Feed-in Tariff in UK

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Introduction

Feed-in Tariff system (FIT) has been introduced by UK Government due to the given power of The Energy Act 2008. (For The Energy Act 2008 the Royal Assent was given on 26 November 2008)

Note

The main reason why Feed-In Tariffs have been included in the 2008 Energy Act was to reach emission-reduction targets increasing from 50% to 80% of the 1990-baseline emission by 2050

Introduction

- Regarding **feed-in tariffs** the Act enabling the Government to offer financial support for low-carbon electricity generation in projects up to 5 megawatts (MW)

- The FITs scheme is intended to encourage deployment of additional small scale low carbon electricity generation, particularly by individuals, householders, organisations, businesses and communities who have not traditionally engaged in the electricity market

Introduction

- It is expected that by 2020 the scheme will support over 750,000 small scale low carbon electricity installations and will have saved 7 million tonnes of carbon dioxide
- On the launch of FITs in April 2010, tariffs will only be offered to technologies which can realistically and effectively be deployed in the short term
- New technologies and their eligibility will be considered at future FITs schemes reviews, first of which is to be carried out in 2013

Introduction

At the same time (FITs) will work alongside the Renewables Obligation, which will remain the primary mechanism to incentivise deployment of large-scale renewable electricity generation

APX-ENDEX ALLOWED TRADING OF UK POWER UP TO 15 MINUTES BEFORE GATE CLOSURE

- APX-ENDEX, the Anglo-Dutch energy exchange,on February 15, 2010 announced the successful upgrade of the EuroLight® 5.0 trading system, the exchange's trading platform for its electricity and gas spot markets
- The new upgraded version of EuroLight® 5.0 allows the market participants to trade UK power until 15 minutes before gate closure. As the first exchange offering this service in Europe, APX-ENDEX is also the only exchange facilitating trading so close to physical delivery. This allows traders to analyse the latest information on weather conditions that influence the production of renewable energy

APX-ENDEX ALLOWED TRADING OF UK POWER UP TO 15 MINUTES BEFORE GATE CLOSURE

- The new launch does not only give members of the exchange new possibilities like the iceberg functionality but it also facilitates future market developments such as Central Western European Market Coupling and BritNed cable, market integration projects that APX-ENDEX is strongly involved with
- All APX-ENDEX UK spot members, 55 in the UK Power market and 70 in the UK Gas market, have switched to the new system. ThePower UK spot and Gas UK spot was transferred to the EuroLight® 5.0 on on Tuesday 9 February

FITs Application

- The FITs scheme will start from 1 April 2010
- The legal powers and duties as well as Guidance are given to the Office of Gas and Electricity Markets –OFGEM
- Help also are available from the Carbon Trust and the Energy Saving Trust as well as through The Department of Energy and Climate Change (DECC)
- The Scheme will apply across England, Scotland and Wales
- Northern Ireland will need to develop their own legislation

FITs Eligibility

The specified maximum capacity for the scheme has been set at 5 megawatts (MW)

Small-scale low-carbon electricity technologies eligible for FITs include:

- Wind
- Solar photovoltaics (PV)
- Hydro
- Anaerobic digestion
- Domestic scale microCHP (with a capacity of 2kW or less)

FITs Eligibility

- The scheme will also support the first 30,000 micro combined heat and power (mCHP) installations with an electrical capacity of 2 kilowatts (kW) or less, as a pilot programme
- The scheme will not initially support solid and liquid biomass technologies, though these will continue to be supported under the Renewables Obligation at all scales
- Wind, solar PV and hydro projects of 50kW or less and microCHP projects supported through the pilot will have to use **Microgeneration Certification Scheme (MCS)** in order to be confirm their eligibility for FITs

FITs Elements

- The FITs1 will consist of two elements of payment, made to generators, and paid for, by licensed electricity suppliers. The largest suppliers (mandatory FITS suppliers) will be obliged to offer FITs, and smaller suppliers may participate if they wish
- The first element is a **generation tariff** that differs by technology type and scale, and will be paid for every kilowatt hour (kWh) of electricity generated and metered by a generator
- This generation tariff will be paid regardless of whether the electricity is used onsite or exported to the local electricity network

