

NBS-M017 – 2013 CLIMATE CHANGE: GOVERNANCE AND COMPLIANCE

Electricity Market Reform

- **Aims to integrate both the Wholesale and Low Carbon Electricity Markets.**
- **Provides support for both Renewables and Nuclear and in future Carbon Capture and Sequestration**

Basic Time Line

- **Feed in Tariff - Contracts for Difference for Renewables begin 1st April 2014**
- **April 1st 2014 – March 31st 2017**
 - New Renewable Generators can opt for either Renewable Obligation or FIT – CfD**
 - Existing Renewable Obligation Generators can opt to swap to FIT – CfD**
- **From April 1st 2017, all new renewable generation and nuclear covered by FIT – CfD, supported by a Capacity Market.**

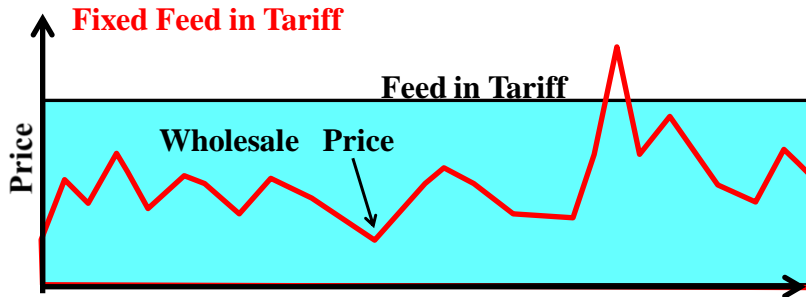
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Options considered:

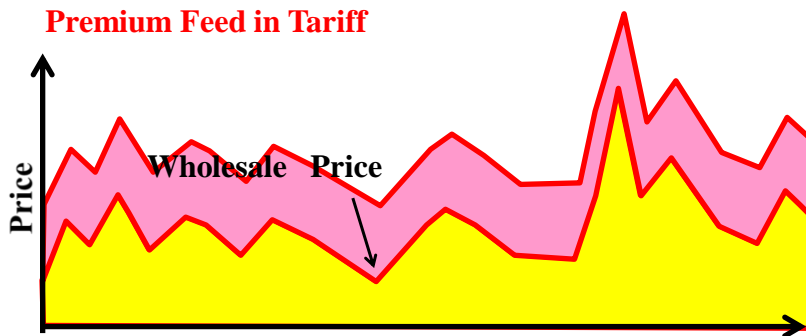
- **Premium Feed in Tariff – the scheme adopted by Spain**
- **The Renewable Obligation (i.e. the current UK system) - a form of variable Premium Feed in Tariff – used in UK and as a variant in Japan**
- **Fixed Feed in Tariff – the approach used by Germany**
- **One way contract for Difference – as used by the Netherlands**
- **One Way contract for Difference with auction to set the strike price – as used by Denmark**
- **Two way contract for difference as now proposed for UK**
- **Two way contract for difference with auctioning to set Strike Price.**

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- **Feed in Tariff – used in Germany**
A fixed price contract for n years - price set by Government and adjusted periodically
- **Also used in UK as Non Fossil Fuel Obligation**
NFFO phases 3 – 5 had auctions to set the Feed In Tariff Price – i.e. lowest level to satisfy the required level of deployment
- **Developers have a fixed income thereby reducing risk**

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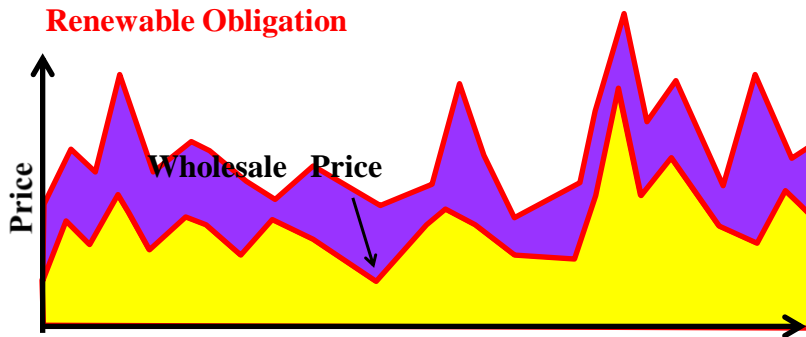
Fixed Premium Feed in Tariff – has been used in Spain

Renewable Generators get paid average Wholesale Price Plus a fixed premium over contract period.

