Ghana's Renewable Energy Bill

The Case of the Feed in tariff: Issues, Challenges and the way Forward.

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RE *tend to be debated under different arguments. One argument is that the market is not producing what the system needs. This is an interesting argument, as markets in other commodities are usually praised for delivering what the consumer wants and what the market needs. It should therefore follow that if the market is not producing renewable, then the market is not seeing that there is a need for renewable. Is that thinking right? What should be the solution be?*

Outline of Presentation

- Introduction
- Potential for RE in Ghana
- RE Policy commencement in Ghana
- Feed-in-Tariff system
- Challenges
- The way forward

Potential for RE in Ghana

- Biomass resources cover about 20.8 million hectares of landmass of Ghana.
  - 60% of energy supply
- Vast land for cultivation of crops for biofuels
- Solar radiation level estimated at 4-6kwh/m2
- Average wind speed of 9m/s

Renewable Energy Policy

- Establishment of Energy Commission in 1997
- Establishment of PURC
  - Integrate RE into the power Sector
  - Design regulatory framework
  - Responsible for Issuing out generation licenses
  - Development of appropriate feed in tariffs

Feed-in-Tariff Scheme(Clean energy cash back)

- The feed-in-tariff scheme consists of:
  - (a) the renewable energy purchase obligation;
  - (b) the feed-in-tariff rate; and
  - (c) a connection to transmission and distribution systems.

Renewable Energy Purchase Obligation

- Supplier/Distributer to purchase specified amt of RE
- The % level is determine by the PURC/EC
  - Technology in Generation
  - Financial integrity of the public utilities
  - Effect of cost at the burner tip
- Bulk customer to purchase direct from RE generator
  - Pay a premium
  - Premium pay into RE fund

Feed-in-Tariff Rates

- The PURC shall take into account the:
  - (a) technology being used in the renewable energy generation;
  - (b) location of the generation facility;
  - (c) operating norms for the specific technology under consideration;
  - The CAPEX and OPEX associated the plant;
  - The reasonable rate of return;
  - The balance between the interest of the consumer and the investor.

Connection to the Grid System

- An operator of a transmission or distribution system shall
  - Upgrade the transmission or distribution system at reasonable economic expense to feed in the electricity from RE sources;
  - Upgrade the transmission and distribution system as soon as practicable if so requested by a generator interested in feeding in electricity.
  - The cost of upgrading the transmission or distribution system shall be shared
    - Operator of the transmission or distribution system
    - The generator of electricity from renewable energy sources
  - The costs associated with connecting installations to the metering point shall be borne by the generator of electricity from RE sources.

Challenges

- Internal Failures Include:
- Structural barriers due to the design of the mechanism
  - Favorable pricing
  - Volume risk
  - Intermittent nature of RE
  - Lack of financing
  - Inadequate commercial information
  - Lack of spot mkt and one buyer effect may not help financing

- External Failures:
  - Planning
  - Grid system integration cost
  - Market design
  - Policy uncertainties
  - Embedded generation
  - Socialization cost
  - System balancing service cost
  - Curtailment cost due to surplus generation

The way forward

- Regulatory Price Mechanism
- Determine the price and the mkt determine the quantity
  - Investment-Focused
    - Production subsidies
    - Tax credit/unit of generation
  - Generation –Focused
    - Feed-in-tariff
      - Gross
      - Net
    - Fixed premium
    - Off grid rebate

