



WSG 2017 European Regional Meeting

04 - 05 MAY 2017 | EDINBURGH, SCOTLAND



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#WSGevents2017

Clean Energy and Renewables – Opportunities for European Collaboration

PANEL DISCUSSION | 10:15 – 11:45

Moderator:

Patricia Hawthorn - Chairman, *Scottish Renewables*

Panelists:

Marc Baltus – Partner, *Heuking Kuhn Luer Wojtek*

Chris Jenner – Development Manager, *Transmission Investment*

Cameron Smith – Director – Project Development, *Atlantis Resources*

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HEUKING KÜHN LÜER WOJTEK

Clean Energy and Renewables - Opportunities for European Collaboration

Edinburgh, 05th May 2017
Marc Baltus, Heuking Kühn Lüer Wojtek
Germany, Düsseldorf



Marc Baltus

Rechtsanwalt/Partner,

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Areas of Practice

- Energy Law (Head of Energy Practice)
- Mergers & Acquisitions
- Infrastructure / Regulated Markets

Associations

- International Bar Association, Senior Vice Chair Power Law Committee
- Forum for Future Energies
- Forum Contracting

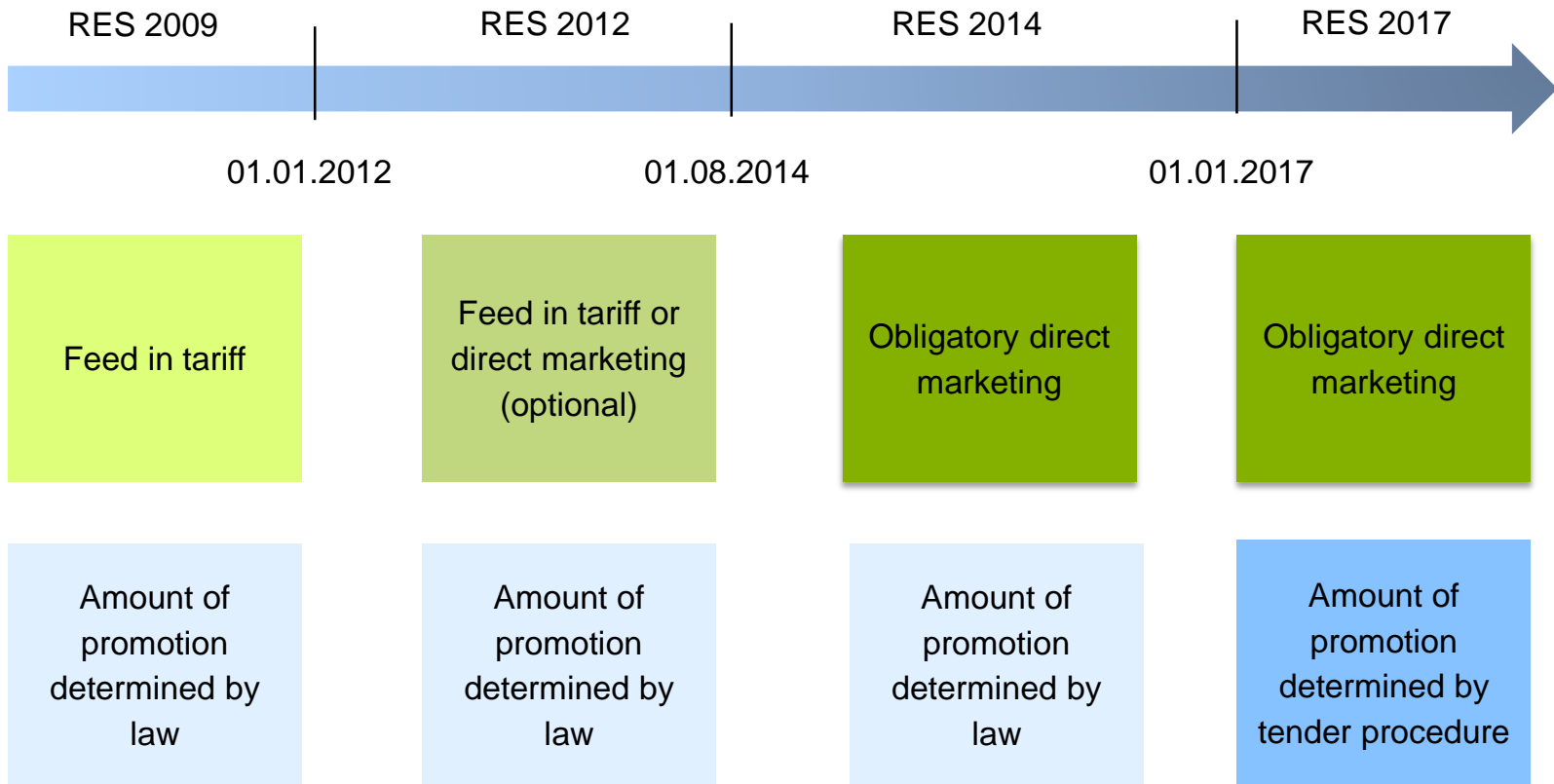
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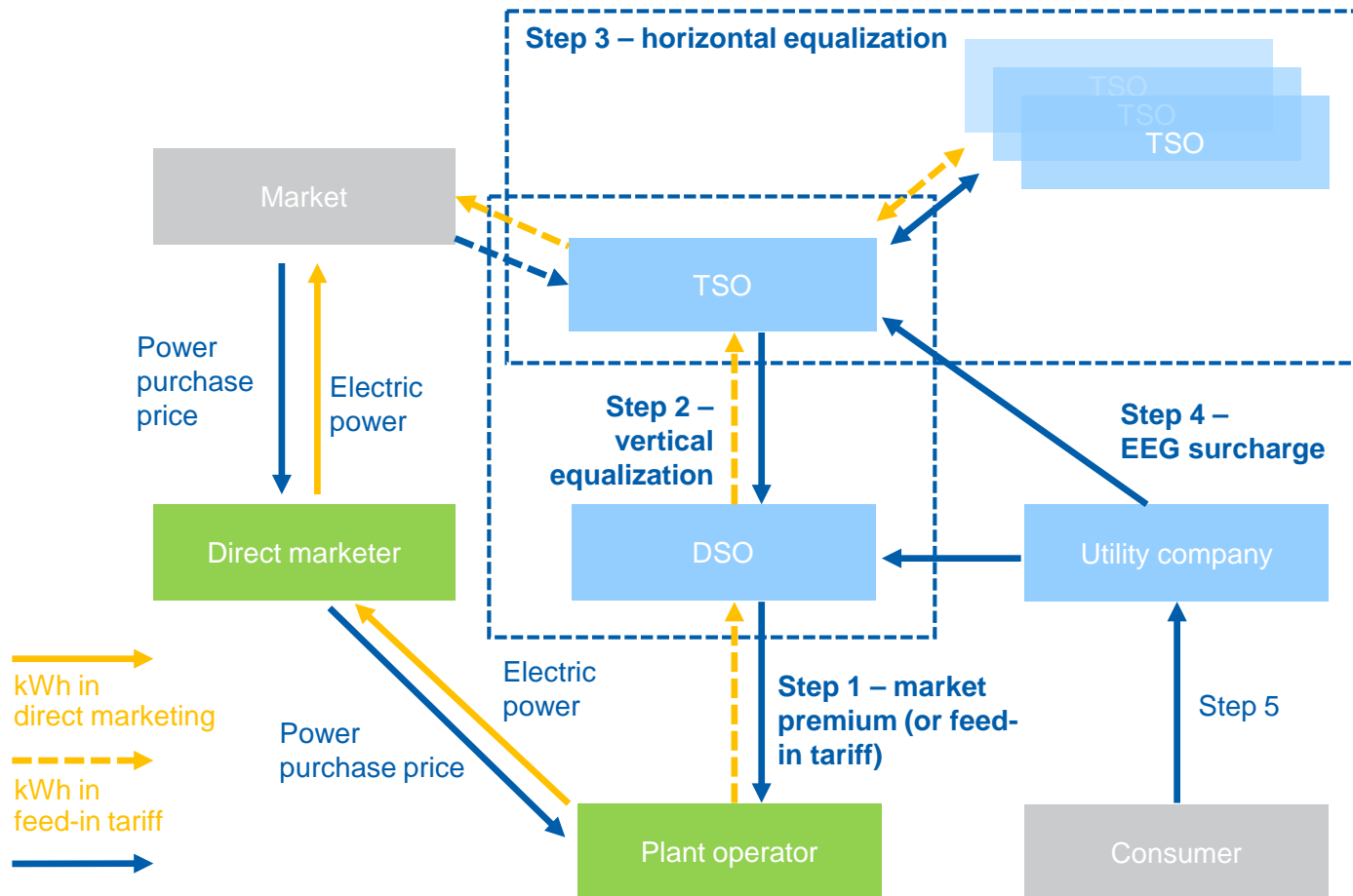
m.baltus@heuking.de