A variant allows generators to trade in wholesale market to influence this market

- Might lead to increased wholesale prices

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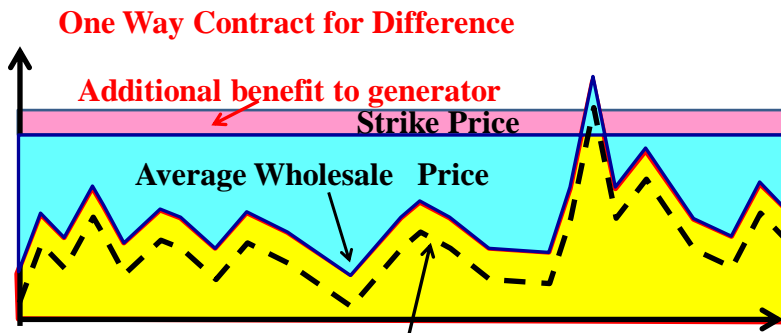
Renewable Obligation as used in UK is a form of Variable Premium Feed in Tariff

Renewable Generators get paid average Wholesale Price Plus a **VARIABLE** premium over contract period.

Premium varies according to supply and demand in Renewable Market.

- Independent of wholesale prices

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Actual Wholesale Price negotiated by generator

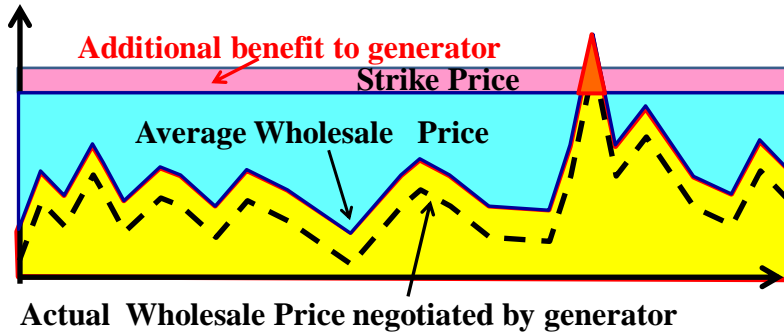
One way Contract for Difference - The Netherlands. In Denmark Strike Price is set by Auction.

If wholesale price is above Strike Price, no return of excess.
As Renewable Generators participate in Wholesale Price, they can influence this and if their actual wholesale contract is below average price – they benefit.

Would help to keep Wholesale Prices down.

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Two Way Contract for Difference



Two way Contract for Difference as proposed for UK

- If wholesale price is above Strike Price, excess is returned.**
- As Renewable Generators participate in Wholesale Price, they can influence this and if their actual wholesale contract is below average price – they benefit.**
- Would help to keep Wholesale Prices down.**

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Of the four different methods albeit with variations:

- Renewable Obligation
 - Premium Feed in Tariff
 - One Way contract for difference, with or without auctioning
 - Two Way Contract for Difference with or without auctioning
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- **The two way CfD is likely to have greatest control on prices.**
 - **Both CfD methods have the potential to reduce Wholesale Prices if Renewable Generators can keep any margin under the average wholesale price they can negotiate.**
 - **However, the greatest deployment of renewables may not occur with CfD**

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	Draft Strike Prices (£/MWh)				
	2014/15	2015/16	2016/17	2017/18	2018/19
Advanced Conversion	155	155	155	140	135
Anaerobic Digestion	145	145	145	140	135
Biomass Conversion	105	105	105	105	105
Dedicated Biomass (with CHP)	120	120	120	120	120
Energy from Waste (with CHP)	90	90	90	90	90
Geothermal	125	120	120	120	120
Hydro	95	95	95	95	95
Landfill Gas	65	65	65	65	65

See: **Electricity Market Reform: Delivering UK Investment**

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/209276/EMR_Spending_Review_Announcement_-_FINAL_PDF.pdf

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	Draft Strike Prices (£/MWh)				
	2014/15	2015/16	2016/17	2017/18	2018/19
Offshore Wind	155	155	150	140	135
Onshore Wind	100	100	100	95	95
Sewage Gas	85	85	85	85	85
Large Solar PV	125	125	120	115	110
Tidal Stream	305	305	305	305	305
Wave	305	305	305	305	305
Nuclear	92.5				

See: **Electricity Market Reform: Delivering UK Investment**

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