will be the same as it would have been had the SGE not introduced power to the system. There is no cost to the PBED or its customers.

Since the PBED is "Purchasing" the energy produced by the SGE at "their whole sale electric cost" they are admitting that they are indeed benefiting from the energy provided. Mr. Jablonski from the NJ Association repeatedly stated incorrectly that Solar Energy goes into the grid and can not be followed. It's net effect can be measured. The BPED, having purchased the energy, is selling it to their customers at the full standard rate. The BPED is benefiting from that energy and incurs no cost from their supplier and no transmission costs. When the SGE customer takes the energy from the PBED the net

effect is the same as if the other customers had called for that energy rather than use the Solar Energy provided earlier.

The SGE is not requiring the PBED to purchase the energy sent into the grid as inferred by council. The PBED has made that demand. The SGE simply asks that the PBED return the equivalent energy without prejudice. The PBED has already recorded the use of the energy on customers meters and thereby establish an income stream from energy that cost them nothing. As for the SGE, the Council was correct in stating that what is being represented is a "Net Meter", that is a device that records the difference between the energy taken from the grid and the energy sent to it.

A SGE would be willing to pay a fixed monthly fee that represents the fair overhead for maintenance of the lines, poles and equipment associated with the distribution of power within the Borough. This fee is independent of the amount of energy consumed and can be viewed as a connection charge. The Borough already has a charge to cover reading and billing. The public utilities currently identify such charges on their customer statements. PBED currently buries that charge in their rate penalizing customers who use greater amounts of electricity. The Public Utilities have separated these charges in their billing.

### **In Summary**

PBED or their customers are not subsidizing the installation of a Solar System. What is happening is that the PBED is purchasing less energy because these systems are being installed. That does impact their bottom line by the amount of profit they would make and it is for this reason alone that the Borough is doing everything it can to discourage the installation of Solar Energy Systems. The Borough is in fact penalizing solar installations because of their policy.

In this writers opinion, the Borough has no business being an energy provider. There was a time when generating facilities were owned and operated within the Borough. That is no longer the case. The Borough is simply purchasing energy and resupplying it to it's customers. It is no longer providing a value added. There was some merit to being the provider when it could be done at a lower cost than provided by the public utilities. The cost to a customer in the Borough now is much higher than it would be otherwise.

The profit from the resale of the power is being used to underwrite the general fund, which is just another way to get around the cap on the increase in property taxes. They are currently attempting to do the same thing with garbage collection. How much will we have to pay for electricity and other services if they continue playing this game?

### Financial Analysis of Pemberton Borough Solar Energy Policy

\$0.22	Borough Customer pays for Energy
\$0.14	Borough Cost per kwh delivered
\$0.08	Estimated Borough Profit per kwh
0.04	Borough Pays for Excess Energy
0.22	Borough Sells Excess Energy
0.18	Borough Profit on Excess Energy
\$ 84.00	Borough Service Charge (annualized)
\$ 25,000.00	Consumer 20 year Solar contract cost
\$ 1,250.00	Annual cost of the contract
\$ 0.18	Cost of generating 1 kWh of solar
9880.6	kWh used each year
6916	kWh Solar Produced each year
1383	kWh of solar used
5533	kWh of Solar Energy sent to the grid per year
8497	kWh needed from the grid each year
2964	kWh Net each year
	<b>Annualized Borough Plan</b>
8497	Energy delivered
5533	Energy Received
\$ 221.33	Borough Paid to Producer
\$ 1,217.29	Borough Sells Excess Energy to other Customers
\$ 995.96	Borough Profit from Excess Energy
\$ 679.79	Borough Profit Energy Delivered
\$ 1,675.75	<b>Total Borough Profit</b>
	<b>Annualized Borough Net Metering</b>
8497	Energy Delivered
5533	Energy Received
2964	Net Energy Billed
\$ 652.12	Total Borough Bill
\$ 237.13	<b>Total Borough Profit</b>
	<b>Annualized Borough No Solar</b>
9,881	kWh Billed
\$ 2,173.73	Total Charge
\$ 84.00	Service Charge
\$ 790.45	<b>Total Borough Profit</b>
	<b>Annualized Consumer Cost Borough Plan</b>
\$ 1,889.41	Cost of Energy Delivered
\$ (221.33)	Energy Purchased by Borough
\$ 1,250.00	Cost of Energy Produced
\$ 2,898.08	<b>Total Cost of Energy</b>
	<b>Annualized Consumer Cost Net Metering</b>
9880.6	Total Energy Consumed
6916	Total Energy Produced
2964	Total Energy Purchased from Borough
\$ 1,244.96	Cost of Energy Produced
\$ 652.12	Cost of Energy Purchased
\$ 1,897.08	<b>Total Energy Cost</b>
	<b>Annualized Consumer Cost No Solar</b>
\$2,173.73	<b>Total Energy Cost</b>