

IMPLICATION OF SUSTAINABLE ENERGY TO CONSUMERS AND ELECTRIC COOPERATIVES

IN TERMS OF SUSTAINABILITY

- **SOLAR**

- Operating power dispatched only during day time.

- During cloud shading – no frequency controller – grid.

- It will cause disturbance to grid power availability.

- **BIO-MASS**

- Availability of fuel (Rice hush, Coconut hush, woody materials, etc..)

IN TERMS OF INVESTMENT

- **SOLAR**

- High Cost (1 mega watt = 1.2 hectares of land area)
- 10 Mega watt – costing US\$15M

- **BIO-MASS**

- 1 metric ton = ??? mega watt produced

IN TERMS OF INVESTMENT ...

Maximum Power Output	Estimated Project Cost
25 kW	£169k
50 kW	£300k
100 kW	£529k
250 kW	£963k
500 kW	£1.6M

IN TERMS OF RATE

- **SOLAR**

- Approved ERC rate – PhP8.69/KwH
- Rate is not competitive in open market (WESM) – P3.00/KwH

- **BIO-MASS**

- ERC approved rate – PhP6.5969/KwH

- **RUN-OF-RIVER HYDRO**

- PhP5.8705

Weight measure – amount of wood measured in pounds or tons (Kg or mt)

- Green Ton (GT) = 2,000 lbs of fresh cut woody material at a “green” moisture content
- Bone Dry Ton (BDT or DT) = 2,000 lbs of woody material at 0% moisture content
- Bone Dry Unit (BDU) = 2,400 lbs of wood chips at 0% moisture content

Electricity Factors (BIOMASS)

When woody biomass is utilized in a commercial (10+ MW electrical output) scale power generation facility the following energy output rules of thumb apply:

- 1 BDT woody fuel = 10,000 lbs. of steam
- 1 megawatt hour (MWH) = 10,000 lbs. of steam
- 1 BDT woody fuel = 1 MWH
- 1 MW = 1,000 horsepower
- 1 MW = power for approximately 750 to 1,000 homes annually

CHARACTERISTIC OF ECs

Payment collected from member-consumers and how it was distributed:

- Power Generators - 57%
- 13 types of taxes - 15%
- NGCP - 12%
- Subsidy – Life liner/SS - 0.6%
- ERC: Re-investment Fund - 2.4%
- Total - 87%

ALTERNATIVES