FABRIC FIRST APPROACH UNDER THE BETTER ENERGY COMMUNITIES GRANT SCHEME IN IRELAND

Country/region	**Ireland**
Type of E1st approach	Behind the meter – Requiring E1st
Energy carrier(s) targeted	All energy carriers that can be used for space heating
Sector(s) / energy system(s) or end-uses targeted	Residential / public buildings/ commercial
Implementing bodies	Sustainable Energy Authority Ireland (SEAI)
Decision makers involved	Department of Communication Climate Action and Environment (DCCAE), SEAI and building owners
Main objective(s)	General objectives: improving the energy efficiency of the dwelling stock, reducing the use of fossil fuels, energy costs and GHG emissions. Specific objectives: increasing the ambition of renovation projects by requiring actions on the building envelope before other actions can be eligible to the grant
Implementation period	2012 – ongoing (Fabric first required since 2017)
Authors of the example	Janne Rieke Boll (BPIE)

The Better Energy Communities (BEC) scheme is one of the main grant schemes administered by the Sustainable Energy Authority of Ireland and aims at reducing the fossil fuel usage, energy costs and GHG emissions of the national building stock. The BEC scheme, which started in 2012, supports community-oriented innovative projects from various sectors, including residential housing upgrades and non-residential building works, and accepts applications from commercial and voluntary organisations, the public sector and private homeowners. Projects should achieve an energy performance level of a B2 (minimum C1 to receive funding) and are required to follow a *Fabric first* approach.

1. Background

The residential sector represents 23% of Ireland's final energy consumption. The stock includes about 1.7 million dwellings, 50% of which was built before 1981 (the first building requirements were set in 1979). Space heating represents about 61% of the residential energy use, which in Ireland is still mainly provided by oil (47%), gas (25%) and solid fuels (21%) (SEAI, 2018a). This explains why reducing GHG emissions is a key objective of the energy efficiency programmes.

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.

Ireland has been implementing energy saving programmes in the residential sector since 2000. 375,000 homes received government grants for energy efficiency measures between 2000 and 2016, i.e., about 22% of the dwelling stock. Energy efficiency in households improved by 32% between 2000 and 2016; the average specific final energy consumption of dwellings was reduced from 230 to 156 kWh/m².year (SEAI, 2018a).

Ireland introduced ambitious building renovation targets in their Climate Action Plan 2019 to try to reach the energy efficiency target of 20% in 2020, which was likely to be missed by 3-4% with the trends observed at that time (SEAI 2019a). The government set the goal of upgrading the energy performance of 500,000 buildings to a B2 Building Energy Rating (BER) by 2030, which would require the renovation of 50,000 houses annually beginning in 2021.

Since 2011, the Better Energy programme has been the main government scheme to support multiple energy efficiency upgrades and renewable energy installations with different grants for residential homeowners depending on the type of renovation works (Better Energy Homes) and the applicant's situation (Better Energy Warmer Homes). The Better Energy Homes scheme, for instance, includes specifications that are used by the other schemes (minimum requirements per action type, register of contractors qualified for the scheme).

The second largest grant programme is the Community Grant, specifically the Better Energy Communities scheme, which was introduced in 2012. This national renovation scheme supports community-oriented energy efficiency projects through capital funding, partnerships and technical support and accepts projects from housing associations, the private and public sector (public and commercial buildings) as well as community-based organisations. SEAI publishes a new call for proposals and related Application Guidelines every year (see SEAI 2019b, 2018b and 2017), often with minor changes to the requirements and additional pilot schemes.

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

SEAI implicitly includes an E1st approach in the funding requirements of the Better Energy Communities scheme. SEAI uses the requirements of the €19 million budget (provisionally 2020) BEC grant scheme to increase the ambition of the energy efficiency improvements in the building sector, so that most of the renovations achieve the target level of B2 Building Energy Rating.

