

## **Energy from renewable resources/'green tariff' and synagogue insulation**

This resource has been kindly shared by Michael Popper MA (Cantab) CEng MCIBSE MEI from P3r Engineers Ltd. EcoSynagogue is very grateful for his expertise and generosity. EcoSynagogue and its constituent Synagogue members have no responsibility for advising on these matters, the notes are made available purely as an information resource and that Synagogue members should take professional advice.

This resource is being used to support the following Audit questions...

8. The energy (e.g., electricity) supplied to our Synagogue building(s) is generated from renewable resources and/or charged according to our supplier's 'green tariff'.

10. Our Synagogue premises are insulated wherever possible in our: a) main sanctuary; b) our halls; c) our offices and classrooms.

The policy should be for all electricity supplied to the buildings to be purchased from a renewable electricity supplier.

Fossil fuels (oil and gas) should be phased out as boilers are replaced in time by heat pumps. As an alternative, there is a possibility that mains gas may be de-carbonised in future and replaced with hydrogen or an alternative sustainable fuel source.

Insulation standards are increasing with the latest version of the Building Regulations. However, it is widely considered in the architectural and engineering professionals that the new Regulations have not gone far enough in responding to the Climate Emergency.

The Passive House concept was developed 30 years ago in Germany and is now accepted as the most feasible way to achieve net zero energy buildings. They are so well insulated that there is no need for a heating system. The building is heated by solar gains through the windows and human activity from cooking, bathing, and appliances. The standard is for new and existing buildings, the latter called EnerPHit.

<https://www.passivhaustrust.org.uk/>

Levels of insulation are such that the overall thickness of walls and roofs would be 500-600mm compared with 300-400 for normal construction. Windows should be triple glazed.

Another guide to insulation is contained in the London Energy Transformation Initiative (LETI) Design Guide and Retrofit Guide, which call for similar standards to Passive House.

<https://www.leti.london/cedg>  
<https://www.leti.london/retrofit>

**Useful Resources:**

National Energy Foundation

<https://nef.org.uk/energy-saving-in-the-home/>

Energy Saving Trust

<https://energysavingtrust.org.uk/energy-at-home/>

**Financial Incentives:**

Smart Export Guarantee Solar PV (exporting electricity to the grid)

Typically 5.5p/kWh exported

<https://yougen.co.uk/financial-incentives/smart-export-guarantee/>

Boiler Upgrade Scheme – domestic only (replacing boiler with heat pump)

£5,000 per property

<https://www.ofgem.gov.uk/environmental-and-social-schemes/boiler-upgrade-scheme-bus>