



Case Study



What matters to SSE Renewables is accelerating sustainable innovation

Do what matters

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For the team at SSE Renewables, a leading generator of renewable energy in the UK, sustainability isn't just on the agenda – it is the agenda. In partnership with Avanade, the company has transformed to deliver renewables in a sustainable way as it works toward its net-zero goals. Together, we've created multiple solutions to protect the people and wildlife around SSE Renewables' wind farms and hydroelectric installations. By embracing new technologies to help fight climate change, employees are expediting innovation to make renewable energy sources more widely available while supporting the preservation of local ecology.

"There's no bigger privilege or obligation than to deliver a sustainable future for future generations right across the world."

Stephen Wheeler

Managing Director, SSE Renewables

Business situation: Accelerating the green revolution

As the impacts of climate change are felt more acutely each year, the need to accelerate our shift toward renewable energy sources is more important than ever. SSE Renewables wants to make a difference for future generations by creating a healthier world through cleaner, greener sources of energy. The increasingly crowded energy market means that company leaders need to constantly rethink the way they operate to solve problems and stay ahead. They want to ensure the organization's assets are safe for both the people working on or around them and the wildlife habitats in the surrounding ecosystem.

Solution: Tools to protect wildlife, people and the environment

We worked with the team at SSE Renewables to help connect them with Microsoft technologies that are outside their traditional ways of operating and thinking. Together, we created a "flying squad" to help quickly bring sustainable solutions to life across multiple areas of the business. These include:

Company Name: SSE Renewables

Country: UK

Industry: Energy

Company size: 500-1,000

Solutions: Ecological digital twin, Metaverse, Microsoft Azure, Microsoft Vision AI

Species monitoring solution

To ensure its wind turbines and hydroelectric installations co-exist seamlessly with the bird and marine life in the area – including local puffin and salmon populations – the company is using a **Microsoft Vision AI** solution that accurately and automatically counts, tracks and monitors various species. This has replaced inaccurate and time-consuming manual processes, and insights can be used and shared with researchers, industry analysts and the public to continue making installations safer for wildlife in the future.

Ecological digital twin

For a comprehensive view of the environmental impact of SSE Renewables' wind farms, we've co-created an ecological **digital twin** concept using the power of **Microsoft Azure**. The digital twin will create a virtual replica of an actual wind farm ecosystem and use advanced ecological monitoring and data analysis to improve employees' view of the entire area. This will unlock more efficient and less intrusive methods for gathering environmental data. Employees will have new ways of interacting and sharing insights, including through an immersive virtual reality experience in the **metaverse**.

GeoSafe field service application

The health and safety of employees and contractors is a top priority. The previous process for tracking workers onsite at wind farms was manual and prone to human error, making it difficult to ensure their well-being. Employees now use the convenient GeoSafe mobile application daily as they check in and out of turbine work sites in the field and chat with colleagues in the control room. A built-in dashboard gives real-time visibility into who is onsite and, importantly, to detect any foreseeable danger.

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Fleet decarbonization

A wind turbine is made up of a complex mix of components. This includes the yaw gear, which allows the turbine to turn into the direction of the wind to maximize energy output. Typically, when these components reach their end of life, they end up in a landfill. SSE Renewables built a proof of concept to eliminate that waste by refurbishing and remanufacturing these gears. While this is the first use case, the company is also working toward doing the same for other turbine components.

"What we're doing together is building the foundation we need to make decisions that are key to unlocking the future of renewables," says Kate Wallace Lockhart, the company's head of sustainability.

"The partnership that we've built with Avanade has been extremely valuable, both in the agility and pace of delivery we've achieved, and also in terms of the innovation they've brought," says Oliver Abell, head of digital at SSE Renewables. "We've been working together as one team, and it really makes me proud to see the positive impact we're having on the world."

About SSE Renewables

SSE Renewables is a leading developer and operator of renewable energy across the UK and Ireland, with a portfolio of around 4GW of onshore wind, offshore wind and hydro. Our strategy is to drive the transition to a net zero future – through the world class development, construction and operation of renewable energy assets.

SSE Renewables' overall aim is to deliver enough renewable projects to generate 30TWh by 2030, trebling SSE's renewable energy output from 2019 levels. This will make a significant contribution to decarbonising the power sector and achieving net zero emissions by 2050.

SSE Renewables owns nearly 2GW of operational onshore wind capacity with over 1GW under development. Our 1,459MW hydro portfolio includes 300MW of pumped storage and 750MW of flexible hydro. Our operational offshore wind portfolio consists of 487MW across two offshore joint venture sites, Beatrice and Greater Gabbard, both of which we operate on behalf of our asset partners.

SSE Renewables has the largest offshore wind development pipeline in the UK and Ireland at over 6GW and has an onshore wind pipeline across both markets in excess of 1GW.

For more information, visit www.sserenewables.com.

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About Avanade

Avanade is the leading provider of innovative digital and cloud services, business solutions and design-led experiences on the Microsoft ecosystem. With 43,000 professionals in 25 countries, we are the power behind the Accenture Microsoft Business Group, helping companies to engage customers, empower employees, optimize operations and transform products, leveraging the Microsoft platform. Majority owned by Accenture, Avanade was founded in 2000 by Accenture LLP and Microsoft Corporation. Learn more at www.avanade.com.

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