Projects that apply for funding under the grant scheme are required to demonstrate that energy efficiency improvements (wall insulation, roof insulation, upgrade of windows and doors) are given priority over the installation of renewable heating systems or other smart technologies. This Fabric first criterion is only mandatory for residential projects, acknowledging that it is not always a practical solution for non-domestic projects. In any case, the eligibility criteria communicate a strong focus on energy efficiency measures.

Funding varies between €50,000 and €1,500,000 per project, and the level of subsidies depend on the type of building and occupants. Private non-energy poor or local authority homes can receive up to 35% of the total costs, while energy-poor private homeowners can receive up to 80%.

The E1st concept has been applied in the Residential Combined Fabric Upgrade, a pilot additional support package tested in 2017. The Combined Fabric Upgrade releases a financial bonus (15% of additional support) when ALL fabric-related measures under Step 1 are carried out and lead to higher building energy

performance, before upgrading heating installations (step 2) or applying additional renewable installations (step 3). The measures of Step 1 are roof insulation, external wall insulation, full window replacement, external door replacement, minimum air permeability test performance and ventilation requirements of a mechanical ventilation system (SEAI, 2017). Credits for Steps 2 and 3 are only released when all measures of Step 1 are carried out demonstrating the priority put on investments that reduce heat demand over investments that improve the efficiency of heat supply.

In addition, only when all measures were carried out to meet the minimum technical and energy efficiency specifications of the scheme as listed in the guidelines was a bonus provided. Though this pilot scheme was only tested in 2017, the rationale behind this *Fabric first approach* was transferred to the following funding cycles.

Since 2017, applicants are required to demonstrate that energy efficiency measures will be given priority to be deemed an eligible project, and since 2019, eligible projects must demonstrate a post-renovation Building Energy Rating (BER) of B2. Applicants might still receive funding if there are adequate reasons for not achieving the B2 level, though this is the exception. This approach supports the goal of attaining energy efficiency first, with renewable and smart technologies playing a secondary role.

3. Effects / impacts

The Fourth National Energy Efficiency Action Plan from 2017 states that the BEC scheme provided over €16 million in grant funding for energy efficiency upgrades in 2016 to more than 2000 homes and close to 300 community and commercial buildings (DCCAE, 2017). An investment of €55 million was leveraged in total, supporting over 700 direct and indirect jobs across Ireland. In total, more than 15,000 homes and hundreds of communities, private and public buildings have received energy efficiency upgrades. There is no information publicly available yet about the specific impacts of the requirements related to the Fabric first approach. However, SEAI observed a decrease in the number of applications (especially from product manufacturers) and an increase in the average investment and number of measures per project. This data shows that the new requirements have helped to encourage more ambitious projects. For more details, see the section about barriers and success factors below.

4. Changes over time, if any

The Better Energy Communities scheme was introduced in 2012 as an innovative grant scheme supporting large-scale energy efficiency improvement projects, including demonstration projects and projects alleviating energy poverty. The aim was also to trigger the implementation of deeper and more technically and economically challenging measures than is possible under other grant schemes.

The 2017 scheme cycle was officially launched in December 2016 with a budget of €30 million in grant support for community energy projects. This presented a 50% increase in funding compared to the 2016 level. Moreover, the Residential Combined Fabric Upgrade Package was introduced, providing bonus grant funding for homeowners who engage in a combined fabric upgrade that involves a significant energy efficiency upgrade to their home as explained above. This pilot only ran during the 2017 grant cycle. Since 2017, this Fabric first approach is now required in order to prevent inappropriate and expensive renewable heating systems or other energy services of being installed without improving the energy performance of the building envelope. In the previous years, SEAI had noticed a trend of product manufacturers proposing

projects which focused on their products rather than what was necessary for the buildings in question (Flynn, 2020). SEAI thus decided to implement the Fabric first approach progressively:

- In 2017, contractors were requested to follow the Fabric first approach by first addressing the building envelope before other work can be eligible for grants.
- In 2018, projects were requested to achieve at least a B2 rating, or to explain why it was not feasible to do so.
- From 2019 on, projects must achieve at least a B2 rating to be eligible for funding (a C1 level is exceptionally possible under certain conditions).

