



# Case Study

# **Old Kilpatrick**



## Summary

- **Location:** Old Kilpatrick, Scotland
- **Capacity:** 290.44kWp
- **Type:** Solar PV – Ground Mounted
- **Developer:** Emtec Energy (EPC)
- **Owner:** Scottish Water
- **Panel type:** Longi 530W
- **Completion date:** December 2024



For over 13 years, Emtec Energy has delivered high-quality solar PV and battery storage solutions across the UK, enabling businesses to lower energy costs and achieve Net Zero. Specialising in design, engineering, and installation, Emtec has deployed 52MW of solar PV projects. Their turnkey services prioritise precision, safety, and sustainability, helping industries reduce operational costs and future-proof energy use.



## Overview

Emtec Energy successfully delivered a 290kWp ground-mounted solar PV system at Scottish Water Horizons' Old Kilpatrick site, a key reservoir in West Dunbartonshire. This £485,000 project reflects Emtec Energy's commitment to advancing Scotland's low-carbon transition by integrating renewable energy into critical infrastructure. The installation consists of 548 Longi 530W modules and two SolarEdge inverters, designed to generate 261,605 kWh of clean energy annually. This output meets 46% of the site's energy needs and offsets approximately 48 tonnes of carbon emissions each year, significantly reducing the site's environmental footprint and aligning with Scottish Water's ambitious target of achieving net-zero emissions by 2040.

A key challenge in this project was optimising the available space while ensuring minimal disruption to the site's ongoing operations. The reservoir plays a vital role in local water management, necessitating a careful approach to the installation process. Emtec Energy collaborated closely with Scottish Water Horizons to ensure a seamless and efficient integration of the solar PV system within the existing infrastructure. By leveraging innovative design strategies and advanced engineering techniques, the project was able to maximise energy generation while maintaining the reservoir's critical functions.



In addition to providing a reliable renewable energy source, this system offers long-term operational savings, reducing the site's dependency on grid electricity and enhancing energy security. The installation not only delivers significant cost reductions but also strengthens Scottish Water's commitment to sustainable development. By incorporating solar power into its operations, Scottish Water is setting a strong example for other utility providers looking to embrace renewable technologies.

The successful execution of this project underscores Emtec Energy's expertise in delivering bespoke renewable energy solutions, supporting essential infrastructure while driving Scotland's transition to a more sustainable future. This project highlights how strategic renewable energy investments can effectively contribute to reducing carbon emissions while ensuring long-term energy efficiency.

## Project Summary

Emtec Energy successfully delivered a 290.44kWp ground-mounted solar PV system at Scottish Water Horizons' Old Kilpatrick site. The installation features 548 Longi 530W panels and two SolarEdge inverters, generating 261,605 kWh of clean energy annually. This output covers 46% of the site's energy demand and offsets approximately 48 tonnes of carbon emissions per year. By integrating solar power into its operations, Scottish Water advances its commitment to achieving net-zero emissions by 2040 while enhancing energy security and reducing reliance on grid electricity. Key Project Drivers Scottish Water's net-zero strategy was the primary driver behind this initiative, aligning with Scotland's broader decarbonisation goals. The project aimed to:

- Increase renewable energy generation within its infrastructure. · Enhance operational efficiency while reducing long-term energy costs.
- Strengthen energy security and reduce reliance on grid electricity. Challenges & Solutions A significant challenge was optimising the available space while ensuring minimal disruption to the reservoir's operations. Emtec Energy collaborated closely with Scottish Water Horizons to implement:
- A tailored solar PV layout that maximised energy generation while maintaining reservoir functionality.
- Ground-mounted structures designed for easy maintenance access.
- A robust electrical infrastructure, including SolarEdge inverters with real-time performance monitoring for optimal efficiency and rapid troubleshooting.
- By leveraging innovative design and engineering strategies, Emtec Energy ensured the seamless integration of the system within the site's infrastructure.

## Outcomes

Emtec Energy successfully delivered a 290kWp ground-mounted solar PV system at Scottish Water Horizons' Old Kilpatrick site, generating approximately 261,605 kWh annually and covering 46% of the site's energy demand. This reduces reliance on grid electricity, cutting operational costs and offsetting 48 tonnes of carbon emissions per year, supporting Scottish Water's net-zero 2040 target. The project involved installing 548 Longi 530W solar PV modules and two SolarEdge inverters, optimised for efficiency. A strategic layout minimised shading and ensured seamless integration within the active water management site.

Emtec Energy worked closely with Scottish Water Horizons to secure approvals and maintain water quality, while real-time performance monitoring allows for efficient energy management. Financially, the system shields Scottish Water from energy price fluctuations, improving resilience and sustainability. The project sets a strong precedent for future renewable energy initiatives and reinforces Emtec Energy's role in Scotland's renewable sector.

## Local Benefit & Community Impact

The installation of a 290kWp solar PV system at Scottish Water Horizons' Old Kilpatrick site delivers significant local and community benefits, enhancing environmental sustainability and improving the resilience of essential public services in West Dunbartonshire.

By integrating renewable energy into water infrastructure, the project strengthens long-term energy security, reduces operational costs, and lowers carbon emissions. The system supports the efficiency and sustainability of the Old Kilpatrick distribution service reservoir, which supplies clean drinking water to residents across the region. Generating 261,605 kWh of renewable energy annually, it meets 46% of the site's total energy demand, reducing reliance on grid electricity and ensuring long-term cost savings for Scottish Water. The solar panels have been strategically installed on top of a water tank, optimising land use without affecting surrounding areas. The project also offsets approximately 48 tonnes of carbon emissions per year, contributing to Scottish Water's net-zero 2040 target and Scotland's wider decarbonisation efforts. For the local community, this initiative ensures a more sustainable and stable water supply by reducing dependence on traditional energy sources.

The project helps stabilise energy costs while reinforcing Scottish Water's commitment to environmental responsibility. Generating 0.26GWh of clean energy annually - the equivalent of boiling 1.2 million kettles - this installation showcases the tangible impact of solar power on public utilities. By successfully delivering this project, Emtec Energy has played a key role in helping Scottish Water advance its sustainability targets. The combination of cost savings, a reduced carbon footprint, and increased energy security sets a strong precedent for future renewable energy investments within the water sector, demonstrating the potential for solar power to be effectively integrated into essential public services across Scotland



**Learn more about what's happening at Emtec Energy at [www.emteceenergy.co.uk](http://www.emteceenergy.co.uk)**



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