LINKING RENEWABLE SUPPORT TO BUILDING ENERGY PERFORMANCE

Country/region	**Great Britain**
Type of E1st approach	D –Behind / Investment 6 – Requiring E1st
Energy carrier(s) targeted	Electricity
Sector(s) / energy system(s) or end-uses targeted	Residential/service sector/public sector
Implementing bodies	OFGEM (national regulator)
Decision makers involved	Building owners
Main objective(s)	Incentivising the improvement of building energy performance by conditioning the eligibility for feed-in tariff on energy performance level
Implementation period	2012-2019

Optimising distributed renewable investment along with energy efficiency seems to be a common-sense approach: it makes sense to size on-building renewable (or other) generation capacity to the demand that is already reduced to a cost-efficient minimum. Conditioning public support for distributed energy supply on a predefined minimum level building energy performance is an implementation of the E1st principle with a large scalability potential. This case is about linking feed-in tariff in the UK to minimum building standard.

1. Background

The support for building integrated distributed generation in Europe mainly concerns the investment and/or operational support for small-scale PV panels. The three main forms of production-based (operational) support for renewables are net metering, feed-in tariffs (FIT) or green certificates.

The FIT scheme was introduced in Great Britain (i.e., not including Northern Ireland) by the Department of Energy and Climate Change (DECC) in April 2010 (OFGEM, 2016). It replaced the Renewables Obligation (RO) as the main support for PV, wind and hydro generation units of 50kW or less. Eligible small-scale generators with a capacity between 50kW and 5MW have a one-off choice of applying under the FIT or the RO.

The FIT scheme created an obligation for certain electricity suppliers to make tariff payments for generating and exporting renewable and low-carbon electricity to the grid. The scheme ceased to operate in 2019.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 839509. The sole responsibility for the content of this website lies with the authors. It does not necessarily reflect the opinion of the European Union. Neither the EASME nor the European Commission are responsible for any use that may be made of the information contained therein.

2. How has the E1st principle (or similar concept) been implemented?

The regulatory drive behind the FIT scheme was the uptake of small-scale renewables generation. E1st was implemented as a condition of eligibility for the FIT scheme. There were several eligibility criteria for capacity units in the scheme:

- the site.
- the capacity of the generating unit.
- the commissioned date.
- the implications of Non-Fossil Fuel Obligation (NFFO)/Scottish Renewables Obligation (SRO) contracts extensions.
- energy efficiency requirements.
- benefits for Community Organisations and Education Providers.
- multi-installation tariffs.
- the combination of FITs and grants.

The energy efficiency requirement applied only to PV installations of 250kW or less wired to a building (defined as a roofed construction which has walls and where energy is used to condition the indoor climate, whether heating or cooling systems), or providing electricity to one or more such buildings.

FIT applicants had to demonstrate that the building has an Energy Performance Certificate (EPC) rating of level D or above to receive the higher tariff. If the EPC was in the band E, F or G, the applicant either had to carry out energy efficiency improvements before applying for the FITs or accept the lower rate for the lifetime of the tariff (20 years). The FIT scheme included three tariffs: higher, middle and lower. The higher level applied in the case of an EPC of level D or above and if the owner did not have 25 or more installations. If the owner had 25 or more installations, than it could only receive the middle tariff. The tariffs have been digressing quarterly due to the reducing cost of PV. As different levels apply to the various capacity bands (5 bands between 4 kW to 250 kW), their reduction due to low energy performance is a varying sum: in case of 0-4 kW units the lower tariff was approximately half of the higher tariff (OFGEM).

The GB Energy Performance of Buildings Regulations require an EPC whenever a building is constructed or marketed for sale or rent. The certificate gives an asset rating which indicates how energy efficient a building is. For the purposes of receiving the higher FIT, the energy efficiency rating band of the certificate needed to be considered (and not the environmental impact rating band). Community energy and school installations were permitted to receive the higher tariff with a lower EPC rating if certain conditions were met. An EPC was accepted only if 1) it was issued before the commissioning date of the PV unit (but less than 10 years before as this is the expiry of the EPCs) and 2) it was the most recent EPC that had been issued for the building. The application needed to be submitted to the national regulatory agency, OFGEM.

Even though the energy demand measured by the EPC (mainly heating demand) is not directly supplied by the generation it is linked to in the scheme (PV is either insufficient or not used at all to meet heating demand), rerouting households to prioritise energy efficiency investment over distributed generation within their own budget still holds the logic of E1st.