FITs Elements

- The second element is an **export tariff** which will either be metered and paid as a guaranteed amount that generators are eligible for, or will, in the case of very small generation, be assumed to be a proportion of the generation in any period without the requirement of additional metering
- **Therefore** a FITs generator may use electricity generated onsite, thus avoiding having to purchase that electricity from their supplier, or may export their generation directly to the grid, or (in many cases) some combination of the two

FITs Taxation

- All generation and export tariffs will be linked to the Retail Price Index (RPI), and FITs income for domestic properties generating electricity mainly for their own use will not be taxable income for the purposes of income tax
- Tariffs are set through consideration of technology costs and electricity generation expectations at different scales, and are set to deliver an approximate rate of return of 5-8% for well sited installations

FITs Application

- FITs will be paid to generators by licensed electricity suppliers, and all licensed suppliers will be required to make their fair contribution to the cost of the scheme
- Licensed suppliers with more than 50,000 domestic customers will be obliged to pay FITs (known as “mandatory suppliers”), whereas those with fewer than 50,000 domestic customers (known as “voluntary suppliers”) may choose whether or not to offer tariffs to generators above 50kW
- Generators may, if they wish, assign the rights to their FITs payments to another body through a contractual arrangement

FITs Application

- Small generators that commissioned and applied for accreditation under the RO on or after 15 July 2009 and before 1 April 2010 will have a window of opportunity during which they can elect to transfer to FITs
- If such generators wish to transfer to FITs with effect from 1 April 2010, they should notify Ofgem as soon as possible before this date, in order that the arrangements can be made in time
- Generators wishing to transfer to FITs with effect from 1 April 2011 should provide Ofgem with written notification of their intention no later than 31 August 2010, in order that this can be taken into account in calculating the level of the Renewables Obligation for the 2011/12 obligation period

FITs Application

- Unless small generators benefitting from this choice notify Ofgem of their intention to transfer to FITs, within the timescales stated above, they will remain in the RO
- All small generators transferring to FITs from the RO will need to find a supplier in order to be paid
- They will need to do so within 6 months of the date they transfer to FITs in order to avoid any interruption to their support

FITs Application

- They will receive the tariff level appropriate to their scale and technology, but the duration of their support will be reduced to reflect the support they will already have received under the RO
- To reduce the administrative complexity, all small generators transferring to FITs with effect from 1 April 2010 will have a standard 6 months' reduction in support, and all small generators transferring to FITs with effect from 1 April 2011 will have a standard 18 months' reduction in support

FITs Levels

Energy Source	Scale and type	Generation Tariff (p/kWh)			Duration
		Apr 2010 - Mar 11	Apr 2011 - Mar 12	Apr 2012 - Mar 13	Years
AD[5]	≤500kW	11.5	11.5	11.5	20
AD[5]	>500kW	9.0	9.0	9.0	20
Hydro	≤15 kW	19.9	19.9	19.9	20
Hydro	>15 - 100kW	17.8	17.8	17.8	20
Hydro	>100kW - 2MW	11.0	11.0	11.0	20
Hydro	>2kW - 5MW	4.5	4.5	4.5	20
Micro-CHP[6]	<2 kW	10.0	10.0	10.0	10
Solar PV	≤4 kW new[7]	36.1	36.1	36.1	25
Solar PV	≤4 kW retrofit[7]	41.3	41.3	37.8	25
Solar PV	>4-10kW	36.1	36.1	33.0	25
Solar PV	>10 - 100kW	31.4	31.4	28.7	25
Solar PV	>100kW - 5MW	29.3	29.3	26.8	25
Solar PV	Standalone[7]	29.3	29.3	26.8	25
Wind	≤1.5kW	34.5	34.5	32.6	20
Wind	>1.5 - 15kW	26.7	26.7	25.5	20
Wind	>15 - 100kW	24.1	24.1	23.0	20

Definitions

In relation to PV systems:

- Retrofit" means installed on a building which is already occupied
- "New Build" means where installed on a new building before first occupation
- "Stand-alone" means not attached to a building and not wired to provide electricity to an occupied building