- 1. German system regarding subsidies for cross border renewable energy projects**
- 2. Subsidised financing for renewable energy projects abroad**

Market integration of renewable energies in Germany



German promotion system for renewable energies



Most relevant: tender procedure

Tender volume

Solar power plants

- 2017: in total: 600 MW
 - 1st February: 200 MW
 - 1st June: 200 MW
 - 1st October: 200 MW

Results of the first tender procedure in 2017 (200 MW):

- Ø 6.58 ct/kWh (highest: 6.75 ct/kWh, lowest 6.0 ct/kWh)

Onshore wind farms

- 2017: in total: 2800 MW
 - 1st May: 800 MW
 - 1st August: 1000 MW
 - 1st November: 1000 MW
- 2018: in total: 2800 MW
- 2019: in total: 2800 MW
- 2020: in total: 2900 MW

Offshore wind farms

Existing / approved wind farms:

- 2017: 1550 MW
 - 1st April
- 2018: 1550 MW
- 2021-2025: transition period
- As of 2026: new regime

Results of the first tender procedure (for 1490 MW)

- Ø 0.44 cent/kWh (highest: 6 ct/kWh; lowest **0.0 ct/kWh**)

Biomass

- 2017: 150 MW
 - 1st September
- 2018: 150 MW
- 2019: 150 MW
- 2020: 200 MW
- 2021: 200 MW
- 2022: 200 MW

Tender procedure



Cross Border Cooperations

- Benefits from Cross Border Auctions
 1. Cost reduction – Development of projects in areas with lower costs and increase of participation in auction systems
 2. Regional advantages – Development of projects in areas with best conditions
 3. Knowledge transfer

- Even if supported by EU - limited number of cooperations (joint support scheme between Sweden and Norway).

- Background for German initiative: State Aid Clearance for RES 2014

RES funding for installations abroad in Germany

- From 2017, 5% of new renewables capacity to be installed each year will be opened up to installations in other European Member States.
- Requirements under RES:
 1. Conclusion of an bilateral agreement under international law within the meaning of the cooperation mechanisms laid down in the Renewable Energy Directive (at the moment **only Denmark**).
 2. The cooperation is based on the principle of reciprocity
 3. The electricity from installations that have been awarded funding must lead to a tangible impact on the German electricity market ('actual import' of electricity).
- The Cross-border Renewable Energy Ordinance („GEEV“) provides the additional legal framework
 - Security payment (EUR 70 €/ KW)
 - Joint tendering or two separate tendering processes possible

Pilot opening auction

- Pilot programme between Germany and Denmark for photovoltaic power plant started in November / December 2016
 - First German tendering including locations in Denmark (November 2016): 50 MW
 - Result: 5 projects in Denmark (total volume 50 MW); price: 5.38 cent/kWh (solar power plants tendering in February 2017: in average 6.58 cent/kWh)
 - First Danish tendering including locations in Germany (December 2016): 20 MW (2,4 MW open for German tenders)
 - Result: no bids for Germany; 12.89 Danish øre/kWh (approx. 1.78 cent/kWh)
- Differences between projects in Germany and Denmark under German tendering process:
 - installations located in Germany: special requirements regarding for example the location of the project must be fulfilled (limited areas are eligible)
 - installation located in Denmark: no site restrictions shall apply as a requirement for subsidies (under German law).

