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A comparison between the UK Government's proposals for a FIT with CfD and European support mechanisms for offshore wind

RenewableUK

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Agenda

- Introduction
- Types of Support Mechanism
- European Mechanisms for Offshore (and Onshore) Wind
- Conclusions

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Introduction to TNEI

- Specialist energy and environmental consultancy
- Recent & Current Projects:
  - DECC Scottish Islands project (with Baringa)
  - DECC Offshore Wind Generation Cost Variations Review
  - Scottish Enterprise Multi-Terminal Test Environment
  - Ofgem: Coordinated offshore transition, LCNF support, enduring regime consultation etc
  - Support many developers on grid connections
- TNEI Lead for Technical Strategy & Regulation
  - Member of Scottish Renewables Grid Workgroup

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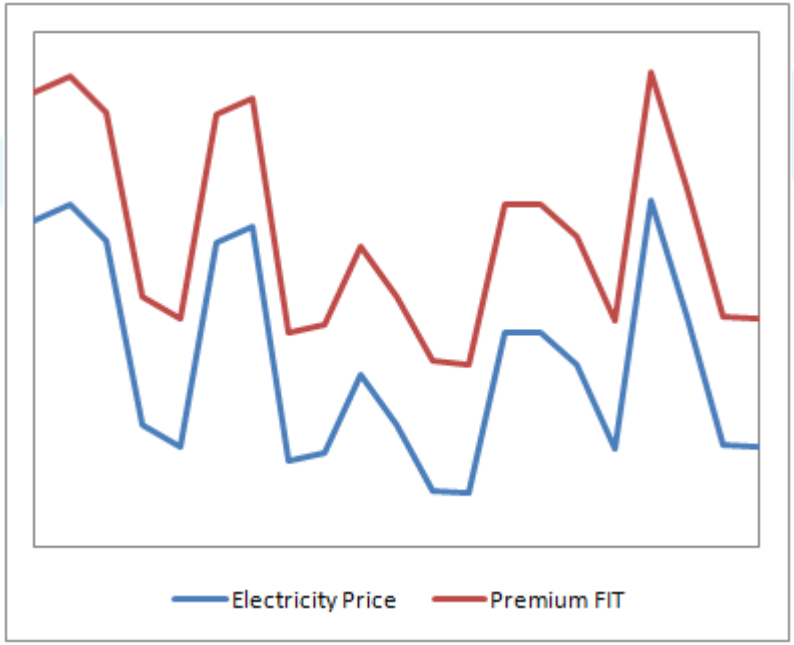
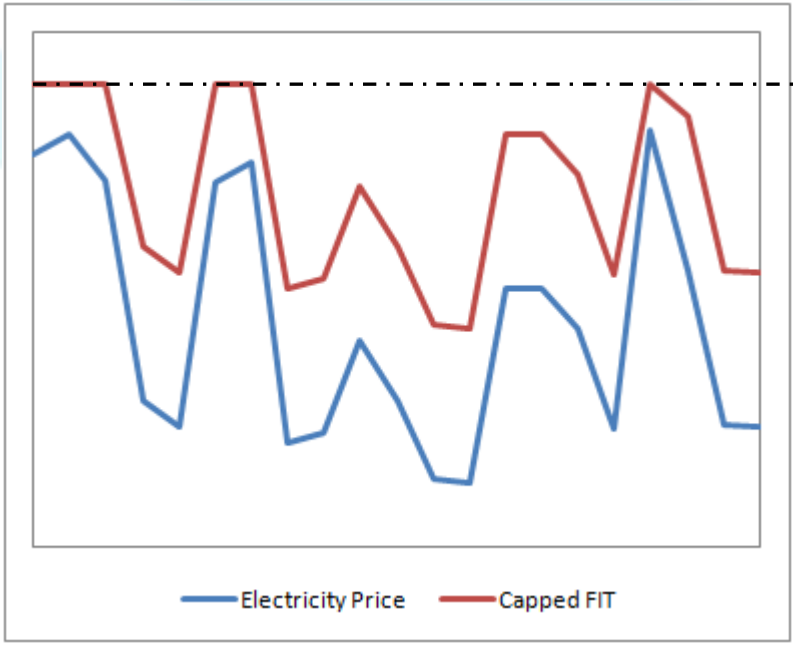
Types of Support Mechanism – Premium & Capped FIT