FITs Levels

Wind	>100 - 500kW	18.8	18.8	18.8	20
Wind	>500kW - 1.5MW	9.4	9.4	9.4	20
Wind	>1.5MW - 5MW	4.5	4.5	4.5	20
Existing generators transferred from the Renewables Obligation		9.0	9.0	9.0	to 2027

How an individual installation is defined in order to verify capacity limits per installation

- If a generator installs two different technologies on a single site (e.g. a PV panel and a wind turbine) they will be classed as two different installations
- If the generator has multiple installations of the same technology, they will be classed as a single installation site when determining the tariff
- site is defined in relation to a number of factors including address, map reference and electricity meter identification

How an individual installation is defined in order to verify capacity limits per installation

- Any expansion of an installation within 12 months (of the same technology) will be treated as an increase in the capacity of the installation
- If an expansion takes place more than one year after confirmation in the Central FITs Register, the expansion will be treated as a separate station - the original installation will be treated as having continued in the same class, while the new installation will be rated at the capacity of the aggregate of the two stations

Ofgem FIT Guidance for Suppliers –industry overview so far

1. Deadline for 50kW-5MW to notify Ofgem of desire to switch from RO to FIT for 1 April 2010 start -28 Feb 2010
2. End of parliament consideration (40 days) - late March 2010
3. Start of FITs scheme -1 April 2010
4. Full FIT IT system -1 July 2010
5. Deadlinefor 50kW-5MW to notify Ofgem of desire to switch from RO to FIT for 1 April 2010 start -28 Feb 2010
6. Deadline for 50kW-5MW to notify Ofgem of desire to switch from RO to FIT for 1 April 2011 start -31 August 2010

Off grid generation (site generation)

- Off grid consumers generally use much more polluting forms of generation such as diesel generators, and they should be incentivised to move away from these
- The off-grid electricity supply will be eligible for FITs
- For off-grid FITs generators **the procedures currently used under the RO will be replicate** and require them to declare that the electricity generated has been used and that they comply with the scheme requirements in relation to metering

Off grid generation (site generation)

- Off-grid generators will receive a generation tariff
- Like on-site generators, they will also receive benefits from avoiding the cost of generating electricity by other means, e.g. diesel
- As off-grid generators do not have a direct relationship with a supplier they will have the right to approach any mandatory FITs supplier, who will be required to pay their FITs
- Voluntary FITs suppliers may also agree to provide FITs to off-grid generators

Rates of Return

- Tariff levels have been set to provide an expected rate of return, in real terms, of approximately 5-8% for well sited installations, taking into account the risks associated with deploying the different technologies and the likely effect those risks would have on investors' willingness to invest
- As the tariffs are linked to inflation, in nominal terms this rate of return could then be considered to be approximately 7-10%

Models for FITs in Practice

Onsite generation

Under the final tariff model, a householder or business that uses energy onsite will receive three different strands of benefit from FITs:

1. A fixed price for each unit of electricity generated by their installation.

   This price will remain the same throughout the lifetime of the installation's eligibility for FITs payments (subject to indexation);

2. An export tariff providing a fixed payment for exported electricity

Models for FITs in Practice

3. The benefit from reducing their imports of electricity by using a proportion of the electricity they generate in their premises

   This means they will be likely to be purchasing a reduced number of kWh of electricity from their supplier leading to lower electricity bills and also being at least partially shielded from future price rises in electricity

   The generation tariff and (deemed or metered) export tariff will be paid by the supplier that offers FITs selected by the generator, expected (in most cases) to be the generator's electricity supplier

Example

Let’s assume that 50% of generation is used onsite and 50% exported to the local grid.

