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# **RENEWABLE ENERGY GENERATION AND** **FEED- IN TARIFFS**

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# INTRODUCTION



- Renewable energy is energy which comes from natural resources and which can naturally be replenished .
- Renewable energy technologies are best suited for rural areas where energy is in great demand for human development.
- The share of renewable energy in electricity generation is around 18% with 15% of global electricity coming from hydroelectricity and 3% from other renewable sources.

# Energy crisis



Globally, there has been an enormous increase in energy demand far less than the actual demand.

Key historical energy crises are:

1970's crisis—caused by peak of oil production

1973 oil crisis—caused by OPEC oil export embargo.

1979 oil crisis-caused by Iranian revolution among others factors .

2008 central Asia crisis—caused by climatic conditions.

2008—Pakistan crisis—banned use of neon lights in response to electricity shortage.

# Advantages Of Renewable Energy



- Renewable energy is sustainable. The associated facilities require less maintenance .
- Renewable energy produces little or no waste products such as carbon dioxide or other chemical pollutants and hence it has very little effect to the environment.
- Renewable projects bring economic benefits to many areas since the said projects are located within rural areas.

# Disadvantages



- It's difficult to produce large quantities of electricity like with other energy resources, meaning we need to minimize electricity consumption thus hindering economic growth. It's not reliable due to weather related issues.
- The need to have adequate rains, sunshine, wind etc is quite important. Climatic conditions have become unpredictable and inconsistent.
- The required technology is a hindrance to many and the associated costs are too high.

# Feed- In Tariff



- Its' payments per kilowatt- hour for electricity generated by renewable resource.
- It is a policy mechanism designed to encourage the adoption of renewable energy sources and to accelerate grid parity.
- It's the most egalitarian method for determining where, when, and how much renewable generating capacity will be installed.

# History Of Feed - In Tariff



- The first form of feed-in tariff was implemented in the United States of America in 1978.
- In 1990, Germany adopted a law on feeding electricity in to the grid .
- The law known as “stromeinspeisungsgesetz” (StrEG), required utilities to purchase electricity generated from renewable energy sources at prices determined as a percentage of the prevailing retail price of electricity.
- it has proved to be the most effective policy framework of renewable energy technologies.

# Kenya



- Kenya has a liberalized energy sector and she has made a significant progress in the recent past in formulation of policies for renewable energy generation and its associated feed-in tariff.
- Kenya's electricity power mix is among the most sustainable in the world, with 80% of electricity coming from renewable sources.

# Renewable energy resources in Kenya



Renewable Energy	Installed Capacity	Potential	Area
Geothermal	198MW	7000MW	Rift valley
Solar	9MW	4-6KW/MSQ/Day	Over 80% of land area
Wind	5.45MW	346W/MSQ	Nairobi, eastern, north eastern and coastal areas
Small hydro	32MW	3000MW	Five drainage basins
Biomass cogeneration	36MW	300MW	Sugarcane growing belt

# CONCLUSION



- It requires board initiatives, encompassing a wide range of policies: energy, environment, taxation, competition, research, technological development ,regional and external relations policies.
- It has proven to be an effective policy in overcoming the cost barriers and thus making it economically viable.
- A comprehensive action plan is required to ensure co-ordination and consistency in implementing these policies at community, national and regional levels.