3. Effects / impacts

There is limited evidence of the impact of conditioning the higher-level feed-in tariff on the energy performance of the building it is wired to. A 2015 review assessing the FIT scheme claimed that the uptake of energy efficiency measures in properties with solar PV units between 2010 and 2013 revealed that the share of properties with at least one energy efficient measure installed increased from 56% to 61%, suggesting an increased level of energy awareness that could be attributed to the energy performance criteria introduced to the FIT scheme in 2012 (Nolden, 2015). Data from 2015 showed that 86% of households with solar PV installations had at least one energy efficiency measure installed, most frequently cavity wall and loft insulation.

4. Changes over time, if any

The feed-in scheme in GB was closed in March 2019 to new applicants (existing eligibility is not affected by this change); from 2020 onwards, small-scale renewable installations[1] are supported by a new scheme called Smart Export Guarantee (SEG). Under this scheme, all licenced energy suppliers with 150,000 or more customers must provide at least one Smart Export Guarantee tariff. Smaller suppliers can offer a tariff if they want to on a voluntary basis. A condition of eligibility is that power exported to the grid must be metered using a meter capable of reading exports on a 30-minute basis, even if this granularity is not required for the tariff and the same meter must be registered for the settlement. Suppliers would determine both the tariff per kWh and the length of the contract. The tariff must be greater than zero; at times of negative pricing, eligible renewable producers cannot be required to remunerate suppliers for electricity exported to the grid (BEIS, 2019).

However, unlike the feed-in tariffs scheme, there will not be a requirement for properties to meet minimum energy efficiency standards. There was no reasoning provided in the new regulation for terminating this condition. A possible reason might be that public/ratepayer money will no longer be used for supporting PVs (as in the case of FIT), but the suppliers are to offer a price for the electricity exported to the grid in a bilateral private contract with the consumer. As such, the room for public intervention is limited.

5. Barriers and success factors

Linking renewable support to building energy performance requires a credible, easy to acquire certification scheme in place. This is both the main success factor and main barrier. EPC is a tool that has been already implemented, independent of the renewable support scheme. The regulatory move to link the two is a virtually no-cost change, requiring just the addition of an energy efficiency condition to the list for feed-in tariff eligibility. However, if the EPC is not credible then it can act as a barrier for the successful implementation of E1st.

[1] Solar PV systems, onshore wind, anaerobic digestion, hydro – up to 5MW; micro-combined heat and power – with an electrical capacity of up to 50kW.

6. Replicability and scalability potential

As long as there is support for renewable installation wired to buildings, the option of linking it to a predefined energy performance standard or a set of energy efficiency improvements can be incorporated easily into the regulations. Despite the fact that renewable support cannot – by default – be supported by feed-in tariffs due to EU state aid legislation, several countries have opted for the flexibility offered in the EU rules with regard to small-scale units and retained the FIT scheme. Similar conditions could apply to investment support provided by the state for small RES installations. EU Member States that are eligible for EU cohesion fund support often offer such support in the frame of tenders financed form EU funds.

7. Sources and references

Web sources:

OFGEM Feed-In Tariff (FIT) tables: https://www.ofgem.gov.uk/environmental-programmes/fit/fit-tariff-rates

References:

BEIS (2019). The Future for Small-scale Low Carbon Generation: A consultation on a Smart Export Guarantee. Department for Business, Energy & Industrial Strategy, January 2019.

Nolden, C. (2015). Performance and Impact of the Feed-in Tariff Scheme: Review of Evidence. Report of the Sussex University for the DECC (Department of Energy and Climate Change)

OFGEM (2016). Feed-in Tariff: Guidance for renewable installations (Version 10.2). Ofgem (UK Office of Gas and Electricity Markets) Guidance, 20 June 2016.

ABOUT ENEFIRST

ENEFIRST is a 3-year project funded under the Horizon2020 programme, which gathers a consortium of partners from across sectors and regions: IEECP, BPIE, Fraunhofer ISI, CEU, RAP, IREES, TU Wien.

From definition to implementation, ENEFIRST aims at making the "Efficiency First" (E1st) principle more concrete and operational, better understand its relevance for decision processes related to energy demand and supply, its broader impacts across sectors and markets, focusing on the building sector and related energy systems in EU Member States.

> ***E1st gives priority to demand-side resources whenever they are more cost-effective from a societal perspective than investments in energy infrastructure in meeting policy objectives. It is a decision principle that is applied systematically at any level to energy-related investment planning and enabled by an "equal opportunity" policy design.***

ENEFIRST combines policy analysis and quantitative assessments of E1st impacts to develop policy guidelines and recommendations, following a process with continuous exchanges with stakeholders.

Visit www.enefirst.eu