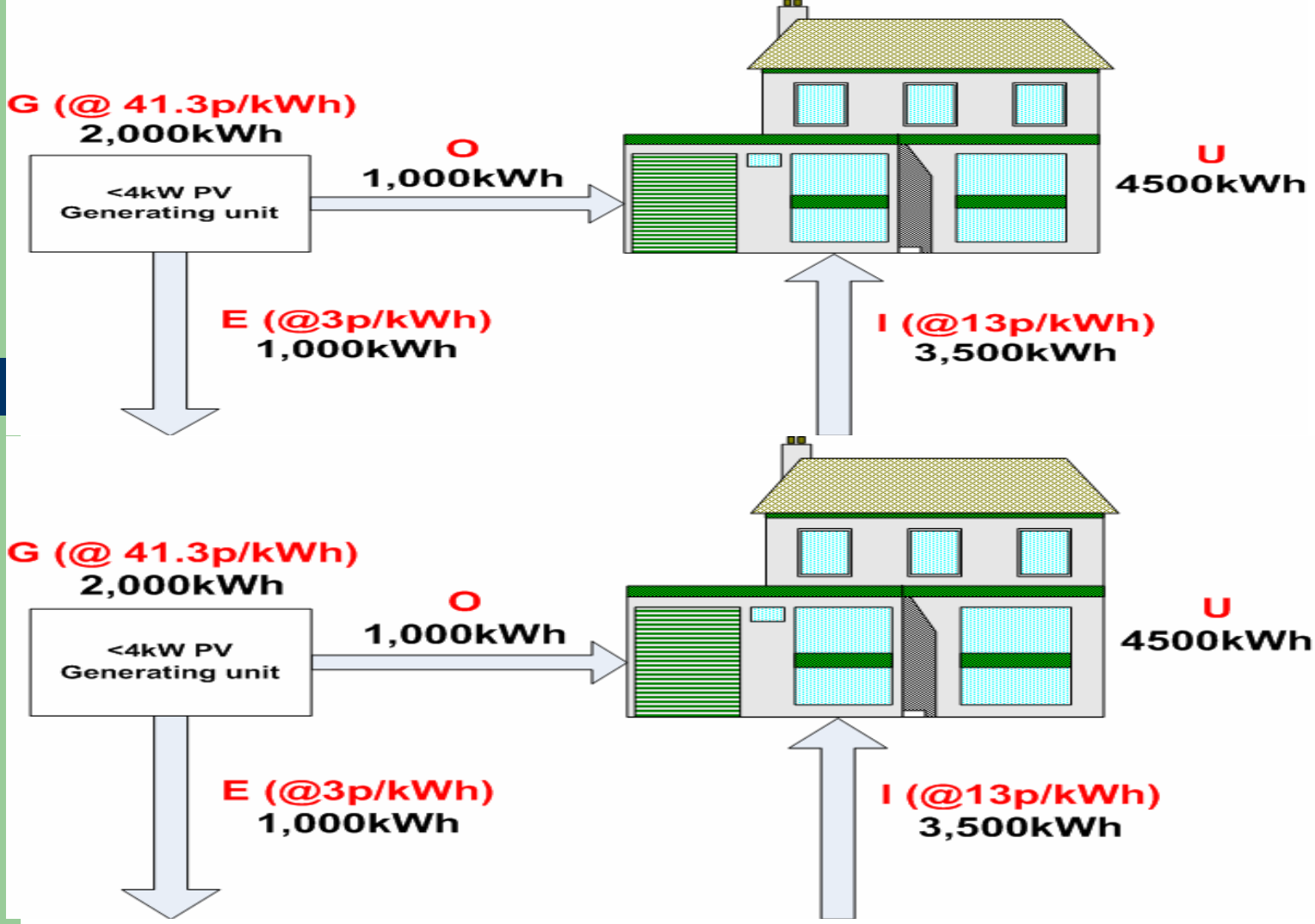
Under our (UK) RO transfer tariff, the generator will receive the full 9p/kWh for their generation as well as a 3p/kWh payment for metered or deemed exports.