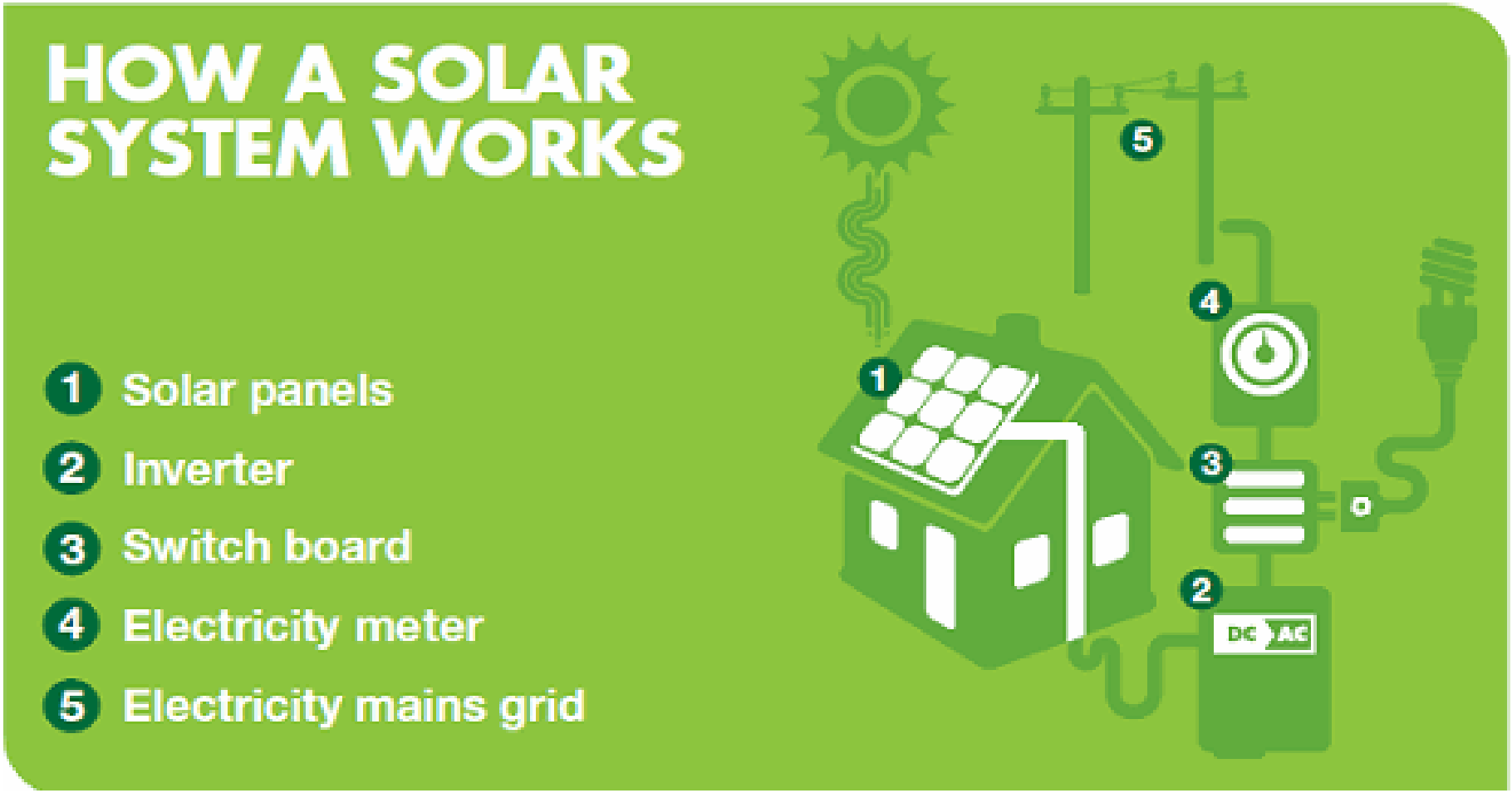
- Quantity Mechanism
- Determine the quantity and the mkt determine the price.
  - Competition between generators for price
  - Legally obligated quotas
  - ROC
  - Green marketing

