

## SOLLATEK STABILISES POWER FOR SUBSTATION LVAC AT BEATRICE WINDFARM



**Beatrice**  
Offshore Windfarm Ltd

**Beatrice Windfarm**  
POWER SUPPLY PROJECT



**Client:** UK Grid Solutions Limited  
**Country:** Scotland  
**Year:** 2018  
**Product:** AVR3PE1200



Beatrice Windfarm Ltd, became operational in 2019 and is one of the largest private investments in Scottish infrastructure with a capital expenditure of around £2.5 billion. As the second largest offshore windfarm it remains a leading source of renewable energy, enough to generate power for up to 450,000 homes.

Operated by SSE Renewables and contracted by Siemens to build the 84 turbine windfarm with a capacity of 588MW, Sollatek was to supply two AVR3PE1200 units for this project, which, at the time, set new industry standards with their very wide input range. These advanced Automatic Voltage Regulators (AVR) operate with microprocessor-controlled systems that function with transformer taps using thyristors. The system incorporates self-check mechanisms, system integrity monitoring and diagnostic indicators to enhance performance and overall reliability. The site's intricate operations

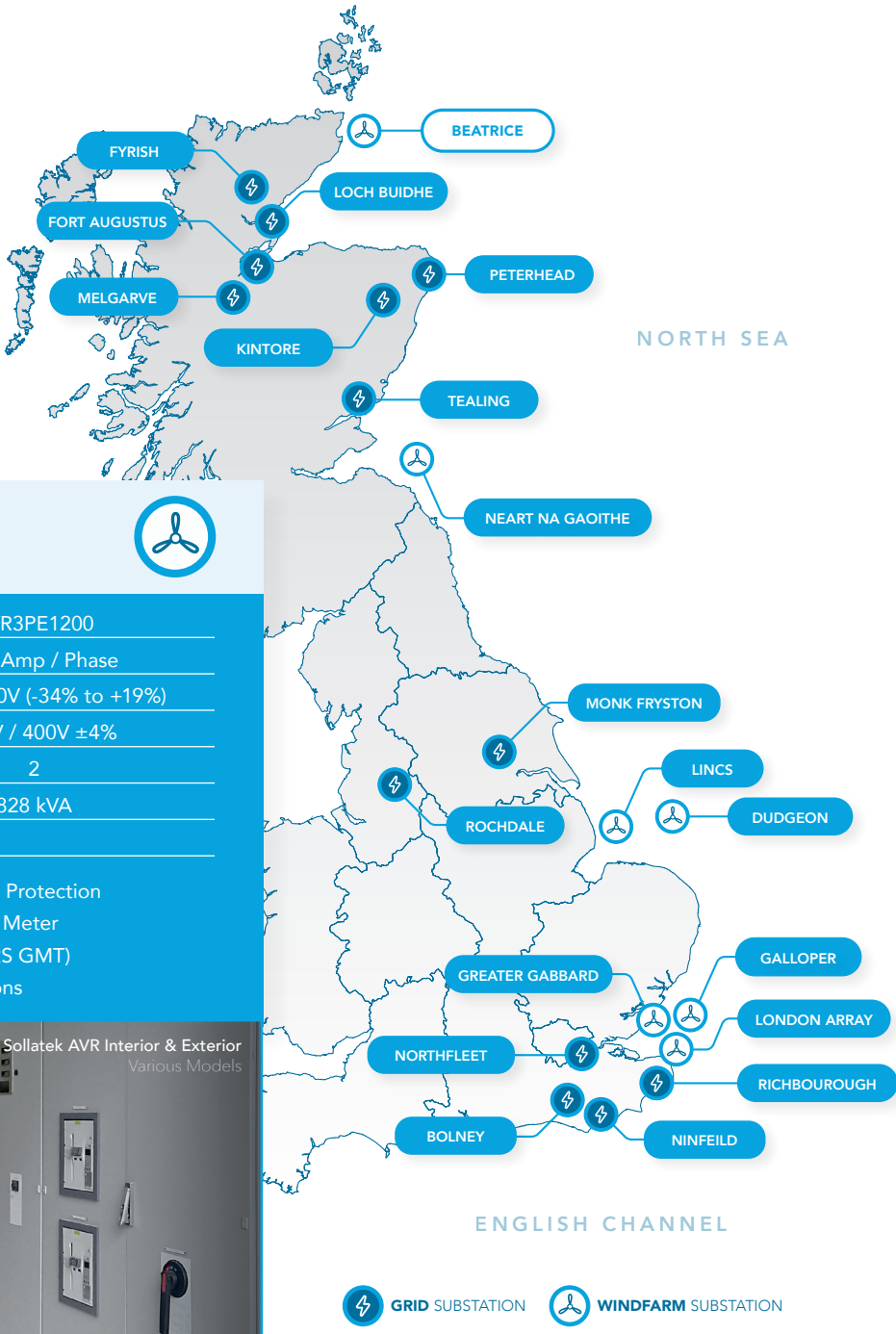
involve a multitude of switching activities, potentially subjecting the auxiliary power supply to fluctuations beyond acceptable limits. Due to these demanding conditions, Sollatek designed and manufactured an 828kVA regulator, capable of accommodating a very wide input tolerance range of -34% to + 19% (151 – 274V) of the nominal voltage. This wide-ranging capability ranks it among the largest solid-state, thyristor-based regulators as well as an ultrafast correction time. The site is located more than 13km from the mainland, in the rugged North Sea. The turbines deliver power to the onshore substation where it is

regulated and 'cleaned' for export to the electricity grid network. During this crucial process, the Sollatek AVR plays a pivotal role, ensuring a stable and regulated power supply for the onshore sub station's control systems and maintenance equipment.

As a joint venture partnership and operated by SSE, Beatrice Windfarm became fully operational in summer 2019 and was the largest windfarm ever constructed in Scotland. Today, it remains one of the largest sources of renewable energy generation in the region, continuing to make a significant contribution to Scotland's energy portfolio. The project is part of SSE Renewables solution to the climate crisis with their goal to achieve 8GW capacity by 2026.

POWER PROJECTS  
UNITED KINGDOM

Sollatek has cemented its reputation as a dependable partner in the power supply infrastructure by providing Automatic Voltage Regulators (AVR) to numerous projects across the UK.



Beatrice Windfarm  
SUBSTATION AVR SPECIFICATION

Model	AVR3PE1200
Max Current	1200 Amp / Phase
Input Voltage	230V / 400V (-34% to +19%)
Output Voltage	220V / 400V ±4%
Number of Systems	2
Max Output Power	828 kVA
INCLUDED FEATURES	

- Automatic Voltage Switcher
- Input Circuit Breaker
- Output Circuit Breaker
- Manual Bypass
- Class II Surge Protection
- Digital Smart Meter
- Modem (GPRS GMT)
- Special Options



Sollatek's expertise extends worldwide  
through local networks

Established for over 40 years in the United Kingdom, Sollatek is a manufacturer of innovative products in power control, energy saving, temperature control and solar energy. Operating from 12 countries and a global distribution network in 60 more. Sollatek has grown to become a household name, particularly in harsh and demanding environments where reliability and affordability are essential to everyday life. The Sollatek voltage protection product range now includes full lines of voltage switches, stabilisers, conditioners and uninterruptible power supplies (UPS).

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