

OFFSHORE WIND



Mainstream is the most successful independent developer of offshore wind at scale globally. It has developed and consented Hornsea One and developed Hornsea Two totalling 2.6 GW in England and consented the Neart na Gaoithe offshore wind project in Scotland, 450 MW. These projects represent 22% of the UK's offshore wind capacity either in operation or under construction.

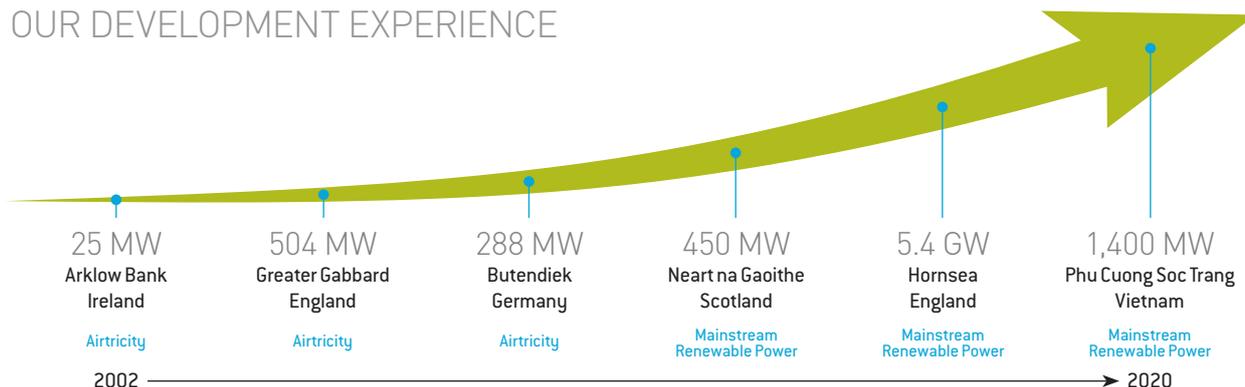
Mainstream continues to extend its offshore wind development credentials. In Vietnam, it is developing one of Asia's largest offshore wind farms, the 1.4 GW Phu Cuong Soc Trang project through a joint venture with local company, the Phu Cuong Group.

In the US, Mainstream has received full qualification to apply for a lease in both the New York Bight, and California. Both lease auctions are expected in 2021. In addition, Mainstream is reviewing offshore opportunities in the Philippines, Japan and South Korea.

Mainstream's Offshore Centre of Excellence is in the UK and the offshore team are located in offices in Ireland, Vietnam and the US.



OUR DEVELOPMENT EXPERIENCE



OUR OFFSHORE WIND BUSINESS

Since 2008, Mainstream has successfully developed and consented Hornsea One (1.2 GW) and developed Hornsea Two (1.4 GW) in England. It has also obtained consent for the 450 MW Neart na Gaoithe (NnG) project in Scotland. Mainstream exited the Hornsea Zone to Danish utility, Ørsted in 2015 and the NnG project to French utility, EDF Group in 2018.

As a project developer, Mainstream's business model is to secure a licence to develop an offshore site or zone, before taking a project or projects on that site through all the stages of the development process, including obtaining planning consent, and other necessary permits to operate. In parallel, Mainstream negotiates all the major construction and services contracts in order to take the project to a stage where it is fully designed, fully engineered and all the key components are secured.

Mainstream will also secure the PPA for the project. Hornsea One was awarded a Contract for Difference (CfD) in 2014, and in 2015 the NnG project won a CfD in the UK's first competitive auction. The CfD gives the wind farm an inflation-linked price for the electricity it produces for a period of fifteen years.

Mainstream will usually exit a project at or just prior to financial close or final investment decision.

HORNSEA ZONE, ENGLAND – SOLD TO ØRSTED, 2015

In 2009, Mainstream entered a 50/50 joint venture with Siemens Project Ventures to create SMart Wind to compete for project zones in The Crown Estate's Round 3 competitive process.

In 2014, SMartWind was granted development consent for Hornsea One (1.2 GW). SMartWind also fully developed Hornsea Two (1.4 GW) and prior to receiving its development consent, Hornsea One and Two and the remainder of the Zone was sold to Ørsted in 2015. Hornsea One is currently the largest operational offshore wind farm in the world and Hornsea Two is one of the largest in construction.

