

Feed in Tariffs and the Renewable Heat Incentive



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Background to the FIT



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The Feed in Tariff came into effect in April 2010 giving homeowners and businesses the opportunity to benefit financially from installing renewable electricity systems:

- Solar PV
- Wind
- Hydro
- Micro CHP
- Anaerobic digestion



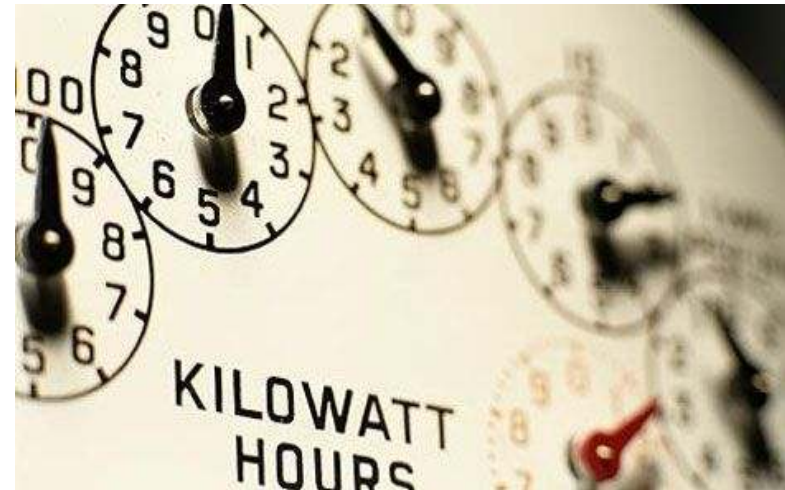
Background to the FIT



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There are three 'income' streams

1. Generation tariff paid on all electricity generated
2. Export tariff paid on all electricity exported to the grid
3. Fuel bill savings



Points of note:

- Tariffs drop periodically to reflect falling prices of installations
- Tariffs rise with inflation
- Tariffs have been fiddled around with.... A LOT

Changes to the FIT



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The first review of the scheme was originally intended to take place in 2012 and come into effect in April 2013 but was needed sooner than expected:

Fast track review (effective Aug 2011):

- Cutting PV tariffs for 50kWp

Comprehensive review part 1 (effective Mar/Apr 2012):

- Major reduction of PV tariffs across the board (approximately 50%)
- Introduction of “multi installation” tariff for 25 installations or more (80% of single installation tariffs)
- Energy efficiency requirement - EPC of D or above

Comprehensive review part 2 (Aug 2012):

- Further reduction of PV tariffs
- Reduction of PV tariff lifetime from 25 to 20 years
- Increase of “multi installation” tariff from 80% to 90% of single tariff
- Increase of export tariff to 4.5 p/kWh
- Introduction of faster and more regular tariff control (quarterly reductions will be implemented unless deployment is “low”)

FIT generation tariffs (from August)



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Scale of installation	Standard Tariff (p/kWh)	Multi generation Tariff (p/kWh)	Lower Tariff (p/kWh)
Up to 4kW	16	14.4	7.1
>4-10kW	14.5	13.05	7.1
>10-50kW	13.5	12.15	7.1
>50-100kW	11.5	10.35	7.1
>100-150kW	11.5	10.35	7.1
>150-250kW	11	9.9	7.1
>250kW-5MW	7.1	N/A	N/A
Stand-alone	7.1	N/A	N/A

What does this really mean?



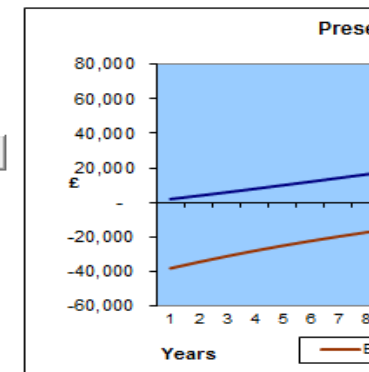
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- Is PV financially viable with these tariffs or not?
- How cheap do PV installations now need to be?

1. Site	
Annual elec consumption	5000 kWh
Percentage used in day	50%
Percentage used in night	50%
Unit price in day	0.13 £/kWh
Unit price in night	£/kWh
2. System - costs & outputs	
PV system size	35.00 kWp
System output per kWp (kWh)	850.0
Bulk purchase discount?	
System CAPEX (ex. VAT)	-42,000 -1200
System CAPEX (inc. VAT)	-44,100 £
Inverter costs	-2,520 £
Predicted Yr 0 output	29750 kWh
% used on site	50%
Units used on site	14875
Units exported	14875
Annual insurance charge	0.50%
Annual monitoring & maintenance cha	0.50%