KfW loans for renewable energy projects

KfW bank loans for renewable energy projects

- KfW bank was founded in 1948 and is owned by the Federal Republic of Germany and the states of Germany
- KfW supports investments for private as well as for commercial costumers
- KfW supports projects in several different areas:
 - Founding and succession
 - Expanding and consolidating
 - Innovation
 - **Energy and the environment**
 - Housing companies
 - Municipal and social infrastructure
- Loan application is not processed the KfW itself but by the “leading bank”

KfW bank loans for renewable energy projects

- KfW bank offers loans for renewable energy projects in and outside of Germany – **“Renewable energy programme – standard”**
 - For what?
 - For plants in which power or heat is generated from renewable energies
 - Electricity from solar energy (photovoltaics), biomass, wind energy, hydropower, geothermal energy
 - Electricity and heat from renewable energies, generated in combined heat and power stations
 - Grids, heat store

KfW bank loans for renewable energy projects

- For whom?
 - German enterprises majority-owned by private individuals
 - Subsidiaries located abroad
 - Joint Ventures **with significant German stake**
 - Difficult to define, but keys aspects might be:
 - commercial accounting, technical management, general administration tasks in German hand.
- What loans conditions?
 - Up to 100 % of the investments costs, not more than EUR 50 million
 - low-interest loans up to 20 years
 - Interest differs based on credit period and investment risk
 - Between 1,05 % (5 years period, lowest risk) and 9,04 (20 years period and highest risk)



Thank you very much for your attention!

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Le réseau de l'intelligence électrique



TRANSMISSION
INVESTMENT



FAB Project Overview Presentation



5th May 2017



Co-financed by the European Union
Connecting Europe Facility

Why More Interconnectors?

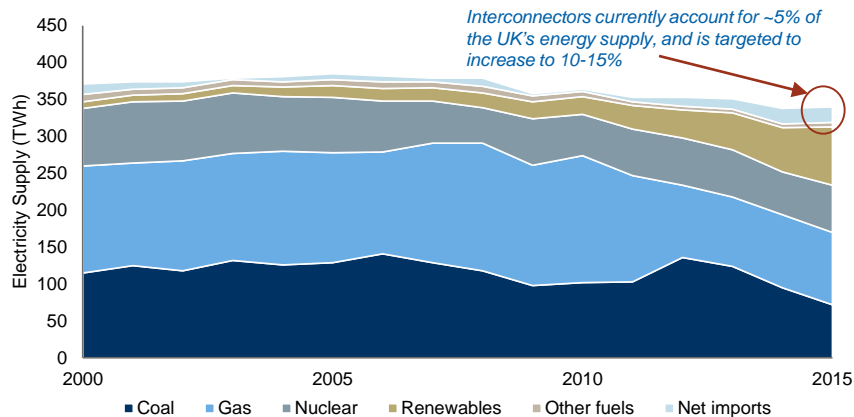
Interconnectors are a key instrument to enhance the competitiveness and integration of the European electricity market

Rationale for Increasing Interconnector Investment

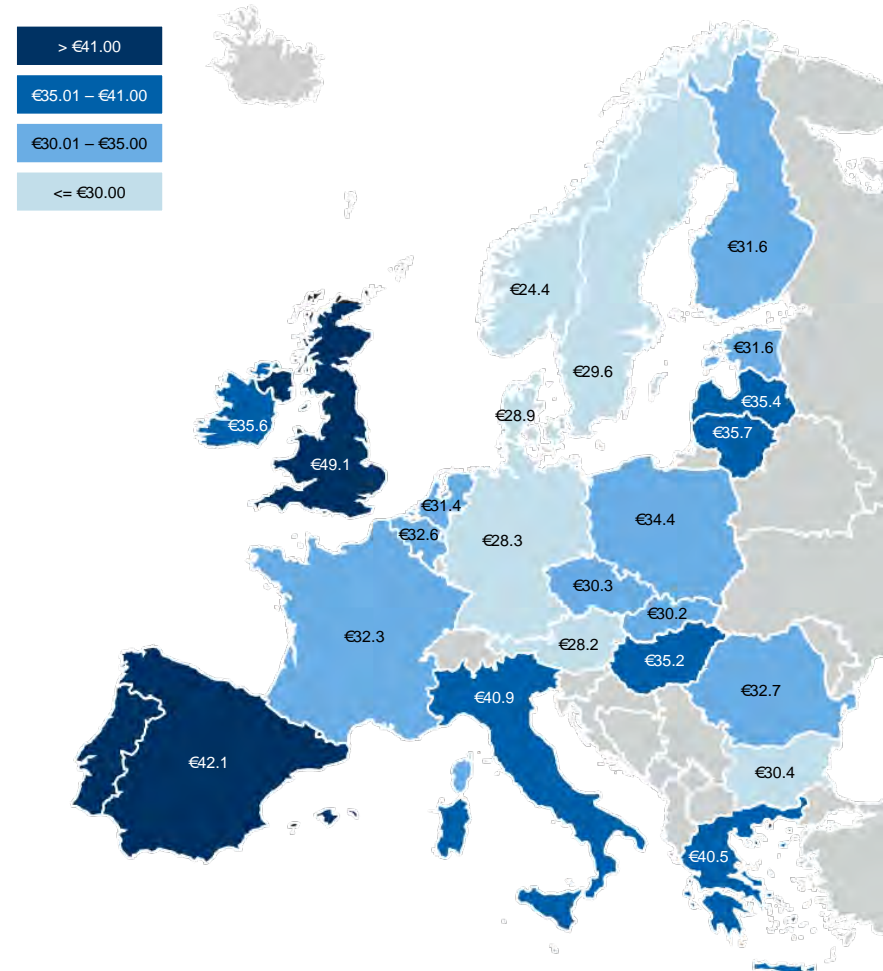
Interconnectors play an increasingly important role in the European electricity market:

- Increase the diversity and security of energy supplies and facilitate competition in the European market
 - Despite recent decline in prices, power supply in the UK is still generally more expensive than mainland Europe
- Allow arbitrage between supply prices in Europe, with power flow directed towards the highest price market
- Support the decarbonisation of energy supplies and help the transition to a low carbon energy sector by integrating renewable sources across Europe
- Lower the cost of delivering security of supply

UK Electricity Supply by Fuel Source¹



Power Price (Base load)²



(1) Ofgem: Electricity supply mix by year and fuel source (UK)

(2) European Commission; Quarterly Report on Electricity Markets, Q3 2016

A Resilient Energy Union

Benefits to energy consumers

On 25 February 2015, the European Commission adopted a Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy (the Energy Union) which the European Council of Ministers decided to back on 20 March 2015.

Great Britain could unlock up to £1billion of benefits to energy consumers through doubling its interconnector capacity by 2020.

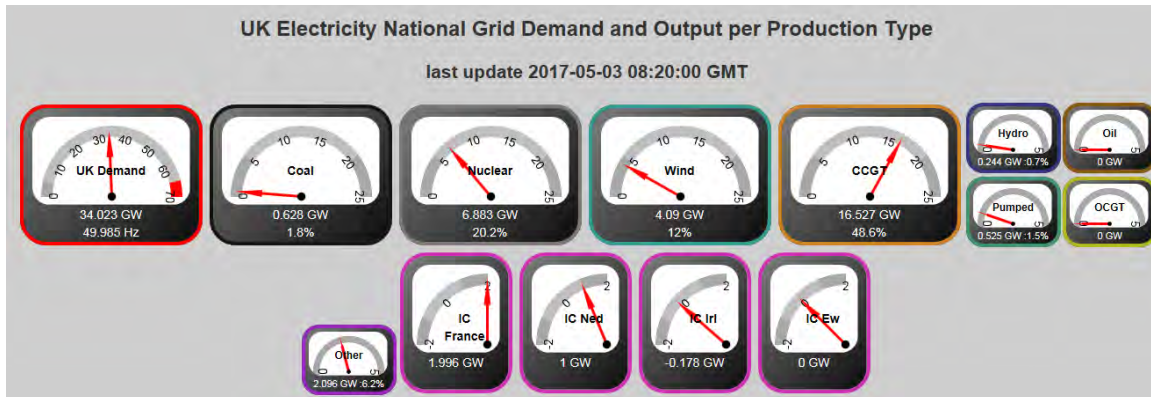
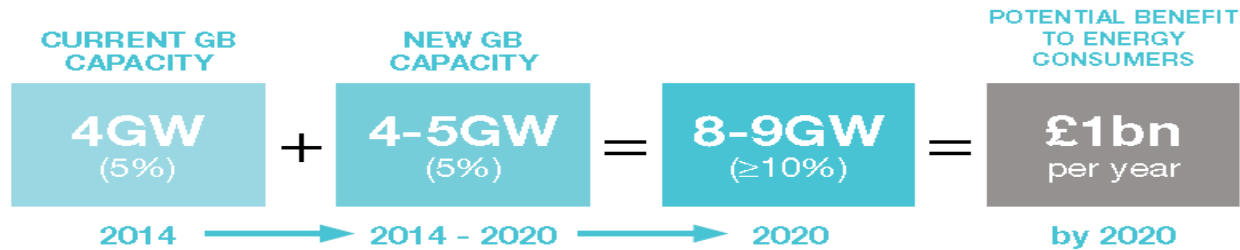
Failure to double existing interconnector capacity to nearer the 10% proposed by the European Commission could be equivalent to foregoing wholesale electricity price reduction of nearly £3million every day.

Primary Energy Trends

More than half (53.5%) of the EU-28's gross inland energy consumption in 2014 came from imported sources.

The production of primary energy in the EU-28 was 17.3 % lower in 2014 than it had been a decade earlier.

The UK primary energy production fell by 24.1% between 2004 and 2014. In the same period, France had the highest level of energy production (17% share) among the EU Member States and levels remained unchanged (82% nuclear, 15% renewables).



Market Overview

Ofgem introduced a Cap and Floor regime to drive increased development of interconnector projects – with 4GW now under development

GB Interconnector Development

Project Name	Developers	Connecting Country	Capacity	Cap and Floor Regime?	Delivery Date
IFA	NGIH ¹ and RTE	France	2,000MW	No	1986
Moyle	Mutual Energy	Ireland	500MW	No	2002
BritNed	NGIH and TenneT	Netherlands	1,000MW	No	2011
EWIC	EirGrid	Ireland	500MW	No	2012
ElecLink	Star Capital Partners Limited and Groupe Eurotunnel	France	1,000MW	No	2019
NEMO	NGIH and Elia	Belgium	1,000MW	Yes	2019
NSN	NGIH and Statnett	Norway	1,400MW	Yes	2020
FAB Link	FAB Link Ltd and RTE	France	1,400MW	Yes	2022
IFA2	NGIH and RTE	France	1,000MW	Yes	2020
Viking	NGIH and Energinet.dk	Denmark	1,000MW	Yes	2022
Greenlink	Element Power	Ireland	500MW	Yes	2021