Therefore the generator will receive

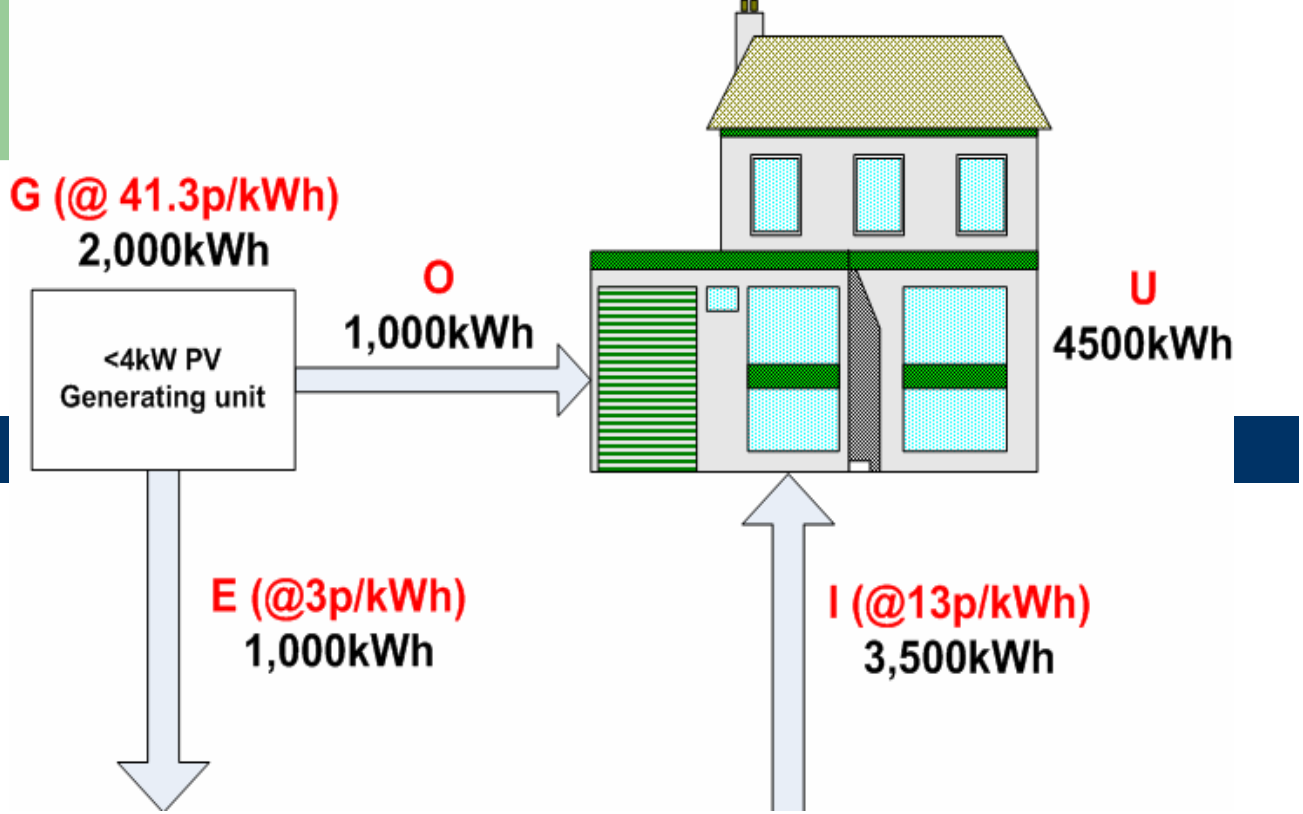
10.5p/kWh generated

That is:

