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Feed-in-Tariffs: A US and UK Perspective

The United Kingdom Introduces Feed-in-Tariffs

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Background: EU and UK renewable energy goals

- EU Renewable Energy Directive:
  - – 20% energy from renewable sources by 2020

- UK Renewable Energy Strategy:
  - – 15% energy from renewable sources:
    - 30% electricity
    - 12% heat supply
    - 10% transport energy supply

Background: UK schemes

- Principal UK renewable energy schemes:
  - Renewable Obligations scheme (ROO)
  - Feed-in-Tariffs (FITs)
  - Renewable Heat Incentive (RHI)

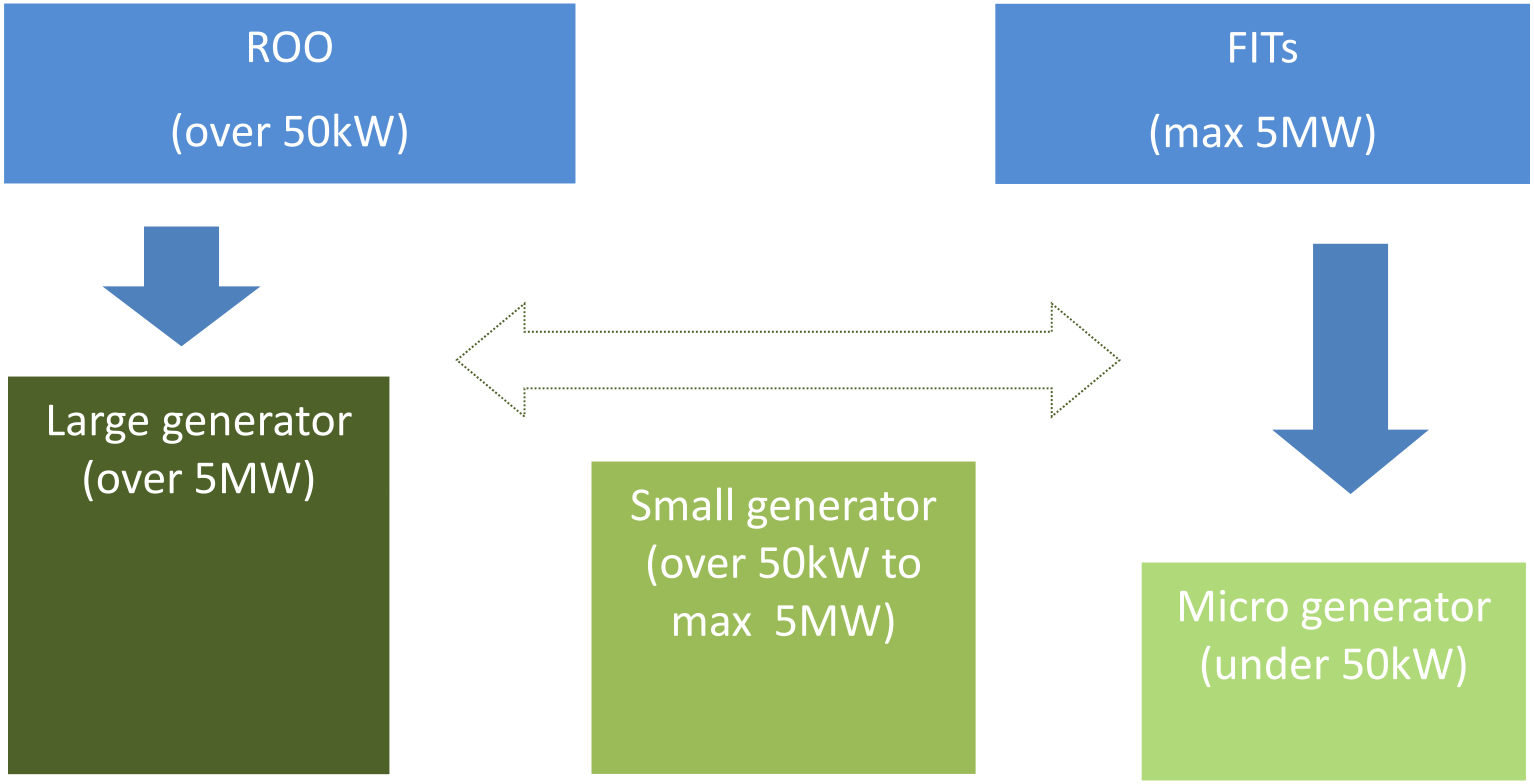
ROO overview

- Supports renewables installations with capacity over 50kWh
- Renewable Obligation Certificate (ROC) issued for renewable electricity generated
- Level of ROCs received depends on technology type
- Electricity suppliers purchase ROCs to meet their renewables requirements
- Price of ROCs is market based
- Support under ROO lasts 20 years (up to 31 March 2037)