Premium FIT



Capped FIT



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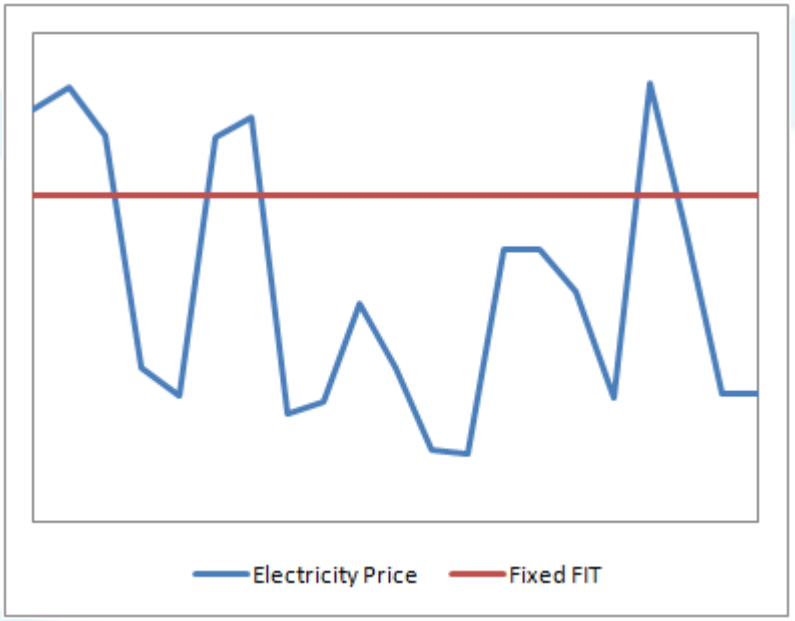
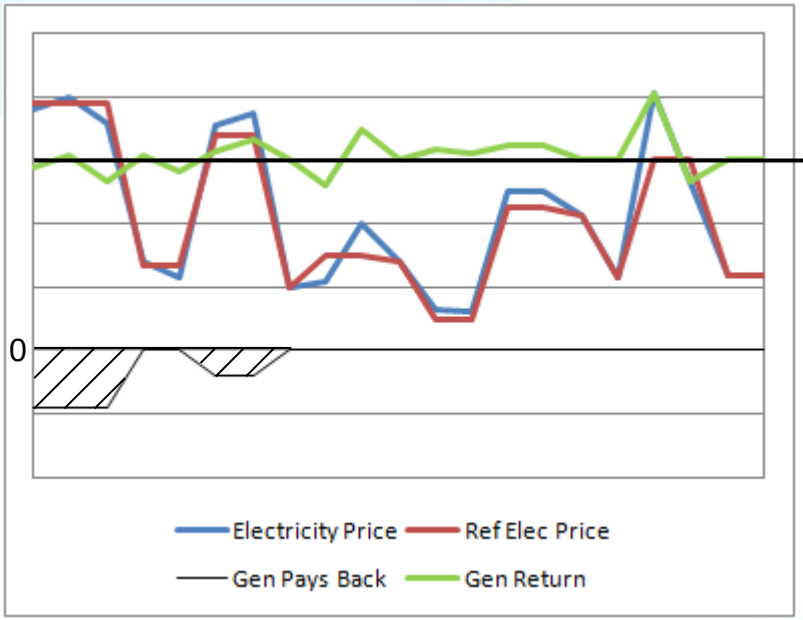
Types of Support Mechanism – Fixed FIT and CfD

Fixed FIT



FIT with CfD



** Generator return assumes market price is achieved*

Fixed FIT versus FIT with CfD

Fixed FIT

- Return is guaranteed for a given period of the project – offers certainty compared with ROCs, therefore reducing investment costs
- More simple instrument than FIT with CfD – easier for small generators to understand
- No incentive to sell electricity above average price – therefore no demand signals

FIT with CfD

- Generators are paid the difference between a reference price (proxy for market price) and strike price
- Receive wholesale price in short term, then topped up to strike price set out in long term contract (or reduced if necessary to pay back)
- Smaller generators may not be able to achieve the reference price – PPA premium
- Large generators have reduced incentive to offer PPAs – RO obligations ensured PPAs had to be offered
- Aim to preserve efficiencies of market price, i.e. generators have incentive to sell output above average price

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Main European Support Mechanisms – Offshore Wind

Country	Support Category	Main Support Policy	2012 Offshore Wind Capacity (MW)
UK	TGC (similar to Premium FIT); then CfD from 2017	2 ROCs (approx €117) per MWh of output + market price	2,948
Denmark	Tender – Premium FIT	market price + premium set by tenders	921
Belgium	TGC (similar to Premium FIT)	€107/MWh + market price for 1st 216 MW, then €90/MWh + market price	380
Germany	Fixed FIT	€150/MWh	280
Netherlands	Tender – Fixed FIT	€94/MWh in 2009	247
Sweden	TGC (similar to Premium FIT)	Approx €35/MWh + market price in 2009	164
Italy	TGC (similar to Premium FIT)	1.1 certificates/MWh	0
France	Fixed FIT	€130/MWh for 10yrs, then falling	0

