



INTERNATIONAL

# Renewables Solar & Wind

Energy Engineering • It's in our DNA



# ESB International wind & solar capability

---

ESB International offers a full spectrum of Wind and Solar PV services, from due diligence and feasibility studies to design layout and grid connection.





## Design & Energy

Solar PV and wind turbine technology selection

Layout design

Cabling and Inverter design and specification

Data monitoring, processing and energy yield estimates

Detailed design drawings

Capex, Opex and Devex costings

Technology comparisons on an LCOE basis



## Project Management & Health and Safety

Contractor management

Site supervision

Health and safety management

Procurement management

Factory Acceptance Testing (FAT's)



## Strategic Services

Strategic studies in relation to renewable energy planning

National renewables strategy support

Model renewables integration with the grid

Project sizing



## Grid Connections & Electrical Balance of System

Connection studies (38 kV, 110 kV etc.)

Route selections

Grid applications

Techno/economic studies

Substation design

Transformers

Grid code compliance

Power system studies

Storage



## Civil & Environmental

Feasibility, site appraisal and selection

Environmental impact assessment

Planning applications

Road design

Hydrology and drainage



## Asset Management

Development and management of Long Term Service Agreements (LTSA's)

Performance Ratio validation



**INTERNATIONAL**

## 5 MW WIND & SOLAR POWER PLANT

**Kingdom of Bahrain**

esbinternational.ie

**CLIENT** Electricity and Water Authority

**PROJECT TYPE** Owners Engineer

### DESCRIPTION

The project concerns a 5 MW Renewable Pilot Power Plant to demonstrate how Wind Energy and Solar Energy can be properly integrated onto the Bahrain grid in accordance with international best practice and local regulations.

Owners Engineer role description:

- Contractor management
- Electrical Balance of Plant (EBOP)
- Design and supervision
- Resident engineer site supervision
- Contract negotiation and development
- Asset management





**INTERNATIONAL**

# CAPPAWHITE 52 MW WIND FARM PROJECT

**Ireland**

esbinternational.ie

<b>CLIENT</b>	Cappawhite Wind Ltd
<b>DATES</b>	September 2015 - December 2017
<b>PROJECT TYPE</b>	Owners Engineer

**DESCRIPTION**

The Cappawhite wind farm involved the installation of 17 Vestas V112 direct drive turbines. The wind farm has an installed capacity of 52 MW and generates enough energy to power 32,500 homes per annum.

**OE ROLE DESCRIPTION:**

ESB International's main roles include (but not limited to)

- Wind Farm Design - (Civil, Electrical, Turbine layout and Optimisation)
- Planning permission
- Grid connection
- Site supervision
- Safety management
- Management of commissioning works
- Community liaison





**INTERNATIONAL**

# MONEYPOINT 17.25 MW WIND FARM

**Ireland**

esbinternational.ie

<b>CLIENT</b>	Moneypoint Wind Ltd.
<b>DATES</b>	July 2015 - July 2017
<b>PROJECT TYPE</b>	Owners Engineer

**DESCRIPTION**

The Moneypoint wind farm involved the installation of 5 Vestas 3.45 MW V112 direct drive turbines. The wind farm has an installed capacity of 17.25 MW. The project is sited adjacent to an operational coal fired power plant on the west coast of Ireland.

**OE ROLE DESCRIPTION**

ESB International's main roles include (but not limited to):

- Wind Farm Design - (Civil, Electrical, Turbine layout and Optimisation)
- Planning permission
- Grid connection
- Site supervision
- Safety management
- Management of commissioning works
- Community liaison



## Wind and Solar Reference List

PROJECT	SIZE (MW)	LOCATION	ESB INTERNATIONAL ROLE	PROJECT STAGE
<b>WIND</b>				
Fullabrook	66	UK	Owners Engineer (OE) / Technical Advisor (TA)	Constructed
Raheenleagh	35.2	Ireland	OE / TA	Constructed
Woodhouse	19	Ireland	OE / TA	Constructed
Cappawhite	64	Ireland	OE / TA	Constructed
Castlepook	29	Ireland	OE / TA	Constructed
Moneypoint	17.25	Ireland	OE / TA	Constructed
Grousemount	114	Ireland	OE / TA	In construction
Oweninny 1	89	Ireland	OE / TA	In construction
Wind farm due diligence	>1000 MW, >20 projects	Ireland & UK	TA	various
Galloper Offshore wind farm acquisition	44 MW	UK	TA	Acquisition completed

PROJECT	SIZE (MW)	LOCATION	ESB INTERNATIONAL ROLE	PROJECT STAGE
<b>SOLAR</b>				
Wind & Solar Pilot Power Plant	5	Bahrain	OE / TA	In construction
Solar rooftop - completed	1.2 (19 projects)	Ireland & UK	Asset management	Constructed
Solar rooftop - design	35 (11 projects)	Europe & Middle East	Design	Design stage
Solar farm due diligence	80MW, 10 projects	Ireland	TA	Acquisition completed
Grid connection of a solar farm	100	Bahrain	OE / TA	
Large utility solar farm	70	Ireland	Design	Design completed

---

# We should be talking to each other

To discuss your Solar an Wind Generation needs, please get in touch with ESB International at the contact points below.

**ESB INTERNATIONAL**  
One Dublin Airport Central  
Dublin Airport  
Cloghran  
County Dublin  
Ireland  
K67 XF72

Tel +353 (0) 1 703 8000  
Fax +353 (0) 1 703 8088

**ESB INTERNATIONAL**  
Bahrain Office  
Office 1002  
Building 655  
Road 3614  
Block 436  
Seef District  
Kingdom of Bahrain

Tel: +973 1770 8118  
Fax: +973 1770 0115

**ESB INTERNATIONAL**  
Abu Dhabi Office  
Office 25/25  
20th Floor  
Al Wahda Commercial Tower  
Airport Road  
Abu Dhabi

Tel: +971 2815 7999  
Fax: +971 2815 7888

**ESB INTERNATIONAL**  
Oman Office  
Office 206, 2nd Floor  
Holiday Inn  
Al Mazoon Street  
South Al Mawaleh  
Muscat  
P.O. Box, P.C. 118  
Sultanate of Oman

Tel: +968 2428 7961

**Email** [marketing@esbi.ie](mailto:marketing@esbi.ie)  
**Web** [www.esbinternational.ie](http://www.esbinternational.ie)

