

Feed In Tariff: The Policy That Matters

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Challenge for Renewable Energy Technologies

- ▶ Where there is a conflict between an available clean technology and an entrenched dirty one, the challenge is politics and the need for legislative action, not technology.
 - David Suzuki (Canadian Scientist, environmentalist and broadcaster).

Why do we need Policy Support for RE Technologies?

- ▶ Demand for Renewable Energy Technologies is small and associated prices are high.
 - Demand is small, production for renewable energy will remain small scale and expensive:
 - The production is small-scale and expensive, the price will remain high and the demand small.

Catch 22 Situation!!!



Governments must intervene!

- ▶ For renewable many of the advantages sit within the social and environmental arena while the disadvantages sit in the purely business and industry sector.
 - Why would a sector adopt a technology if the benefits offered did not accrue to the business involved?
 - There must be benefits or penalties set up to create an incentive for change.
 - The required intervention must create price signals that allows companies to reflect the external benefits in their balance sheet.

What is a Feed In Tariff ?


▶ Objective:

- To support the market development of renewable energy technologies, specifically for electricity generation.

▶ Characteristics

- Legal obligation on utilities and energy companies to purchase electricity.
- Favorable price per unit.
- Price is guaranteed over a certain time period.
 - The most effective schemes are guaranteed for a period of around 20 years.

What is a Feed In Tariff?

- ▶ Differentiating Tariff Rates
 - Determined for each renewable technology in order to take account of their differing generation costs, and to ensure profitability.
 - The FIT rate set by a particular government for solar, wind or geothermal generated electricity may vary depending on the costs associated with each of these technologies.
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What is a Feed In Tariff?

▶ Secure Investment


- The guaranteed access to the grid, favorable rate per unit and the tariff term guarantee, mean that FITs make the installation of renewable energy systems a worthwhile and secure investment for the producers, manufacturers, investors and suppliers.

What is a Feed In Tariff

▶ Shared Cost

- The extra cost of the favorable tariff rate is usually passed on from suppliers to consumers, and shared among all energy consumers by way of a premium on the per-kWh end user-price.
- The result of financing an FIT by spreading the cost between all end-users in this way is that the increase in price per household is very small.

Why are Feed in Tariff so Fabulous?

1. Most successful support instruments
 2. Flexibility of design
 3. Create national markets for manufacturing industries.
 4. Democratize
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Partial List of Countries with FIT

- ▶ Germany
- ▶ Spain
- ▶ Mongolia
- ▶ South Africa
- ▶ Bosnia
- ▶ Ireland
- ▶ Denmark
- ▶ China
- ▶ Slovenia
- ▶ Thailand
- ▶ Serbia
- ▶ France
- ▶ Portugal
- ▶ Uganda
- ▶ UK

German Revolution in Renewable Energy

- ▶ **Renewable Energy Sources Act 2000**
 - From 2000 to 2004
 - 13.6 terawatt hours (1TWh = 1,000,000 kWh) to 34.9 TWh. (Electricity supply through RE sources)
 - Energy produced from wind and biomass more than doubled .
 - Nine-fold increase in electricity generated from PV systems in Germany.

German Revolution in Renewable Energy

- ▶ Renewable Industry as a whole
 - 500,000 Cleantech jobs by 2020.
 - 900,000 Cleantech jobs by 2030.
 - 30% of Energy Consumed from RE sources by 2020.
 - 50% of Energy Consumed from RE sources by 2030.

UK: A Revolution in the making



Feed in Tariff in UK

- ▶ Introduced in April 2010 to encourage small-scale renewable electricity generation in plants of up to 5 MW).

