



PMAI Newsletter

Every generation has some fool who will speak the truth as he sees it! Boris Pasternak

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MORE ON MERALCO AND ITS ELECTRIC BILLING

TIPS ON

ELECTRICAL ENERGY

COMPRESSED AIR

- Every 5°C reduction in intake temperature would result in 1% reduction in compressor power consumption.
- Compressed air leak from a 1 mm hole size at 7 kg/cm² pressure would mean a power loss equivalent to 4500 KWH per year.
- A reduction of 1 kg/cm² of air pressure (for instance from 8 kg/cm² to 7 kg/cm²) would result in a 9% input power savings.

REFRIGERATION-

- Refrigeration capacity is reduced by 6% for every 3.5°C increase in condensing temperature.
- Reducing the condensing temperature by 5.5°C, results in a 20-25% decrease in compressed power consumption.
- A reduction of 5.5°C in cooling water temperature at the condenser outlet, reduces compressor power consumption by 3%.
- A 1 mm. scale build-up on the condenser tubes can increase energy consumption by 40%.

LIGHTING-

- Ensure proper illumination and efficacy (lumens/watt).
- Install photocells.
- Use timers.
- Retrofit occupancy sensor.
- Use servo-stabilizer in the lighting circuit.
- Replace High Pressure Mercury-Vapor lamps with High Pressure Sodium-Vapor lamps.
- Replace conventional chokes with electronic chokes.

Consumer group hits multiple taxation in Meralco bills

By Jerome Aning

Philippine Daily Inquirer

First Posted 19:37:00 05/07/2008

MANILA -- "A tax on tax?"

This question was poised on Wednesday by the consumer group People Opposed to Warrantless Electricity Rates (Power) as it assailed the Manila Electric Co. (Meralco) for its "unjust and outrageous" computation and collection of Value Added Tax as reflected on the company's monthly electricity consumption bills.

In a statement, Power convener Ramon Ramirez questioned the application of the VAT on items such as the franchise tax and systems losses.

"It's like having a tax on a tax. The 12-percent VAT is levied on the franchise tax when the latter is computed as part of the distribution revenues and subsidies. In effect, the franchise tax is also taxed," Ramirez said.

The "distribution revenue and subsidies" item, he explained, is computed by adding the distribution charge, metering charge, supply charge, lifeline subsidies and the local franchise tax. A 12-percent VAT is then computed from the amount.

"This really doesn't make much sense for consumers, to be taxed twice. This adds justification for our earlier calls to scrap the VAT on power rates. This will certainly save consumers a significant amount," Ramirez added.

Power also questioned the rationale of charging the VAT on systems losses, a component of the Meralco bill.

"Systems losses are not exactly services rendered. They are costs that a distribution utility recovers from consumers because of pilferage and other inefficiencies in the system of delivering electricity. There is again an injustice here," Ramirez said. "We are being charged for a company's inefficiency, then that same charge is taxed

by government. It's a double whammy," he added.

Ramirez cited a sample bill for a consumer using 293 kWh who he said would be entitled to almost P469 in savings a month if the VAT on power is removed.

"This would be a big relief for consumers. Why doesn't the government consider this proposal as an initial big step in lowering power rates?" he asked.

Solon wants law on power systems losses repealed

INQUIRER.net

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MANILA, Philippines -- An administration lawmaker on Wednesday proposed to repeal a 1994 law that allows electricity distribution utilities like the Manila Electric Co. to pass on systems losses to consumers. Manila Representative Amado Bagatsing filed Wednesday House Bill 4073, which seeks to repeal Republic Act 7832 or "Anti-Electricity and Electric Transmission Lines/Materials Pilferage Act of 1994," in an effort to bring down power cost. Bagatsing noted in the bill's explanatory note that distribution utilities, through the present law, repeatedly pass on to consumers 9.5 percent of their systems losses but still fail to put up controls to stop electricity pilferage.

"One of the factors in determining eligible cost of services that will be passed on to the end-users is the inclusion of systems losses... consumers had been hard hit as this component is a big percentage in their monthly bills," the lawmaker said. The Philippines has the highest electricity rates in Asia, costing to about 67.17 centavos per kilowatt-hour. **Mark Ching, contributor**

Nograles backs Santiago for joint probe on Meralco

INQUIRER.net

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MANILA, Philippines -- Speaker Prospero Nograles is supporting Senator Miriam Defensor-Santiago's proposal for a joint congressional investigation of the Manila Electric Company (Meralco), hoping that this "could be the beginning of a better relationship" between the two chambers.