(1) National Grid Interconnector Holdings

Overview of the Project

FAB is a critical project to help meet the approximately 4GW of additional capacity required between the UK and France

Overview

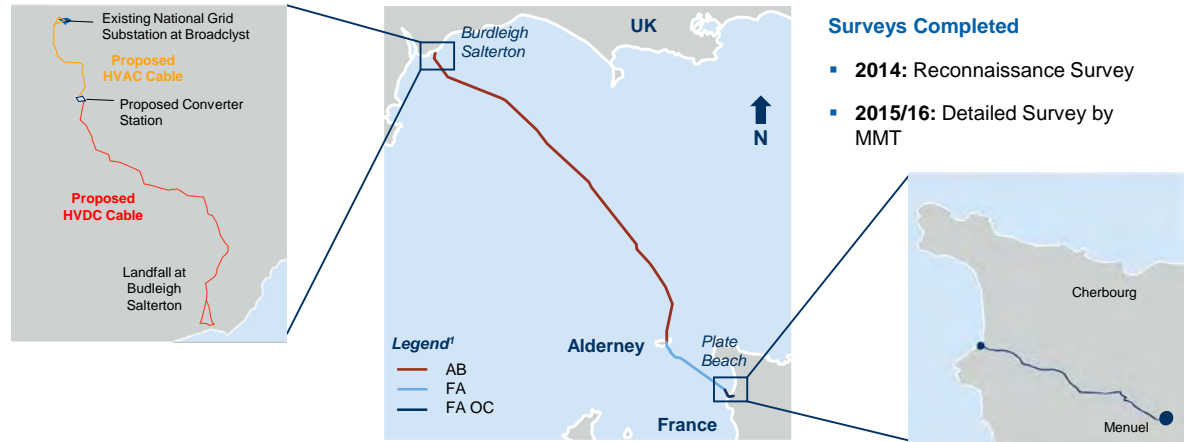
1,400 MW interconnector project between the UK and France via the island of Alderney comprising:

- Two 220km pairs of electrical cables
- Converter stations at both ends in the UK and France
- Connections into the high voltage grids between Exeter and Mennuel

The Project is designed to also enable a route to market in the future for tidal stream renewable energy planned to be constructed in the seas around Alderney

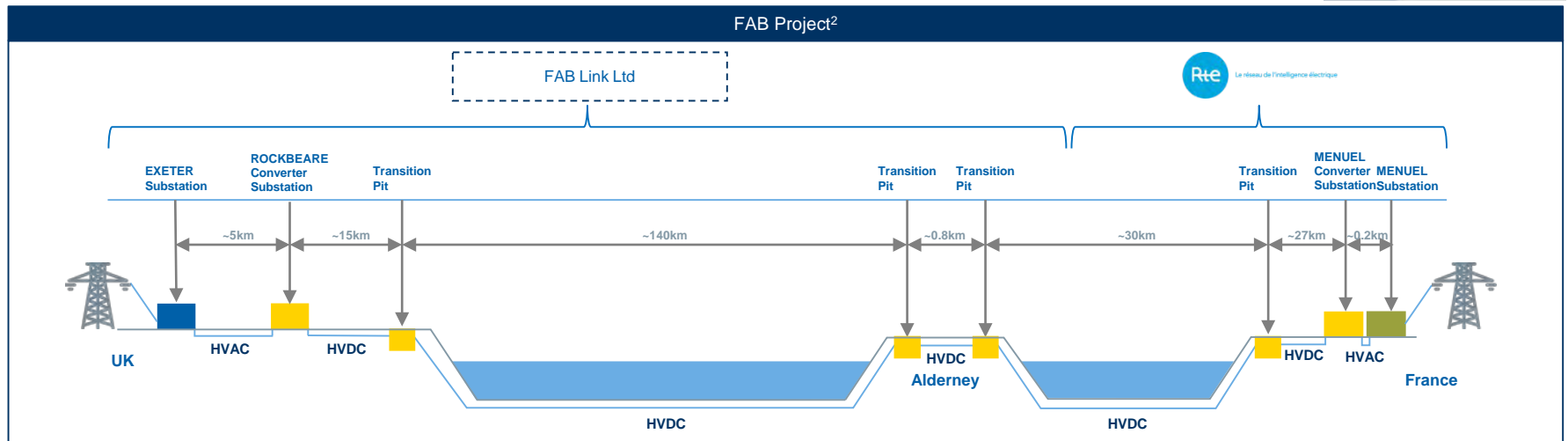
Total capital expenditure of up to €1.5bn

Location Map



Surveys Completed

- 2014: Reconnaissance Survey
- 2015/16: Detailed Survey by MMT



(1) AB = Alderney to Great Britain; FA = France to Alderney; FA OC = France to Alderney Onshore Cable

(2) RTE are responsible for the elements in France and the French territorial waters

Project Developers

Joint Venture with one of Europe's largest regulated utilities

Ownership Structure



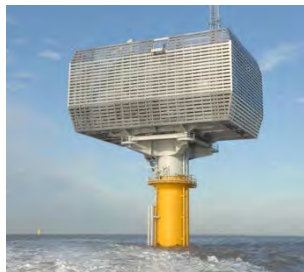
Réseau de transport d'électricité (RTE)

- owns and operates the whole French transmission grid including all international links.