3. Tariff	
FiT tariff	>10-50kW
Type of generation tariff	Multi installation
Export tariff	12.15 £/kWh
	0.045 £/kWh
4. Financial Variables	
Inflation	2.5%
Discount rate (own system)	8.41%
Discount rate (3rd party)	2.50%
Check of install cost/kWp	-1,200
Elec price inflation	5.0%
VAT rate applied	5.0%
Client VAT registered?	Yes Ex. VAT
Loan interest rate (repayment)	8.00%
Loan term (years)	25
5. Carbon factors	
Carbon factor (kgCO2/kWh)	0.529 kgCO2/kWh
Carbon offset (Yr1)	15,738 kg
Total carbon offset (over 25 yrs)	352,652 kg
£capex/tCO2 saved (over 25 yrs)	-119 £/t
£NPV/tCO2 saved (over 25 yrs)	0 £/t

25 YEAR IRR CALC



Buy your own PV model - cashflow

Year	0	1	2	3	4	5	6	7	8	9	10
Percentage of Yr 0 system output	100%	98.4%	97.6%	96.8%	96.0%	95.2%	94.4%	93.6%	92.8%	92.0%	91.2%
Costs											
CAPEX + replacementn inverters	-42,000										-3226
Loan repayments											
Insurance	-210	-215	-221	-226	-232	-238	-244	-250	-256	-262	-269
Monitoring & maintenance	-210	-215	-221	-226	-232	-238	-244	-250	-256	-262	-269
Total costs	-42,420	-431	-441	-452	-464	-475	-487	-499	-512	-525	-3,763
Income											
Feed in Tariff	3,615	3,646	3,706	3,768	3,830	3,893	3,957	4,022	4,087	4,153	4,220
Export tariff	669	675	686	698	709	721	733	745	757	769	781
Electricity bill savings											
Total income	4,284	4,321	4,393	4,466	4,540	4,614	4,690	4,766	4,844	4,922	5,001
Profit / loss	-38,136	3,890	3,952	4,013	4,076	4,139	4,203	4,267	4,332	4,398	1,238
Present value of profit / loss	-38,136	3,589	3,362	3,150	2,951	2,764	2,589	2,425	2,271	2,127	552

Background to the RHI



Two main differences to the Feed in Tariff:

1. Heating technologies:

- Solar thermal
- Biomass boilers
- Ground source heat pumps
- Water source heat pumps
- Geothermal energy



2. No export tariff

Strands of RHI



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1. Commercial RHI started in November last year
2. Domestic (individual) RHI should launch in mid-late 2013
3. The Renewable Heat Premium Payments (RHPP) are basically a grant for individual domestics and are available now as a stop gap before the domestic RHI starts



RHI tariffs (non-domestic)



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Tariff name	Eligible technology	Eligible sizes	Tariff rate (p/kWh)
Small biomass	Solid biomass; Municipal Solid Waste (incl. CHP)	Less than 200 kWth	<i>Tier 1:</i> 7.9 <i>Tier 2:</i> 2.0
Medium biomass		200 kWth and above; less than 1000 kWth	<i>Tier 1:</i> 4.9 <i>Tier 2:</i> 2.0
Large biomass		1000 kWth and above	1.0
Small ground source	Ground-source heat pumps; Water-source heat pumps; Deep geothermal	Less than 100 kWth	4.5
Large ground source		100 kWth and above	3.2
Solar thermal	Solar thermal	Less than 200 kWth	8.5
Biomethane	Biomethane injection & biogas combustion, except landfill gas	Biomethane all scales; biogas < 200 kWth	6.8

RHPP support levels



Technology	Voucher Value
Solar thermal	£300
Air to water heat pump	£850
Ground source or water source heat pump	£1250
Biomass boiler	£950

RHPP Social Landlords Competition



- £10m available
- Up to €200,000 applications
- Focussed on off-gas properties
- Deadline for applications is 4th July 2012

Changes to the RHI



RHI “Stand-by mechanism for budget management”

- A £70m limit for 2012/13 has recently been introduced after which the scheme will stop operating until the end of the FY
- A one week notice period will be given
- DECC is estimating £42m spend in 2012/13 so reaching the £70m limit is thought unlikely

More cost control mechanisms will be consulted on over the summer with the expectation that some deployment-linked tariff reduction measures will be put in place.

So is renewable heat “worth it”?



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What kind of returns are possible from solar thermal, biomass and heat pumps?

What should you do next?



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1. Desktop roof survey

A desktop survey of your domestic / commercial roof space is quick and easy and will allow you to identify the potential for solar PV and solar thermal across your stock.



What should you do next?



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2. RHPP Social Landlords Competition

Up to €200,000 available.
Deadline is 4th July 2012.



What should you do next?



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3. Scope biomass opportunities

If you have ageing boilers then considering the potential for biomass (particularly if they are off-gas) can be a really sensible move. A combination of desk-based study and site surveys will be necessary.



Thanks for listening



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