FITs overview

- Supports renewables installations up to 5MW capacity
- Two payments: generation and export
- Support for 20 years – 25 years for solar
- Generation price fixed for duration of support
- Some technologies subject to degression
- Electricity suppliers make payment

Overview: ROO and FITs



ROO

(over 50kW)

FITs

(max 5MW)

Large generator (over 5MW)

Small generator (over 50kW to max 5MW)

Micro generator (under 50kW)

Principal differences between ROO and FITs

- Income:
  - Price of Renewables Obligation Certificates (ROCs) determined by the market
  - FITs payment levels are fixed for the duration of participation (subject to RPI adjustment)

- Period of support:
  - ROO, maximum of 20 years
  - FITs, 20 years with some technologies receiving 25 years

FITs technology

- Types of technology supported:
  - Solar
  - Anaerobic digestion
  - Hydro
  - Wind
  - Combined heat and power

FITs payments

- Two payments:
  - Generation
  - Export

- Once FITs approved, price fixed for duration (e.g. 20-25 years)

FITS degression

- Degression begins in 2012
- Subject to degression:
  - Solar
  - Wind
- Not subject to degression:
  - Anaerobic digestion
  - Hydro

FITS degression

- Example of degression rates:

Type	FITS Year 1	FITs Year 2	FITs Year 3	FITs Year 4	FITs Year 5	FITs Year 6	FITs Year 7	FITs Year 8	FITs Year 9
	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
Solar PV >100kW	29.3p /kWh	29.3p /kWh	26.8p /kWh	24.5p /kWh	22.4p /kWh	20.4p /kWh	18.6p /kWh	16.9p /kWh	15.4p/ kWh

FITs income comparison table: Solar PV

Solar PV >100kW-5MW	Installation capacity = 1,000kW				Installation capacity = 5MW			
	With anticipated output of 850,000 kWh/year				With anticipated output of 4,250,000 kWh/year			
Generation tariffrate pence/kWh	Expected generation tariff income	Expected export tariff income	Total expected income per year	Total expected income over 25 years	Expected generation tariff income	Expected export tariff income	Total expected income per year	Total expected income over 25 years
29.3 2010/12 rate	£248,878	£12,750	£261,628	**£6,540,700**	£1,244,388	£63,750	£1,308,138	**£32,703,450**
20.4 2015 rate	£173,400	£12,750	£186,150	**£4,653,750**	£867,000	£63,750	£930,750	**£23,268,750**

FITs opportunities in the UK

- Multiple companies offering solar installation:
  - Typically, company pays for the installation, connection charges and maintenance of the solar panels
  - Panels installed on south, south-west or south-east facing roofs
  - Capital cost paid back through generation and export tariff
  - Customer gets reduced energy bills
  - Referred to as “rent my roof space” schemes
- Investors now exploring innovative ways of securitising FITs revenue

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Feed-in Tariffs: A UK and US Perspective

US Feed-in Tariffs – Constitutional Issues

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General Background

- At least 18 states have or are considering feed-in tariffs (FiT)
- Many of these states also have renewable portfolio standards (RPS)
- 31 States and DC have an RPS
- Wide variation in RPS and FiTs regarding:
  - Qualifying resources
  - Quotas/limits for specific resources (including ‘multipliers’)
  - In-state preferences

Commerce Clause Issues

- The US Constitution empowers Congress to regulate interstate commerce
- Corollary to this power – the so-called ‘negative’ Commerce Clause – is the power to prevent the states adopting laws that interfere with interstate commerce
- In-state preferences and similar impediments to interstate commerce in RPS or FiTs are per se un-Constitutional

Commerce Clause Issues

- As might be expected, states' RPS restrictions have spawned legal challenges. In *TransCanada Power Marketing Ltd. v. Bowles*, Case No. 4:10-cv-40070 (D. Mass.), TransCanada sued a number of Massachusetts' officials for a declaration that Massachusetts' RPS program was unconstitutional insofar as TransCanada's out of state renewable resources were not eligible. While these parties are reported to have settled their dispute, *TransCanada* promises to be just the first of many battles against states' facially protectionist RPS measures.

Commerce Clause Issues

- The Supreme Court has recognized that the market for energy production is one of the most "basic element[s] of interstate commerce." *FERC v. Mississippi,* 456 U.S. 742, 757 (1982). The Court has also stated that "uncontrolled regulation by the States can patently interfere with broader national interests." *Ark. Elec. Coop. v. Ark. Pub. Serv. Comm'n*, 461 U.S. 375, 377 (1983). In light of comments such as these, as well as the Court's recognition that renewable energy generated out-of-state is virtually identical to renewable energy generated in-state, states will be hard-pressed to justify their facially discriminatory RPS measures.

Supremacy Clause Issues

- The Supremacy Clause of the US Constitution applies only when the Congress has acted in a given field and either a state law is inconsistent with, or compliance with a state law would be an obstacle to the purpose of, the Federal law.