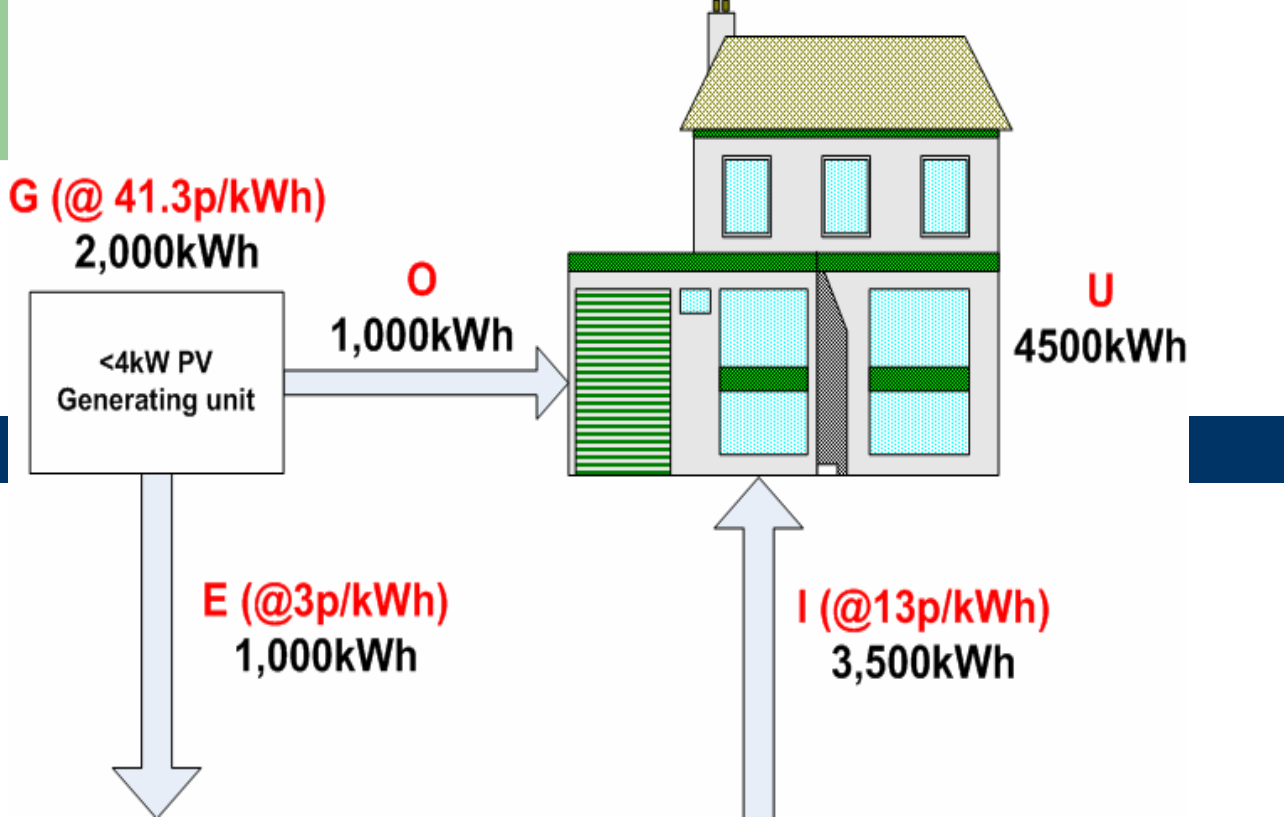
9p/kWh of generation plus 3p/kWh on half their generation



In this illustrative example, the site generates (G) 2,000 kilowatt hours (kWh) per annum (here a retrofitted <4kW solar PV panel) which is metered using the site's generation meter

