

NICVA Energy Audit and renewable energy feasibility

The Northern Ireland Council for Voluntary Action (NICVA), a representative body for the voluntary and community sector in Northern Ireland engaged with Action Renewables to conduct an energy audit of their premises. This audit included a review of electricity tariffs, analysis of electricity and gas consumption throughout a normal year, identification of seasonal peak demands and significant energy users. Energy performance was also benchmarked in relation to published figures. Our consultants identified opportunities for energy efficiency improvements for both electricity and heating use on site.

As part of this audit, our consultants also considered the suitability of the building for integration of renewable energy technologies. The suitability of a Solar Photovoltaics (PV) system was assessed. This involved a detailed review of the organisation's electricity consumption over previous, pre-pandemic years and took into consideration the roof design and structure. The output of a proposed



solar PV installation was calculated using industry software which uses solar irradiation data over a ten-year period. Using the projected output of various solar PV system scenarios / solar products available, an estimation of annual on-site consumption and exported electricity was calculated which allowed for cost benefit analysis, CO₂ reductions and pay back periods to be calculated. In addition, renewable heating options were considered, such as biomass heating, based on the heating demand profile of the building. This allowed the organisation to compare the performance of their existing boiler with a renewable heating alternative which included a breakdown of costs, emission intensity and pay back periods which allowed the organisation to understand the benefits of switching to a renewable heating source.

Our consultants set out several recommendations which the organisation should consider to make their building more energy efficient with associated capital costs, cost savings, and carbon emission reductions which can be achieved through implementation. The organisation is currently setting targets for CO₂ reductions and the recommendations provided a framework for achieving a large proportion of these.

NICVA Baseline Emissions Reporting

The Northern Ireland Council for Voluntary Action (NICVA), is a representative body for the voluntary and community sector in Northern Ireland. Like many businesses NICVA have made a commitment to reducing carbon emissions and engaged with Action Renewables to explore the potential for the organisation to become net zero carbon by 2030.

As part of the energy audit conducted for NICVA our consultants also completed a baseline emission report comprising the CO₂ emissions related to energy use at the building. Energy data was gathered and analysed as defined in the Greenhouse Gas Protocol. A baseline year was established for the organisation (2019) which used activity metrics and benchmarking to enable NICVA to compare their performance against similar office-based organisations. Several opportunities were identified for the organisation to reduce their emissions (through the energy audit), improve sustainability, and increase the efficiency of their facilities, and based on this, an initial short term target reduction in CO₂e of 30% by 2025 was recommended (based on reductions of Scope 1 and 2 direct emissions). Recommendations were made for implementing processes to allow scope 3 emissions to be quantified in future, for example: recording mileage and attendee travel, catering information, waste disposal and product/consumable procurement.

These recommendations and Action Renewables' advice informed the setting of NICVA's first milestone target to reduce its scope 1 and 2 emissions by 50% by 2025, and informed the subsequent development and implementation of a first phase of works in 2022. These included enhancements to the building insulation, replacement lighting and controls, and replacement with higher efficiency boilers resulting in a projected 27% reduction in scope 1 & 2 emissions against the 2019 baseline; delivering 54% of the 2025 target. Further phases are planned.