Delivering value through regional supply chains

SMart Wind built a strong and successful partnership with every aspect of the supply chain – including port development authorities, cable manufacturers and construction companies. These strong supply chain relationships were vital to the success of the Hornsea projects enabling them to reach key milestones to be delivered on time, safely and within budget.

SMart Wind also worked closely with enterprise development agencies and industry facilitators to help deepen supply chain development opportunities across the east of England.

Innovative engineering designs – Twisted Jacket Foundation

In 2011, SMart Wind installed the world's first twisted jacket foundation for its Met Mast in the Hornsea Zone in partnership with the Carbon Trust's Offshore Wind Accelerator programme. The novel foundation was a cost saving mechanism and a clear demonstration of its commitment to drive down offshore wind costs through advances in technological innovation.

Skills training and education

Recognising the need to develop the skills base for a new offshore industry, SMart Wind pioneered an innovative approach to skills training through two initiatives in the Hornsea region.

UK's first dedicated training tower

In March 2010, the UK's first offshore wind training tower opened to students in the north east of England. The facility, pioneered by SMart Wind, allowed education and training providers to deliver academic and industrial training programmes for technicians working at height.

School programme

SMart Wind joined forces with the Science, Technology, Engineering and Mathematics Network (STEMNET) to launch SMart Futures. The 4-year educational programme raised awareness and highlighted routes to careers in offshore wind and renewables.



NEART NA GAOITHE PROJECT, SCOTLAND – SOLD TO EDF GROUP, 2018

In 2009, Mainstream won the exclusive rights to develop the NnG offshore wind farm in Scottish Waters as part of a competitive bidding process.

During the development phase, Mainstream secured onshore and offshore consent, grid connection and the project CfD. Following a competitive process won by the EDF Group, Mainstream exited the project prior to financial close.

Delivering value through regional supply chains

During development, a local procurement strategy was established and the team worked closely with the Scottish Government, authorities, suppliers, manufacturers and other parties to maximise economic opportunities for local companies.

Developing the supply chain – NnG Coalition Group

In 2017, the NnG Coalition was established by the emerging Scottish supply chain and brought together over eighty locally based suppliers and companies to promote the project benefits to the Scottish economy and environment.

Fraser of Allander Report:

In a Report commissioned by the Coalition, the Fraser of Allander Institute at the University of Strathclyde estimated NnG would make a major contribution to Scotland including:

- > generating an economic impact of 0.6% on Scottish Gross Domestic Product (GDP)
- > generating £382m of additional activity in Scotland’s construction industries
- > the displacement of 400,000 tonnes of CO₂ annually
- > the creation of ~2,000 Scottish jobs for each year of construction
- > the support of ~236 Scottish jobs for every year of operation.

Innovative engineering designs – Floating Wind Measurement Device (Flidar)

In collaboration with Government agencies and industry partners, Mainstream successfully deployed the North Sea’s first commercial floating LiDAR (Flidar) wind measurement device at the NnG site. Flidar was a cost effective method of capturing highly accurate wind data in harsh conditions and was a key contributor to the success of the project.



INDUSTRY LEADERSHIP ROLES

- > ORE Catapult Floating Offshore Centre of Excellence (Co-Chair)
- > Offshore Wind California (Chair)
- > RenewableUK (Board Member)
- > GWEC (Board Member)
- > GWEC Offshore Wind Task Force (Representative)
- > Ocean Renewable Energy Action Coalition – OREAC (Founding Member)
- > IRENA Coalition for Action (Steering Board)
- > RE100 (Advisory Board)

THOUGHT LEADERSHIP

Mainstream has been at the forefront of the development of the global offshore wind industry since its inception.

It has achieved this through leadership positions in WindEurope, RenewableUK, the Global Wind Energy Council and the International Renewable Energy Association’s Business and Investor Group.

Mainstream has won a number of awards for its industry leadership, including the 2012 Crown Estate Marine Business Award, in recognition of its innovation and business performance.

The company has also championed the concept of the European Supergrid, bringing together industry and government to plan the large-scale deployment of offshore wind across a meshed HVDC grid, bringing low-cost renewable energy to customers across Europe.