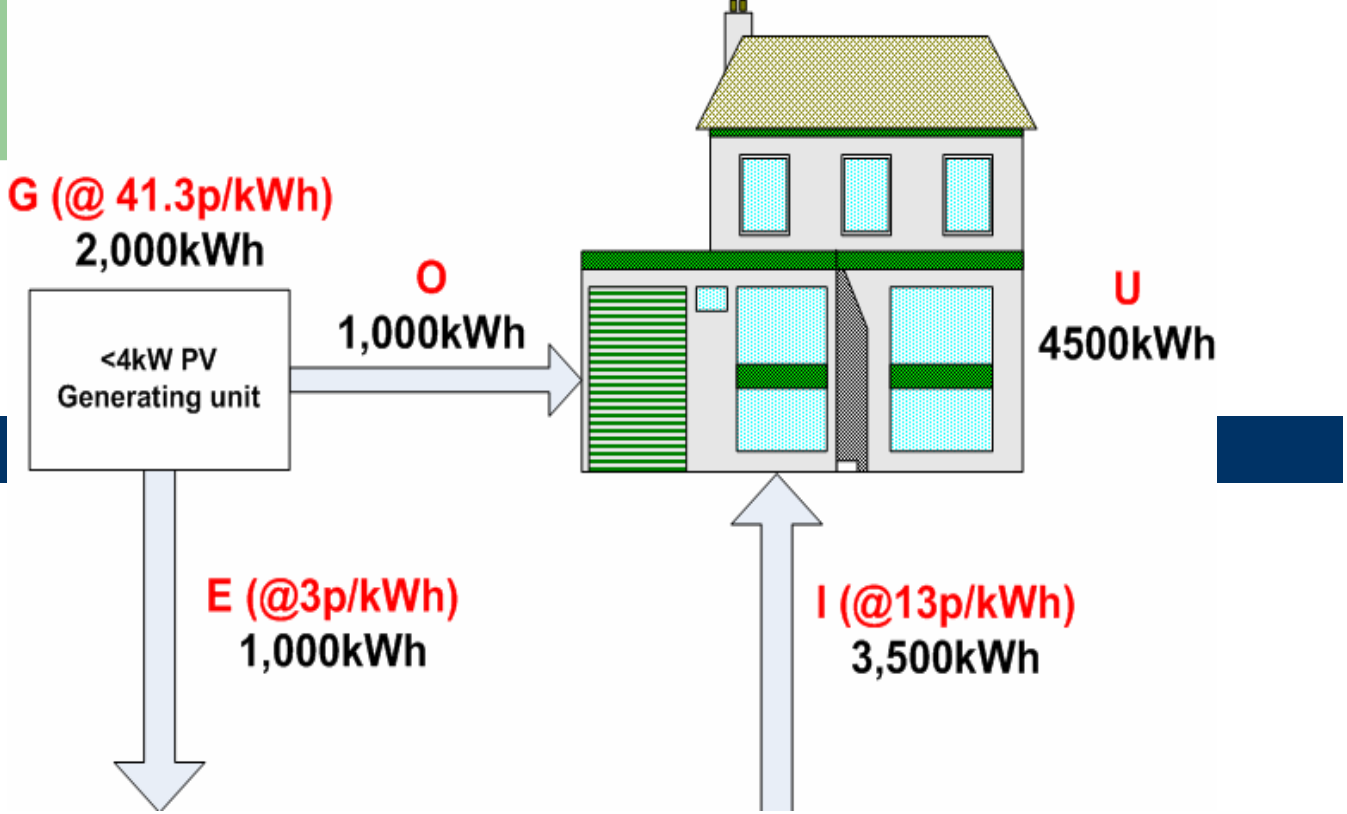


They are assumed to have exported (E) 50% of the generation onto the local electricity network when the electricity is generated at times when the household does not use it

