

Appendix 5

Whole House Retrofit Pilot

Energiesprong Overview



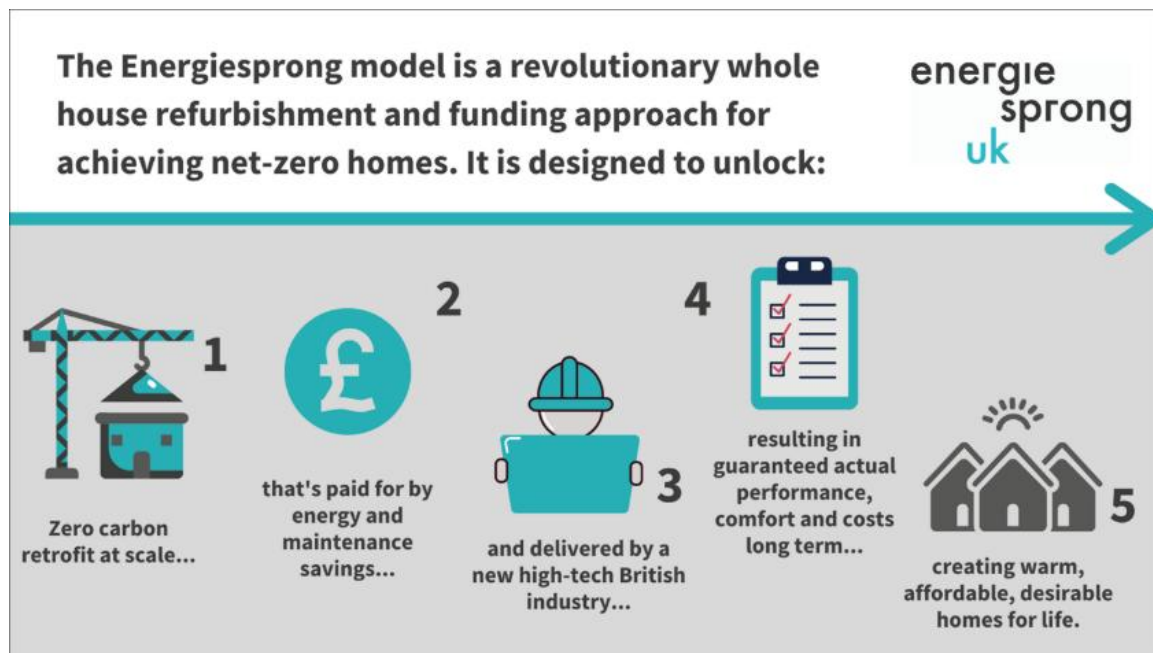
The Energiesprong Approach

Energiesprong UK (ESUK) is a not-for-profit market development organisation aimed at creating a mass market for desirable, affordable Net Zero Energy (NZE) whole-house retrofit and new build.

Energiesprong (ES) uses a proven approach to completing whole house retrofit to Net Zero in one go. Over 6,500 homes have been delivered in the Netherlands, applewebdata://D71419C2-EEFB-492B-95E4-0671F904196A/ - [ftn1](#) and four pilot programmes including 165 homes, six social landlords and four solution providers have been delivered in the UK. The UK market is now being strategically scaled up: a further 1,500+ homes across nine social landlords are under contract in the UK procured via the Retrofit Accelerator Homes Innovation Partnership (RAHIP¹).

The NZE retrofit involves taking a whole house approach, including maximising the fabric improvements available to a given property, as well as the addition of PV solar on the roof and an energy module which includes the PV inverter, a heat pump, ventilation, smart monitoring systems and often battery storage. The ES approach also incentivises maximising the use of modern methods of construction such as off-site construction, to reduce time and disruption on site, and to build the supply chain capability to deliver solutions that will support developing scalable and sustainable solutions to retrofit and providing wider green economy opportunities. This is illustrated in the diagram below:

¹ RAHIP is a new OJEU compliant public procurement mechanism sponsored by the Greater London Authority (GLA)



The ES approach has been designed to unlock the significant benefits of NZE retrofit for social landlords such as BCC, it's residents, communities, and the local economy over the long term.

Below is an example of Keswick St Homes in Nottingham before and after the Energiesprong retrofit:



Benefits to BCC residents and community

- Providing residents with warmer, nicer, quieter homes to live in – with lower, more predictable energy bills and protection from price rises over time.
- The Energiesprong promise guarantees comfort every day for an affordable total cost, including heat, hot water, plug power, lighting and appliances. This

comfort bundle is backed up by a guarantee on the energy performance (kWh) of the retrofit by the solution provider.

- It improves the health of residents by reducing issues associated with damp and mould.
- New approaches to delivering the works are designed to complete the works in a shorter time, with less disruption and residents able to remain in their homes during the works.
- It provides greater control over their energy use, with better in-home controls and monitoring.
- By taking a whole house or whole block approach it provides older properties with new modern look, supporting the wider regeneration of an area that builds a sense of pride in the local community.