Impact of Feed In Tariff

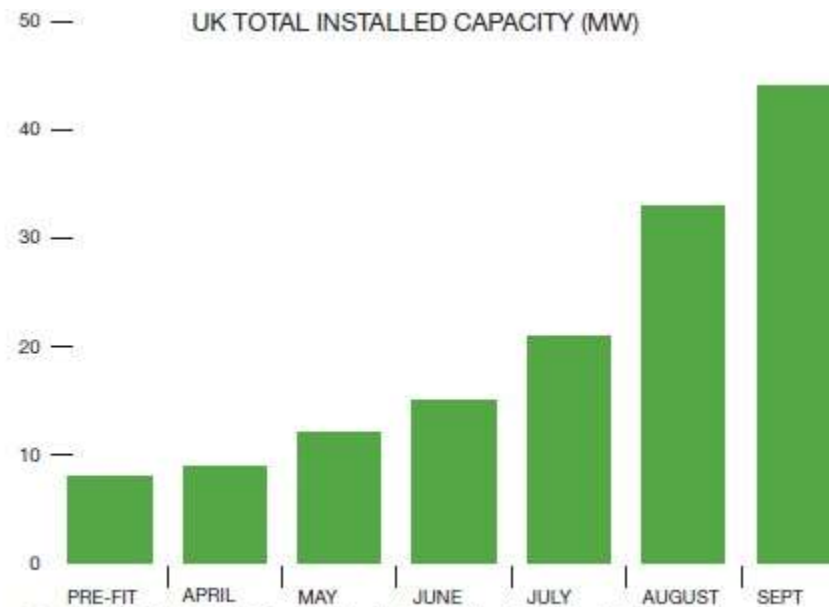
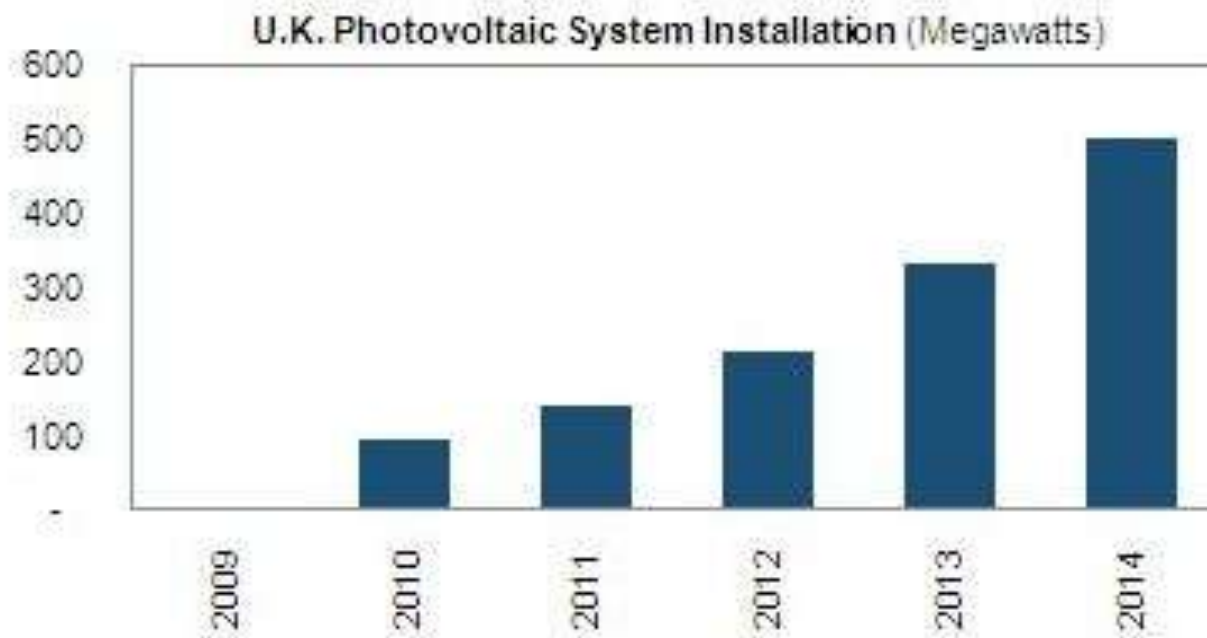


Figure 1: UK Total Installed Capacity for all technologies since introduction of FITs.
(Source: Ofgem Renewables and CHP)

UK: Fastest growing Solar Market

- ▶ From 6 MW in 2009 to 96 MW in 2010.
 - A growth of 1500%
- ▶ Rate of growth 50% each year through 2014.
 - (501 MW)
- ▶ April 2010 – July 2010
 - From 408 to 4541 Registered Residential Installations

UK: Fastest Growing Solar Markets



Source: Techeye.net

Feed in Tariff Delivers results

- ▶ > 50% of wind worldwide
- ▶ > 75% of Solar PV worldwide
- ▶ > 90% of Farm Biogas worldwide

▶ Source: Paul Gipe wind-works.org



Medium Term RE Policy of Pakistan

- ▶ 4.3.3 Feed in Tariffs
 - GOP recognizes that Feed-in Tariff has been globally tested tool to attract prompt investment in ARE sector.
 - Feed in tariffs are therefore to be announced by NEPRA in respect of various ARE sources at such levels as deemed appropriate and duly supported by relevant NEPRA rules on the subject.

Pakistan RE Policy: Key Strategic Objectives

- ▶ Energy Security
- ▶ Economic Benefits
- ▶ Social Equity
- ▶ Environmental Protection

▶ Source: Policy for development of Renewable Energy 2006

Feed in Tariff is “The Policy”!

- ▶ Democratization of energy production.
 - ▶ Empower citizens and communities.
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Important and Unavoidable Transition”

- ▶ From energy resources -driving mass extinction
- ▶ To energy system-based on a lucrative green economy.

Hurry Up, Its time
please.