



# SOLUTION NOTE

## RHYL FLATS OFFSHORE WINDFARM

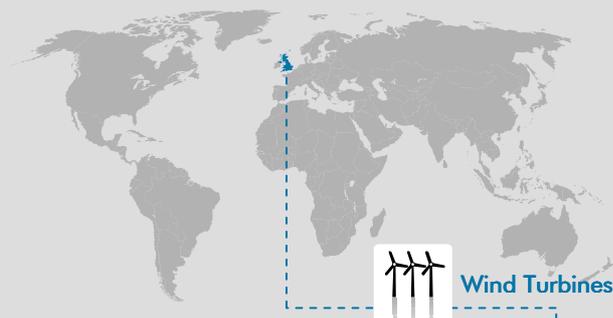
RWE (NPOWER) (UK)

SN-RHYL FLATS-EN-1013

### RHYL FLATS 90MW OFFSHORE WINDFARM

Rhyl Flats windfarm is located on the eastern end of the Constable Bank between Abergele and Rhos-on-Sea, approximately 5 miles (8 kilometres) off the coast of North Wales. It comprises **25 Siemens SWT-3.6-107 wind turbines** and has a maximum installed capacity of **90MW**. Rhyl Flats Offshore Windfarm will provide enough clean, green electricity to satisfy the needs of approximately 61,000 homes every year.

**YEAR** » 2009  
**CLIENT** » RWE (NPOWER)  
**LOCATION** » Constable Bank, UK  
**SOLUTION** » Windfarm Grid Interconnection Solution  
**SEGMENT** » Renewable Energy (RES) - Offshore Wind



### ORMAZABAL CGM-CGC: FIXED MOUNTED, SINGLE BUSBAR, GAS INSULATED SWITCHGEAR UP TO 36 KV

**Switchgear Types:**

Incoming (CML)      Circuit Breaker Panel (CMP-V)  
 Cable Rising (CMR)      Metering (CMM)

**Electric Data:**

36 kV – 630 A – 20 kA

**Scope of Supply:**

73 Cubicles



### ORMAZABAL ekorRPGci: INTEGRATED CONTROL PROTECTION UNIT

**Characteristics:**

Protection and metering unit with integrated control for circuit-breaker protection cubicles

### ORMAZABAL Windfarm Grid Interconnection Solutions: Switchgear and Protection Units Installation and Commissioning, HV SCADA Operation Test, Specific Fixation Designs

#### THE CHALLENGE AND THE SOLUTION

After a detailed study to identify what was the best electric grid configuration according to wind turbines localizations on Rhyl Flats, Ormazabal worked to create a logistics plan designed to meet the unique needs of the site.

A **challenging industrialization process** was coordinated and Rhyl Flats developer and wind turbine manufacturer requests were taken into account during the **Factory Acceptance Test (FAT)** in our installations.

An **environmental protection wrapping** was done for protect switchgear during their installation on the transition piece and a **specific fixation design** for the switchgear was done to assembly it at metal structure of turbine foundation, due to its subsequent handling for installation at sea.

Ormazabal supported the customer from the first planning to the **commissioning** once turbines were installed at sea.

Thanks to Ormazabal Solution, the client obtained the following benefits:

- Proven technology with almost 10 years offshore experience
- Customized design for wind turbine transition piece
- Optimization of operational expenditures due to low level of maintenance
- Switchgear designed and tested according to specific offshore windfarm harsh environmental conditions
- Proven operation at offshore conditions: Low temperatures and high salinity