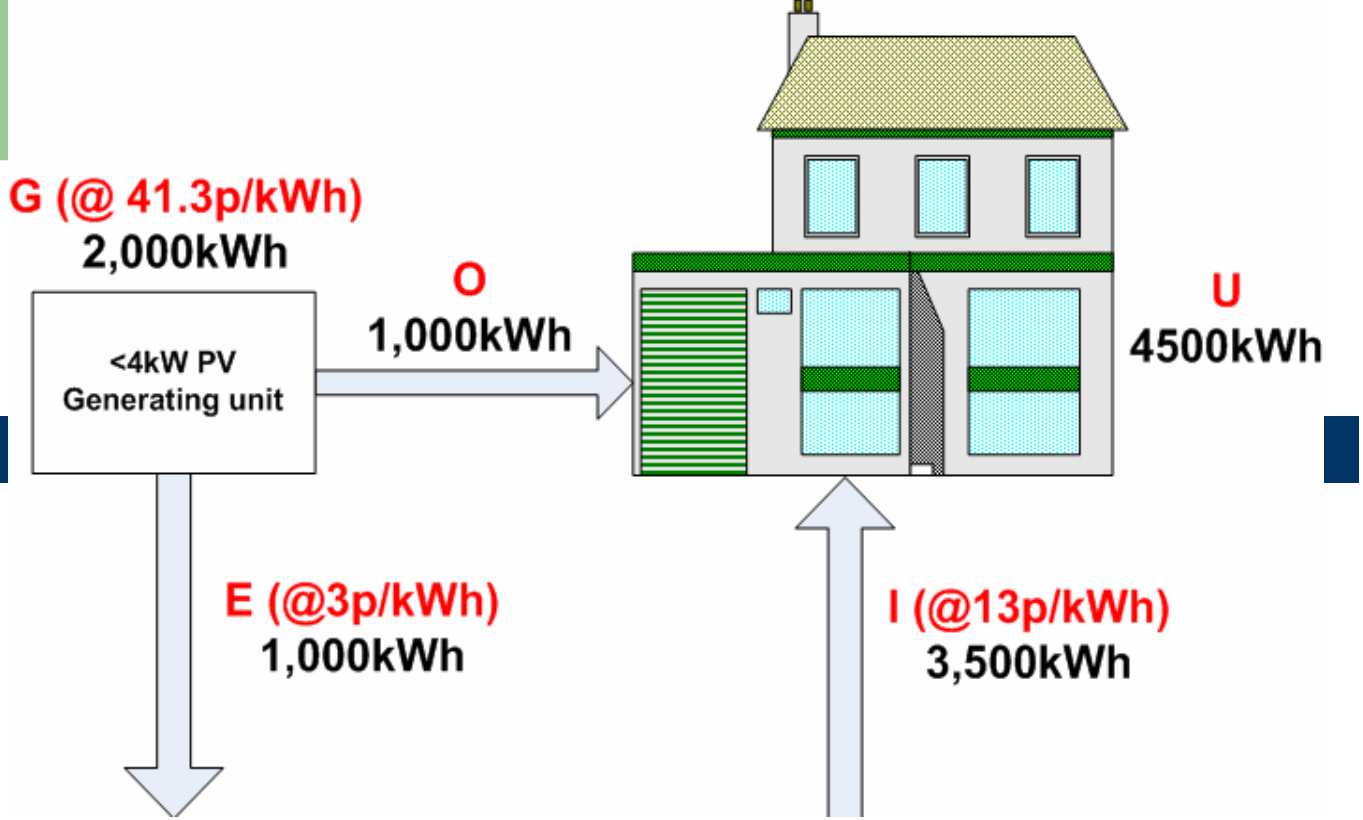


The other 50% of generation is used on-site (O).

The household uses (U) a total of 4,500 kWh per annum, therefore, they need to import (I) 3,500 kWh from their electricity supplier



Using this example, the generator will receive a FITs payment of £856 per annum (made up of a generation tariff payment of 2,000 kWh x 41.3 p/kWh = £826 plus an export tariff payment of 1,000kWh x 3p/kWh = £30).



- They also derive a benefit from the 1,000 kWh they generate and use on-site as that will offset 1,000 kWh they would otherwise have had to buy from their electricity supplier
- Assuming an import price of 13 p/kWh this would be a saving of £130 (1,000 kWh x 13 p/kWh

FITs Benefits

Note

Tariffs will be exempt from income tax

This means that domestic users and other income tax payers will **not** be taxed for any income received from the Feed-In Tariffs or Renewable Heat Incentive

Companies will be subject to Corporation Tax on their tariff income

Generation with 100% export / no use onsite

Generators who have no direct on-site use for their electricity, for example small commercial wind farms or communities with a shared installation, will receive two strands of benefit from FITs:

1. A fixed price for each unit of electricity generated by their installation
2. A price for each unit of electricity exported onto the electricity grid by their installation

Therefore, given a fixed tariff, the only variable in their reward will be the quantity of electricity they generate

Generation with 100% export / no use onsite

The generation tariff and export tariff will be paid by the supplier that offers FITs selected by the generator.

If export sites have not an electricity supplier the generator will need to approach FIT licensees to receive their FIT payment.

Additional information: new modifications in RO policy

The RO is currently the main financial support scheme for renewable electricity in the UK.

In order to ensure that the RO stimulates deployment of new renewable generation to the extent needed to meet 2020 target for renewable energy, it plans to make certain changes to the RO by means of the next Renewables Obligation Order (ROO) which will come into effect on 1 April 2010.

Additional information: new modifications in RO policy

In summary these are:

- Extension of the life-time of the RO to at least 2037
- Introduction of a 20 year limit on support under the RO
- Removal of the 20 Renewable Obligation Certificate (ROC)/100MWh limit in the RO
- Opening up the RO to include renewable generation outside the UK that meets specific criteria to help meet the UK EU target in the most cost effective way