Benefits to BCC

- NZE in one go is an ambitious approach to decarbonising the housing stock and can be a key contributor to achieving net zero by 2030
- Supports optimisation of planned asset management with breadth of interventions extending asset life
- The design and works are underpinned with a contractual performance guarantee, on the works, energy performance and maintenance costs over the long term.
- It will maximise asset values and reduce maintenance costs, with smart whole house monitoring offering the opportunity to digitalise asset management to provide improved stock data.
- It avoids duplication of costs on the enabling works (e.g. survey's, scaffolding, services) that would otherwise be incurred by phasing the works needed to get to NZE through a series of interventions.
- A part of the significant savings generated by NZE is shared with the BCC via comfort plan payments. The comfort charge is an amount charged by BCC to the tenant representing a share of the savings made / costs avoided by the tenant.
- The ES model will allow BCC to develop new cash flows via the comfort plan that can be used to support a long-term strategic approach to scaling up the decarbonisation of all homes in the city.
- It creates a new market for modern methods of construction which have the greatest potential to scale by bringing the cost and time to retrofit down. BCC is in a particularly good position to do this because of the large numbers of properties that are the same archetype, allowing for a more rapid scaling up.

Benefits to the supply chain and local economy

- Delivering to an ES standard using RAHIP provides supply chain partners with the guarantee of scale needed to invest and innovate to develop new modern methods of construction. It does this in a staged way offering higher per property budgets to prototype and pilot, with cost reductions being delivered in the later stages as the volume of homes is increased.
- Increasing numbers of local jobs and training opportunities are generated through the prototype, pilot and commercialisation phases.

- There is also the opportunity to catalyse the development of localised off site construction manufacturing hubs, which could provide new retrofit solutions to both BCC and neighbouring areas if sufficient pipeline to scale was provided.

To take advantage of these benefits BCC needs to procure a new type of product, which is a design, build and guarantee retrofit. The guarantee, element places a requirement on the solution provider to guarantee the energy performance and ongoing maintenance costs for at least 10 years. This is supported by the solution provider providing and agreeing a fully costed plan with BCC for 30 years.

At this stage of maturity, the market is supporting a 10-year guarantee. As the market matures and service providers gain more confidence and knowledge the target is to standardise around a 30-year guarantee. It is this guarantee of performance that supports the 30-year business case that can now include an investment envelope made up of income and savings:

- Aggregating planned routine and maintenance and major repairs over a 30-year period
- Introducing a 'Comfort Plan' for tenants under which they pay the housing provider (the Council) a share of energy savings made / energy costs avoided.
- Other revenue streams as they become available, for example export tariffs, time of use tariffs and possibly ECO.

Performance Guarantees

The Performance Management Framework and Performance Guarantee Agreement are key to ensuring both BCC and its tenants receive the benefits promised. In designing an ES NZE retrofit the solution provider is guaranteeing:

- Planned maintenance costs of the retrofit improvement works over 10 years
- Equipment replacement cycles and costs over 10 years
- Energy performance (kW) over 10 years assuming the residents operate their homes within the agreed ES comfort bundle.

There are 2 performance guarantee options available under the ES model. Either an Operations and Management Performance Guarantee (OMPA) or a Performance Guarantee Agreement (PGA).

Under the OMPA the solution provider who delivers the retrofit also provides the ongoing operational maintenance under a separate contract. They are liable for the usual equipment or installation failures, however in addition to that they are contractually liable for maintenance or replacement costs that exceed the agreed plan over the first 10 years.

The solution provider is also liable to refund energy imports that exceed the guaranteed net energy import level agreed, subject to resident usage being within the agreed range.

Under the PGA the solution provider is still liable for maintenance costs and equipment replacement costs that exceed the agreed plan over the first 10 years, as

well as the excess net export. The key difference is the maintenance is delivered via a separate 3rd party contract.

Given the importance of the performance guarantees to ensuring both BCC and its tenants realise the benefits of the retrofit the ES performance management framework sets out the comprehensive performance verification measures required at the point of handover and commissioning. The performance guarantee agreements also outline the regular performance measures and reporting required over time.

Retrofit Accelerator Homes – Innovation Partnership (RAHIP) Framework

RAHIP is a new OJEU compliant public procurement mechanism designed to drive innovation, cost reduction and scaling up and delivery of whole house net zero retrofit using the ES approach.

A panel of 4 solution providers² have been procured by the Greater London Authority (GLA). The Innovation Partnership Framework is available for projects delivering phased works through until 2030.

RAHIP allows suppliers to develop new products by providing an increasing pipeline through phased contracts, with progression to the next phase contingent on the supplier meeting specified performance targets. Cost is one of the key performance targets, and so cost reduction steps are built into the procurement and delivery of the scheme.

The aim is to drive down the cost of whole home retrofit with each phase – from c £85K in stage 2 to c £55K in stage 4. At the end of phase 4 the objective is that the project can create a framework involving all the providers who have passed the four phases with a proven product. This framework will then be available to all social landlords and can create a mass market for the large scale roll out of retrofit.