Nograles said that the joint inquiry could minimize gridlocks in formulating different measures, especially on issues about wages, food, fuel and electricity.

"These are the issues that have a direct impact on our people. Coming out with pieces of legislation which are products of cooperation and partnership between the two chambers will hasten their passage into law," said Nograles.

From Santiago's proposal, Nograles said that the Senate and the House of Representatives should conduct more joint hearings on issues of "mutual interest" which would include food, fuel, and energy in order to avoid redundancy and at the same time, save time and money for the two chambers and their potential resource persons.

"I support Senator Santiago's proposal to conduct joint hearings by the energy committees of the House and the Senate regarding Meralco to avoid redundancy," said Nograles.

Expressing alarm over the continuing increase in fuel prices in the world market, Nograles said, "This proposal of Senator Santiago is most practical for Congress, their resource persons and the consuming public. It's a faster way to resolve issues and make the necessary laws or amendments to existing laws on oil and energy."

Nograles said this as he ordered the House committees on energy chaired by Pampanga Representative Juan "Miguel" Arroyo, ways and means under Antique Representative Exequiel Javier, labor under Valenzuela Representative Magtanggol Gunigundo, agriculture chaired by Palawan Representative Abraham Mitra, and agrarian reform under Apayao Representative Elias Bulut to work together and "make sure that all issues with respect to energy and food production will be immediately addressed."

With the global food and energy crisis, Nograles said that the joint investigation on Meralco was consistent with Congressman Arroyo's decision to hold a congressional hearing, in aid of legislation, into alleged overcharging by Meralco.

The proposed amendments to the EPIRA law to accelerate the implementation of re-

tail competition and open access in the electric power industry have been pending for plenary debates at the House.

The energy committee is also deliberating and consolidating 14 related bills that focus on the development and promotion of renewable energy resources in the country.

The panel has also received several bills that seek to speed up the development of the natural gas industry in an effort to minimize the country's dependence on imported oil.

Abigail Dy, Contributor

FOR YOUR INFO — HERE'S OUR TWO CENTS' WORTH

J. H. Bautista—PMAI Tech. Consultant PARADOX OF ELECTRIC BILLING

1. The electric power generators insist on billing customers for "**electric power they generated, but which was not used**" by the customers.
2. The rationale is that they generated it, so customers should be billed for it, regardless of the fact that the customers did not use it.
3. Now take the example of a passenger ship with a capacity of 500 passengers, if the load was only 300 passengers in one trip, short of 200 passengers, should the ship charge the 300 passengers extra for the shortage of 200 passengers? Obviously NOT!
4. **Herein lies the paradox:** Why should an electric power generator charge for electric power that was not used? Could they supply the required power without generating the excess power? And where does the excess power go?
5. **And here is the answer:** Actually, the excess power does not leave the generator unless it is extracted for use by the customers; and when the generators are operating at less than full load, the fuel consumption is lowered correspondingly. This is similar to an automobile that is running at 60 km/hr not consuming the same amount of fuel as when it is running at 100 km/hr. Should one be penalized if one is not running at 100 km/hr? And running at 100 km/hr has its attendant, built-in cost of higher fuel consumption; not a separate incurred cost.
6. **Additionally:** The electric power generator cannot, and should not, claim that they have to have oversized generating equipment to be sure of meeting the needs of their consumers. It is standard business practice that the depreciation charges of all equipment should and are actually factored into the

energy charges. So these are well taken care of. As when the car was bought, the excess power was inherent to the car and depreciation charges took this into consideration.