Source: "The Economics of Offshore Wind", Department of Economics, University of Birmingham, 2010; EWEA

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Main European Support Mechanisms – Onshore Wind

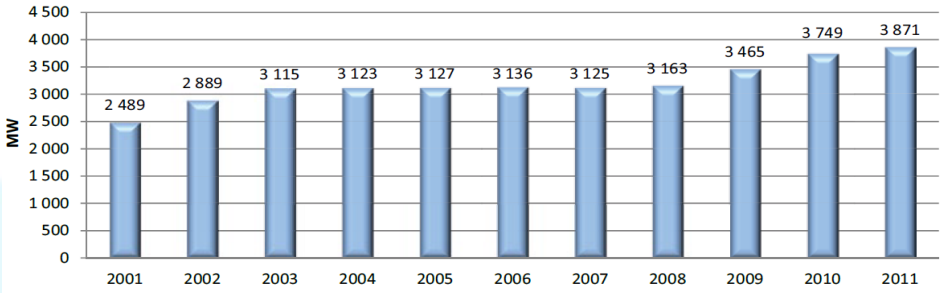
Country	Support Category	Main Support Policy	Duration	2012 Wind Capacity (MW)
Germany	Fixed FIT	101.3 Euro/MWh	20	31,028
Spain	Premium FIT	54 Euro/MWh + Elec Price	?	22,796
UK	TGC (similar to Premium FIT); CfD	Currently 1 ROCs (approx €59) per MWh of output + market price	15?	5,497
Denmark	Premium FIT	37 Euro/MWh + Elec Price	10-20	3,241
Netherlands	FIT "Sliding premium"	90-96 Euro/MWh	12-15	2,391
Finland	Fixed FIT	84 Euro/MWh	?	288
Estonia	Capped FIT	77 – 92 Euro/MWh	25	269
Czech Republic	Premium FIT	73 Euro/MWh + Elec Price	20	260
Slovakia	Fixed FIT	81 Euro/MWh	15	3
Slovenia	Premium FIT	41-52 Euro/MWh + Elec price	15	2

Source: "Recent developments of feed-in systems in the EU – A research paper for the International Feed-In Cooperation, Fraunhofer ISI, Energy Economics Group, ECOFYS, January 2012

Denmark – Evidence for Regulatory Success?

Background

- Tender run to discover the value of the resource
- Horns Rev 2: Premium of DKK 518/MWh (approx €70/MWh) + market price
- Rødsand 2: Premium of DKK 629/MWh (approx €84/MWh) + market price
- Compare with approximately €117/MWh + market price for UK (RO + market price)



For

- "Effectiveness indicators" for offshore wind calculated by Fraunhofer Institute show Denmark as most effective
- Mitigates risk of getting FIT price wrong

Against

- Denmark used a Fixed FIT until 2002 → 20% electricity from wind (little onshore growth 2003+)
- Low prices may be due to shallower water depth compared with Round 2 wind farms, e.g. 20-32m for Greater Gabbard; 6-12m for Rødsand 2.

Source: ""Support schemes for off-shore wind in the EU – options for cooperation, Fraunhofer ISI, November 2010 & GWEC 2011

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Conclusions

Potential Benefits of FIT with CfD

- Aim to provide a consistent return, therefore reduce cost of finance and hence cost to consumer
- Objective is to remove volatility of energy price and ROC price
- Attempt to provide advantages of Fixed FIT – worked well in European countries such as Germany, Netherlands, Denmark (up to 2002)
- Aim to preserve efficiencies of market price, i.e. generators have incentive to sell output above average price

Risks

- May present disadvantages for smaller generators:
  - May not be able to achieve the reference price e.g. due to PPA discounts
  - Large generators may have reduced incentives to offer PPAs unlike requirement for ROs
  - More complex than Fixed FITs (and probably ROs – more difficult to understand)
- Mis-match between reference price timing and CfD payment (strike price not achieved?)
- Additional complexities may re-introduce price risk and increase required strike price (or discourage investment)
- Is the duration of 15 years optimal? Other successful countries (e.g. Germany) use 20 year duration. Will this raise costs/ discourage investment?
- Limited evidence for success of CfDs