This ensures that contractors only propose work to buildings which address the efficiency needs of the buildings, building owners and occupants. The requirement of a high energy performance level also ensures that contractors have to focus on the building envelope first. This level can rarely be met by only improving the heating system (except if the building envelope is already well insulated).

5. Barriers and success factors

With its long experience with designing and administering a grant scheme for the residential sector, SEAI can build on existing knowledge and create synergies between the programmes. The proven technical requirements and specifications and the professional execution of the measures (via registered qualified contractors) from the Better Energy Homes schemes is a success factor the BEC scheme can benefit from. Over the years, SEAI has been fine-tuning its approach and funding requirements to accelerate energy renovations. The requirements to carry out comprehensive insulation measures to increase energy performance of the building envelop are more complex and cost-intensive than a single replacement of a heating system. This resulted in a 50% decrease in project applications with the introduction of the Fabric first requirement, mostly due to fewer applications by product manufacturers who earlier designed projects to promote their products and technologies.

A positive effect of the new requirements was that the number of measures and total costs per building increased significantly in recent years, in line with the objective of the scheme to encourage ambitious renovation projects. Though the increased costs had a significant impact on the project volume right after their implementation, SEAI now sees new interest in the Fabric first approach by experienced contractors. The new technology is indeed becoming more acceptable and the costs are moderating (Flynn, 2020).

6. Replicability and scalability potential

With the residential sector responsible for 23% of final energy consumption and ambitious renovation targets in place, the Fabric first approach is an important feature in Irish building renovation and is applied across grant schemes.

The other energy efficiency grant schemes implemented by SEAI also follow the Fabric first approach, more or less explicitly:

- the scheme information always recommends to start the project by looking at the energy performance of the building.
- the grants first highlighted in the SEAI communication on grants for households are the ones for insulation actions.

- the grants available for heat pumps include a technical prerequisite that the building must have a minimum efficiency (BER) level (see the example about the SEAI Heat Pump Grant).

The replicability of the approach to other European countries is theoretically possible given high energy efficiency targets. Although other countries did not explicitly implement a *Fabric first* approach in their grant schemes, the replicability potential is high. Other financial schemes enable higher amounts of funding for higher energy performance, such as the KfW loan programme "Energieeffizient Sanieren" in Germany, which gives out higher repayment subsidies for higher energy performance standards (30% for KfW-Effizienzhaus 85, 40% for KfW-Effizienzhaus 55).

7. Sources and references

Web sources:

SEAI webpage about the grants of the Better Energy Communities scheme:
https://www.seai.ie/grants/community-grants/project-criteria-and-funding/

References:

DCCAE (2017). Fourth National Energy Efficiency Action Plan 2017-2020. Department of Communication, Climate Action and Environment.

Farrell, S. (2020). Communities Housing Scheme. Workshop Presentation, January 2020.

Flynn, J. (2020). Personal communication, April 2020.

Randles, J., Minch, R., Purcell, K., Hanniffy, C., Coyle, O. and Flynn, J. (2019). Communities 2019 Preview. Presentation of the Sustainable Energy Authority of Ireland

SEAI (2019a). National Energy Projections 2019. Sustainable Energy Authority of Ireland

SEAI (2019b). Communities Energy Grants Application Guidelines 2020. Sustainable Energy Authority of Ireland

SEAI (2019c). Community Areas Housing Efficiency Strand 2020 Application Guidelines. Sustainable Energy Authority of Ireland

SEAI (2018a). Energy In The Residential Sector – 2018 Report. Sustainable Energy Authority of Ireland, April 2018.

SEAI (2018b). Better Energy Communities Application Guidelines 2018. Sustainable Energy Authority of Ireland.

SEAI (2017). Better Energy Communities Application Guidelines 2017. Sustainable Energy Authority of Ireland

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