7. **And this is my perception:** During the power crisis of the early-1990s, the prospective investors in new power plants took advantage of the government and eked out a contract from a naïve and unsuspecting government with the myth and fallacy of what they should do with the excess power they generated if the load was less than 100 percent. And the government bought the given rationale and acquiesced. Now the customers are sadly being overcharged with the consent and sanction of the government. Everything is quite legal!
8. **Now for the real nature of system losses:** In the transmission of electric power, there is a power loss **inherent** to the system that is caused by the "resistance" of the transmission wires and "nature" of the power transformers and other electrical equipment. This loss is manifested by the heat it generated and is measured by the formula: $P_L = I^2 R$ (where P_L is power loss, I is current, and R is wire resistance) in the case of transmission lines. Note that if the current is halved ($I/2$), the power loss is lowered to only 25% ($I^2 R/4$; where I' is $I/2$). The other formula on power usage, $P_U = VI$ (where P_U is power used, V is the voltage, and I is the current), shows that for a given power usage, current varies inversely as the voltage. Therefore, to halve the current, simply double the transmission voltage. There is really no mystery to this. However, **losses due to pilferage are never, never considered part of system losses.** This is mainly because these are dependent on the power utility's management efficiency and effective control of pilferage.
9. **Unsolicited Suggestions:** Do away with "demand charges," "PPA charges," and "pilferage loss charges" and do not pass on to the consumers these mythical and extraneous charges. Determine the approximate system loss (power line transmission loss plus transformer and other equipment losses and predetermined losses due to "leakage and disturbances") based on the value of the current of transmission and the transmission wires' resistance — and perhaps increase the transmission voltage to be compatible with the economics of the system; noting that "**The most economical area of conductor size is that for which the annual cost of energy wasted is equal to the interest on that portion of the capital**

outlay which may be considered as proportional to the weight of the conductor used.”

ELECTRICAL POWER SYSTEM LOSSES

Power system losses may be classified into four categories. Three of them are “inherent in the design of the system” which good electrical engineering practice should be able to minimize; while the fourth category, which could be the biggest, is entirely dependent on good utilities’ management. These are:

1. Those that are inherent in the system and called “**transmission losses.**” These are caused by **limitations in the design of the transmission lines** and the major line loss is due to the current and size of transmission wire used, signified by $P_L = I^2R$ (where P_L is power loss; I is the current, and R is the resistance of the wire). The squared I indicates that this type of loss can be minimized by reducing the current passing through the system. The current can be reduced by raising the transmission voltage as shown by the formula: $P_U = VI$ (where P_U is the power

used; V is the voltage; and I is the current). Note that V and I are inversely proportional for a given power usage. This may be passed on to the consumers as a **standard fixed percentage** of the load of the transmission system as used by consumers.

2. Those that are due to “**leakage**” caused by the **characteristics of the equipment and the design of the whole system.** These may be called “inherent” to the system **after the design is made**; but it should be realized that they could be minimized or avoided during the design stage of the system. This may be passed on to consumers as a **fixed percentage of the load the whole system** as determined by the electric generating and transmission companies.
3. Those that are called “**system disturbances**” which are due to **oscillations and surges** in the system. Disturbances may be produced by causes within the system itself, such as switching, grounds, or changes of load; or may be cause by external causes, such as lightning. This type of loss may be passed on to consumers as a **fixed predetermined percentage of the load** as affected by the prevailing weather

condition; although, prudent management dictates that these kind of losses can and should be minimized, especially during the design stage.

4. Those that are due to “**pilferage**” by **unscrupulous consumers who try to beat the system.** This type of loss can and should be minimized by astute management and control of operations. This cannot and should not be passed on to consumers as this is part of the efficiency of management of the electric power companies. Management inefficiency should never be rewarded; rather it should be minimized or entirely eliminated.

N.B.: The foregoing explanations are given just in case the PMAI would like to take a stand on the on-going controversy about electric billing. It is a fact that the exorbitant electric power costs are preventing the industry from competing in the global market, let along the domestic market vis-a vis the Chinese castings. Please note the following schedule of energy charges and demand charges that MERALCO has been charging us.

GIVEN BELOW IS A REPRODUCTION OF THE STATISTICS THAT MERALCO SUPPLIED YOURS TRULY —



SUMMARY TABULATION BASED ON DATA SUPPLIED BY MERALCO IN 2007 (1985 - 2007):

I t e m	1985	1995	2005	2007
Energy Charge per KWH used	P1.79	P2.94	P6.89	P6.43
Demand Charge per KW max. demand	P12.60	P25.00¹	P382.00²	P542.00³

Note: ¹ By **April 1997**, this was increased to **P220.00 per KW** maximum demand.

² This is an average figure (P366.32 to P406.12) as the demand charge was now based on the input voltage.

³ The average demand charge for the year **2006** was **P429.39 per KW** maximum demand.

 This is a very effective way of killing industries in the Philippines. Should the PMAI not take a stand? 

Just asking!!!