Successful Feed-in- Tariff Mechanism

The Price Level of Tariff

The System of Metering

The Duration of the Scheme

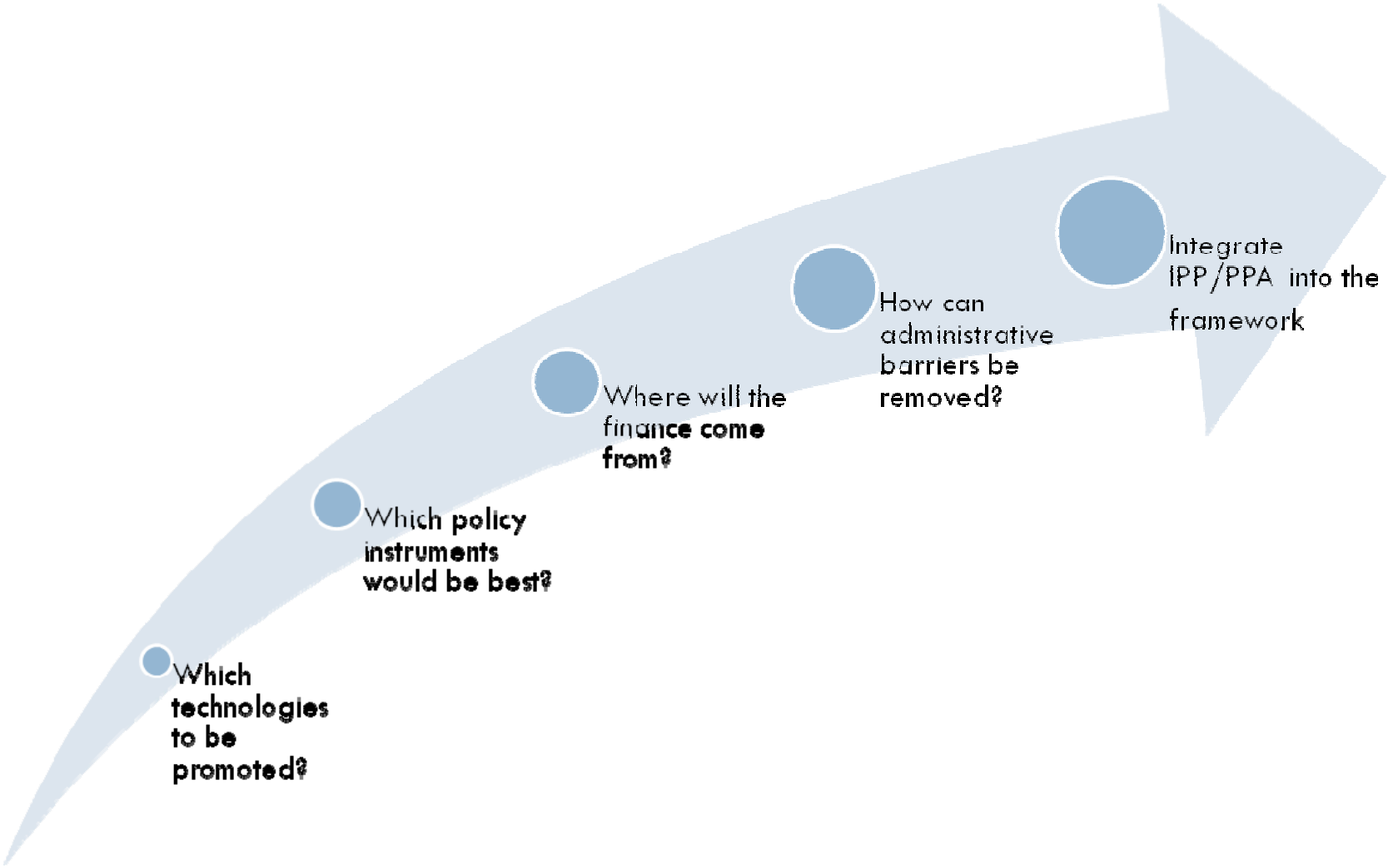


•Sun shines on the solar panels that then generate DC electricity

•This DC current is routed into an inverter that converts it to 240 volts AC, the same as your mains supply

•Any surplus electricity generated by the solar power system not used by your appliances is fed back into the mains electricity supply grid

Action Plan


Which technologies to be promoted?
Which policy instruments would be best?
Where will the finance come from?
How can administrative barriers be removed?
Integrate IPP/PPA into the framework

Conclusion

***some*thing** *is needed to promote renewable in the competitive market.*

Should the market should be segmented, forcing suppliers to buy a certain quantity of renewably generated power?

OR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