TRADE ASSOCIATION MEMBERSHIP

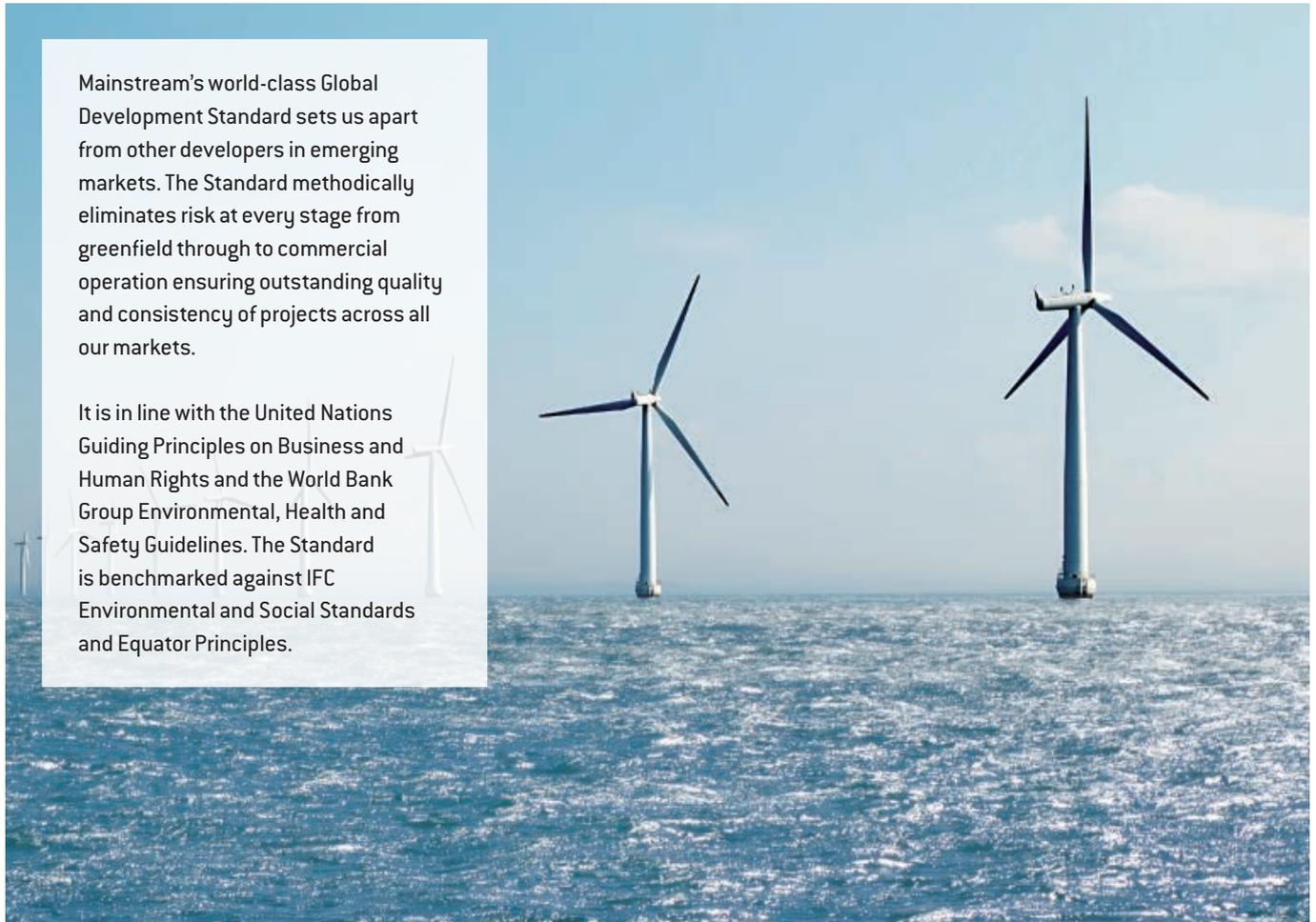


OUR WORLD-CLASS GLOBAL DEVELOPMENT STANDARD

Mainstream established its own 'Global Development Standard' to guarantee exceptional project delivery through a robust system of processes and procedures.

Mainstream's world-class Global Development Standard sets us apart from other developers in emerging markets. The Standard methodically eliminates risk at every stage from greenfield through to commercial operation ensuring outstanding quality and consistency of projects across all our markets.

It is in line with the United Nations Guiding Principles on Business and Human Rights and the World Bank Group Environmental, Health and Safety Guidelines. The Standard is benchmarked against IFC Environmental and Social Standards and Equator Principles.



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