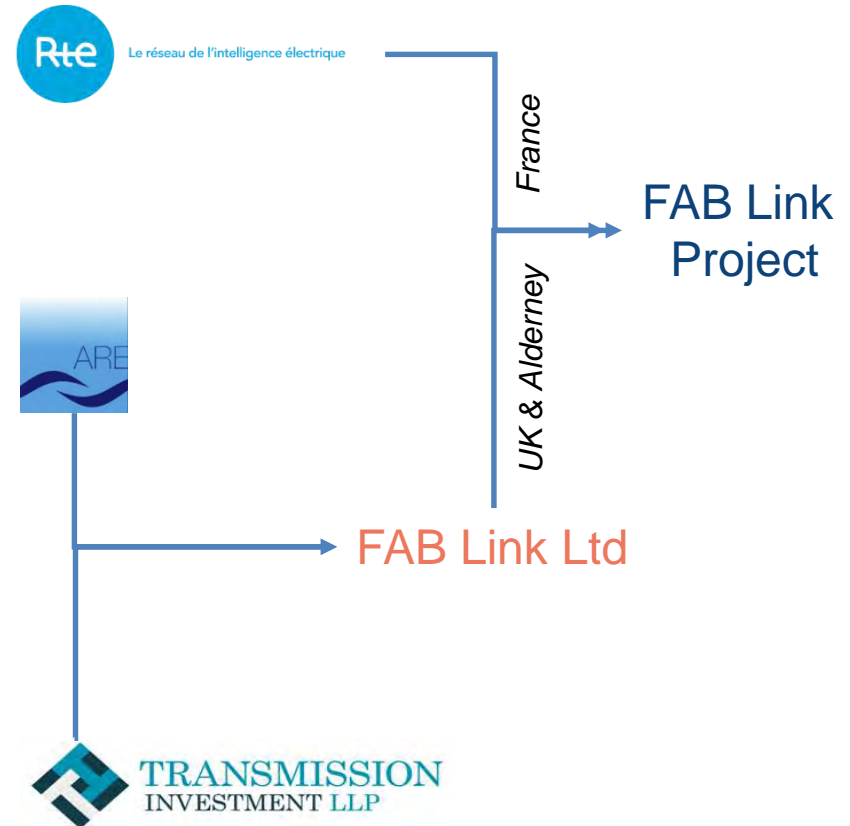
Alderney Renewable Energy (ARE)

- holds a 65 year licence to exploit tidal-flow power in Alderney waters.



Transmission Investment (TI)

- an independent transmission business spanning origination, project development, acquisition, financial structuring and asset management. Manages transmission assets for 6 offshore wind farms.



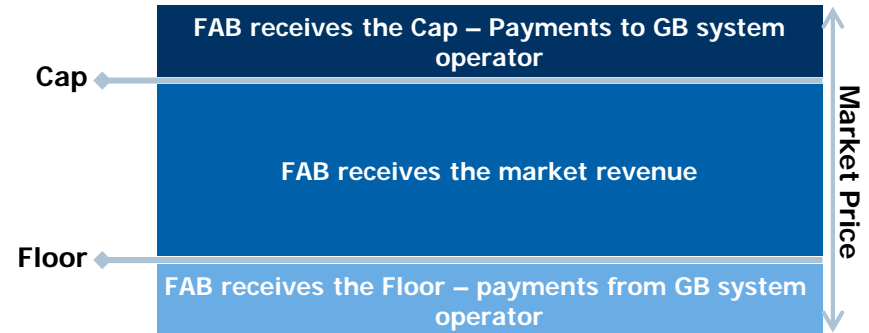
Ofgem Cap and Floor Regulatory Model Overview

25 year Ofgem regulated cap and floor regime provides a baseline revenue profile

Cap and Floor Overview

- Cap and Floor levels indexed to RPI
- Reconciliation post revenue received:
 - Revenue in excess of the Cap returned to customers
 - Compensation received for revenue below Floor
- Requirement to maintain 80% annual availability to automatically receive Floor payments
 - Downtime as a result of a force majeure event treated as available time
- Flexibility for operating expense review during operational period

Revenue Received Post Reconciliation



Cap and floor building blocks



Technical Overview

Two pairs of (700 MW, 320 kV) electrical cables (220km), a converter station at each end, and connections into the high voltage grids between Exeter, in Devon and Menuel, Cotentin Peninsula (Normandy) in France

Technical Overview

Offshore

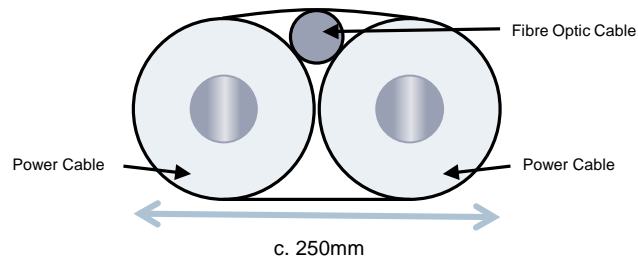
- Two pairs of high voltage DC (“HVDC”) submarine cables, each 170km long (in two sections: France to Alderney and Alderney to Britain);

Onshore

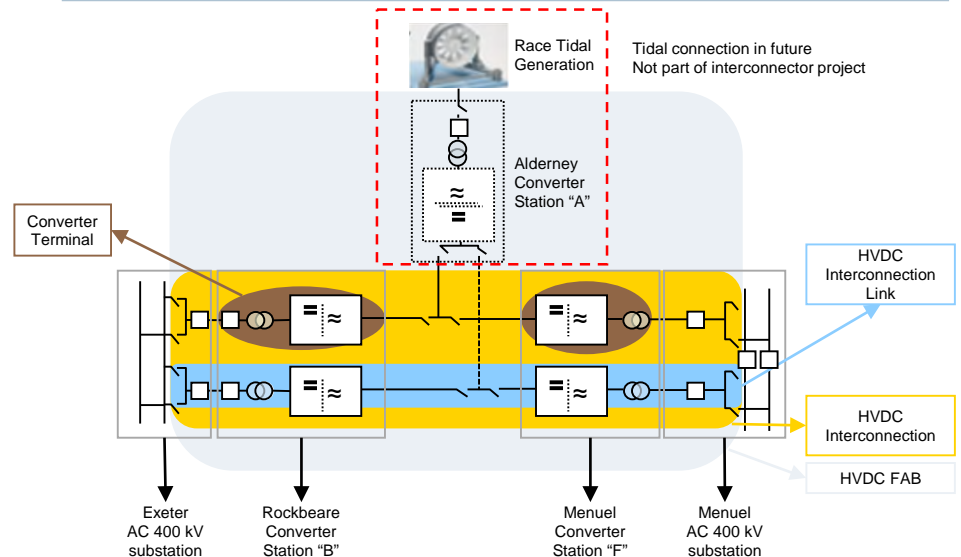
The project is comprised of:

- Two pairs of high voltage DC underground cables in three sections:
 - c. 25 km in France to reach the converter station adjacent to the 400,000 volt Menuel substation
 - c. 1km across Alderney
 - c. 20km in England to reach the converter station to be connected into the 400,000 volt Exeter substation
- An underground chamber at each landing junction to connect the submarine and terrestrial cables; and
- A converter station at each end of the link for converting the direct current into alternating current

Submarine Cable Cross Section



Project Summary

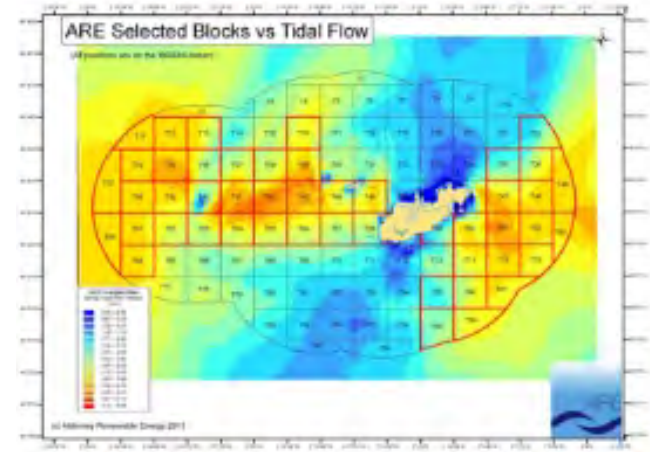


Race Tidal

Tidal technology company OpenHydro, a DCNS company, and Alderney Renewable Energy (ARE) are jointly developing Race Tidal, a 300MW tidal array in Alderney waters.

Technical Overview

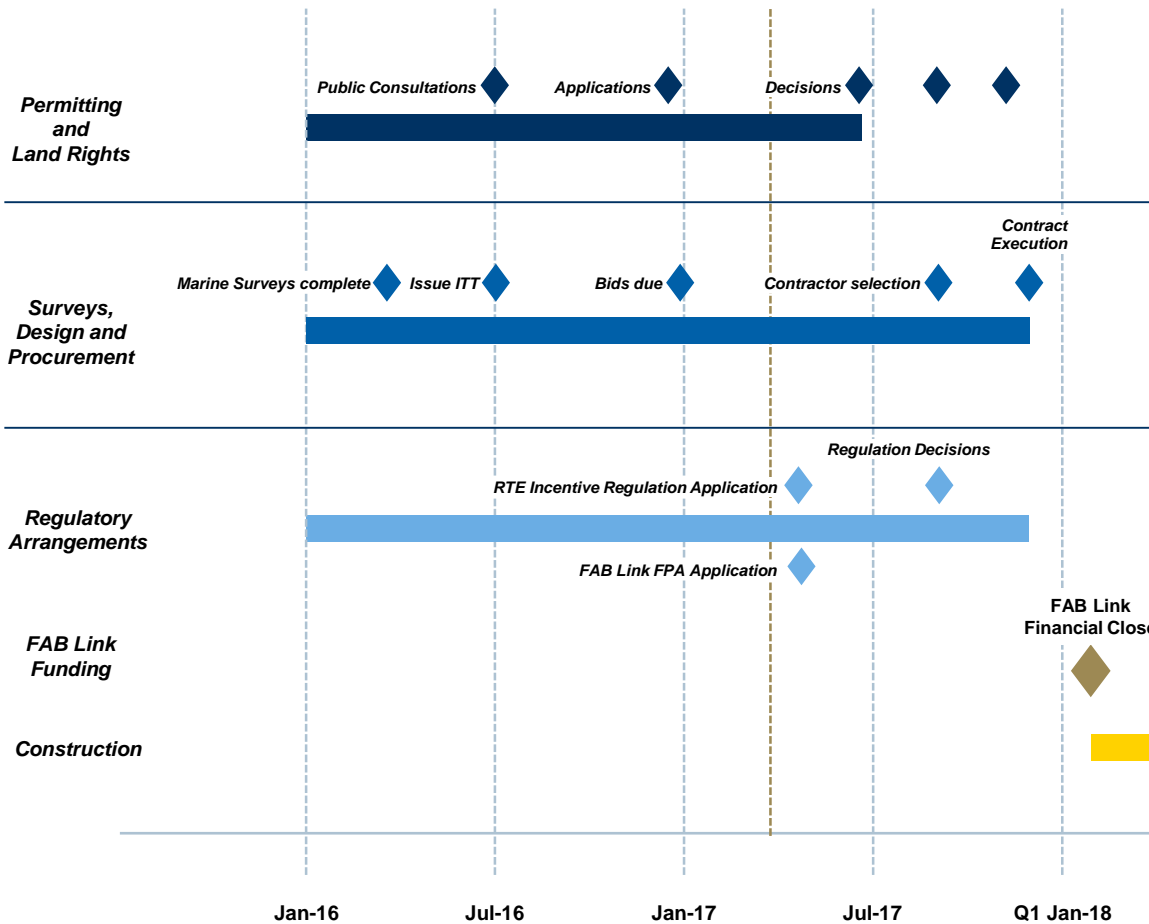
- In 2008, ARE secured a 65 year licence from The States of Alderney and the Alderney Commission for Renewable Energy. The licence provides ARE with access to Alderney's Territorial waters, an area of 48 square miles, and permits ARE to install tidal turbines and infrastructure for renewable energy systems. The tidal resource in this area alone is estimated to produce enough power for 1.8 million homes.
- OpenHydro installed the first; 16m 2.2 MW turbine in the EDF Paimpol Project in France in November 2011. Further turbines were installed in 2016.
- FAB Link Project has been designed to incorporate a multi-terminal system to provide the future connection of tidal energy projects around Alderney.
- Race Tidal Ltd is a separate project to FAB Link and will be subject to separate planning applications, including the onshore converter station.
- Future extractable energy has been estimated and modelled at greater than 3 GW