Supremacy Clause Issues

- The Federal Power Act (FPA) governs the transmission and sale for resale (i.e., "wholesale") of power in interstate commerce.
- The FPA makes it unlawful to make a sale at wholesale without a contract, and without FERC approval of that wholesale contract (which can include FERC approval of a tariff authorizing the seller to make sales for resale at market-based rates, rather than pursuant to individually-approved contracts).

Supremacy Clause Issues

- This effectively means that a state FiT cannot lawfully force a utility to purchase at a state-set price. As a result, any FiT imposed under FPA could not be an unconditional obligation to purchase the renewable energy produced. Instead, the purchase price would remain subject to approval by FERC, using a “just and reasonable” and not “unduly discriminatory” standard. *See* Sections 205 and 206 of the FPA.

Supremacy Clause Issues

- One exemption from the FPA is under the Public Utility Regulatory Policies Act of 1978 (PURPA), which allows renewable energy producers to make certain sales of power to utilities without FERC approval. To be eligible, however, a facility must receive FERC certification as a “qualifying facility” (QF), which is limited to a subset of renewable energy technologies and project sizes, and the sale must be pursuant to a state program implementing PURPA. In addition, the price to be paid by the utility cannot exceed the utility’s avoided cost (as discussed in more detail below).

Recent California FiT Challenges

- California, which has become the battleground for the constitutionality of state FiT programs, had it's FiT challenged at FERC in May 2010.
- Introduced at the end of 2008, California's FiT pays $0.096/kWh for combined heat and power generating facilities of 20 megawatts (MW) or less installed in 2010. This price is based on the Market Price Referent (MPR), set at the avoided cost of a natural gas-fired plant and includes a greenhouse gas adder to reflect the anticipated cost of carbon mitigation.
- Specifically, the MRT assumes the opportunity cost for wholesale power mirrors the hypothetical cost of operating a base-load combined-cycle gas turbine (CCGT) unit over a 10, 15, 20 or 25 year period.

Recent California FiT Challenges

- Because the total FiT ends up above avoided costs, the three major retail utilities, Southern California Edison, Pacific Gas & Electric, and San Diego Gas & Electric (IOUs), filed a complaint with FERC alleging the FiT amounts to unconstitutional state regulation of interstate power at wholesale.
- In their complaint, the IOUs based their claims on previous FERC rejections of state pricing above avoided costs inside of PURPA and made the policy argument that inconsistent pricing across states could impose a significant burden on investor-owned utilities, giving rise to prohibitively high wholesale renewable energy prices that destroy their competitive advantage.

Recent California FiT Challenges

- Former California Governor and current Attorney General (and aspiring Gubernatorial candidate) Jerry Brown responded to the complaints by claiming that California is not setting rates for the wholesale generator. Instead, it is establishing a price that utilities must offer to generators in order to comply with state law; the generator retains discretion to sell (or not) at the offered rate. A January 2010 report by the National Renewable Energy Lab (NREL) lent support to Brown's position, claiming that a state FiT would not violate the FPA if designed as the utility's offer to buy at a state-specified price. The NREL based its conclusion on the 1997 ruling in Midwest Power Systems, Inc. (Docket EL95-51, 78 FERC ¶61067). In that case, FERC ruled that Iowa's 6 cent FiT (versus 1.5 cent avoided-cost rate) was pre-empted as unlawful because it fell outside of PURPA.

Recent California FiT Challenges

- Attorney General Brown also defended the FiT under the state's police power, as a public health and safety law. As a result, it should be presumed lawful and not preempted absent "a clear and manifest purpose" by Congress. See *Chae v. SLM Corp.*, 593 F. 3d 936, 944 (9th Cir. 2010). According to Brown, due to the impending threat of global warming, PURPA and FERC should be interpreted liberally to give states flexibility in avoided-cost rate setting to accommodate important state environmental objectives. And since the California MPR has been deemed to be *de facto* reasonable in the context of the RPS, the same standard should carry over to a FiT.

Recent California FiT Challenges

- But FERC was not persuaded by Brown or the California Public Utilities Commission (CPUC), the California agency responsible for implementing the FiT. In a July 15, 2010 order (132 FERC ¶ 61,047 (2010)), it found that certain CPUC decisions are preempted by federal law, except in limited circumstances. While California was relying on the fact that its FiT controlled power purchases, not power sales, FERC elevated substance over form, holding that the California FiT attempted to establish wholesale prices above the avoided cost of the purchasing utility. As FERC has exclusive authority to regulate wholesale power sales, it held the California FiT to be preempted under the Supremacy Clause of the United States Constitution. This means the FiT must comply with the FPA and PURPA, which requires that eligible facilities are QFs and the established "offer" price does not exceed avoided cost. This victory for the retail utilities has broad implications for other California FiT programs and all states that currently have, or are considering, FiTs.

Other Issues