Innovation Partnership Procedure

Assessment of UK market development of Energiesprong shows that using traditional low volume project by project procurement has not created the volume to sufficiently stimulate the supply market or drive the economies of scale necessary to achieve an Economic Price Point.

The GLA is helping to create scale and longevity in the market for Energiesprong retrofit by enabling a number of Housing Providers to aggregate their Energiesprong projects into a structured development procurement process through an IP. This is with the aim of stimulating competition in the market and fostering investment in solution innovation, industrialisation and digitisation that will enable the Solution Providers to offer Energiesprong standard retrofit at an Economic Price Point.

² United Living, Equans, Osborne Group, MIDAS Group

Innovation Partnership Developmental Process

The Innovation Partnership (IP) Developmental Process runs in Stages as set out in Figure 1 below with the projects delivered in Stages.

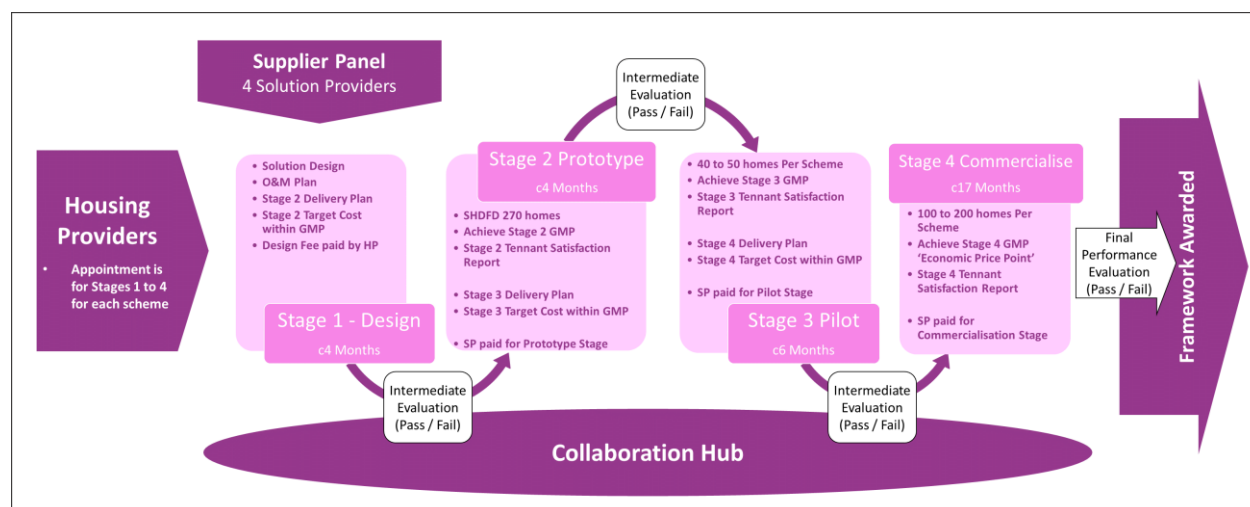


Figure 1: IP Developmental Process

Contracts for each scheme will be put in place to implement the IP and to provide for all four Stages of the IP; design (Stage One), prototype (Stage Two), pilot (Stage Three) and commercialisation (Stage Four).

At the end of each Stage, the *Solutions Provider's* performance is assessed against the Performance Table. If the *Solutions Provider* passes the assessment at the end of each of Stages One to Three and the other conditions stated in conditions of contract are met, the *Client* issues a notice to proceed with the project to the next stage, in the form as set out in Schedule 15. If the *Solution Provider* fails to pass the assessment for that Stage they will not progress the project to the next Stage of the IP and they will not be issued with a notice to proceed by the *Client*. If the *Solution Provider* is successful in all four Stages such that the Framework Conditions are satisfied, then the GLA will serve a Framework Commencement Notice in respect of the Framework Agreement.

Comfort Plan

At the heart of the ES approach is the household 'Comfort Plan'. The Comfort Plan is an agreement between BCC and the tenant. The plan establishes a fixed kWh/year and comfort charge for guaranteed 'comfort' outcomes – certain levels of heating, hot water and electricity use.

The Comfort Plan charge delivers warm rooms every day, enough daily hot water for household use, and enough power for normal use of plugs, appliances and lighting. Residents can choose to use more than their allowance, by paying their utility company for the additional units of electricity used as they will still have connection to residual supply.

The aim is that the combined residual electricity bill and Comfort Plan charge will be less than the tenant's current energy bills. BCC has significant flexibility in the way the Comfort Plan charging level is set. There are also options to provide additional discounts or payment holidays to support vulnerable or fuel poor residents.

Once proven via the WHR pilot BCC will be able to extend this approach to apply elsewhere in the city, which can provide new cash flows to invest in scaling up the transition to net zero by 2030.

As the Comfort Plan would form a new contract between BCC and tenants, BCC can choose the level of savings contribution – the solar PV contribution also helps to maximise the energy savings for tenants as a free of charge source of energy.

The Comfort Plan charge can be applied through a comfort plan agreement (template legal agreement developed with specialist legal advice via the RAHIP programme)