Summary Schedule

Financial close anticipated in Q1 2018

Illustrative Timeline



Key Milestones Achieved

- ✓ French onshore route corridor secured and environmental impact assessment submitted – public inquiry completed with positive recommendation
- ✓ Alderney off and onshore route property rights secured
- ✓ UK converter station property rights secured
- ✓ UK key consent applications submitted

- ✓ Basis of Design completed
- ✓ Marine route selected and survey conducted
- ✓ EPC Contractor tender process – tenders received and assessment underway

- ✓ Ofgem Cap & Floor Initial Project Assessment awarded
- ✓ Connecting Europe Facility development funding maintained
- ✓ Project of Common Interest status maintained

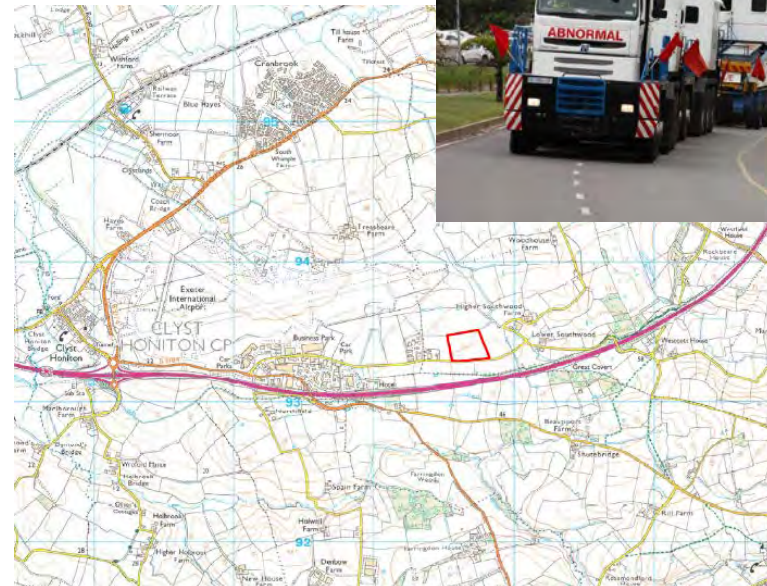
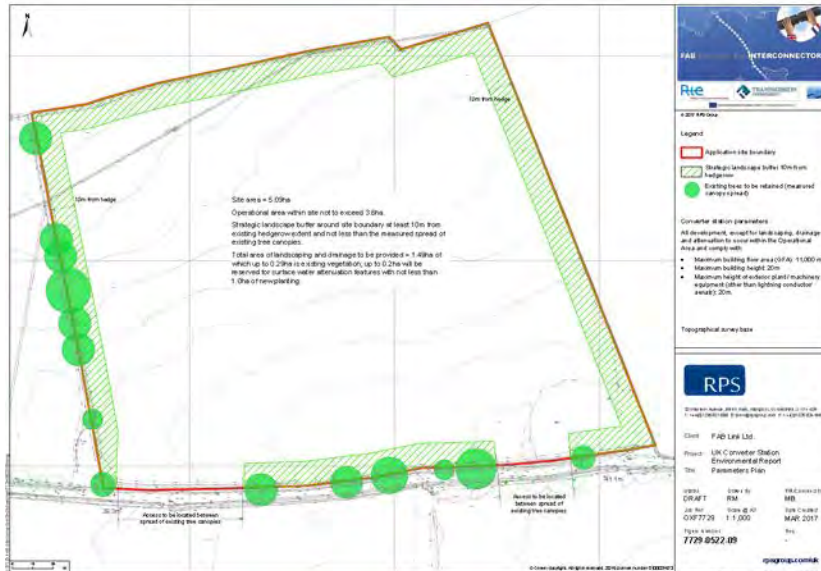
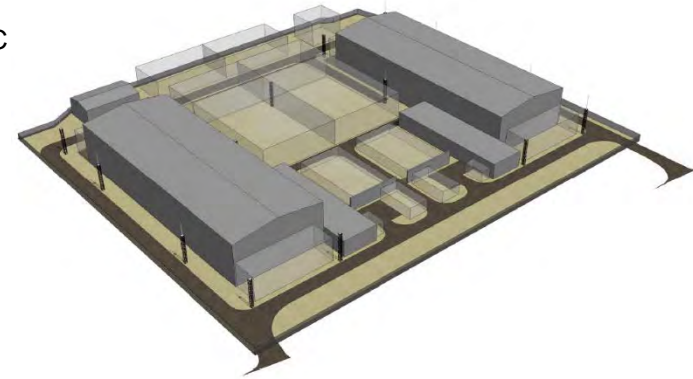
Commercial Operation by early 2022

Consent Applications – Update (1)

Outline Planning Permission Application for a Converter Station to East Devon District Council (EDDC)

Conversion of AC current to DC and vice-versa is carried out by means of a high voltage AC/DC converter station.

- Outline Planning Permission submitted on 15th December 2016 to EDDC
- Decision expected in May/June 2017
- Selection of site undertaken in consultation with EDDC
- Site area = 5.09ha.
- Max building floor area = 11,000m²
- Landscaping & drainage area = 1.49ha with not less than 1.0ha of new planting
- Max building height = 20m
- Commitment to make future ready to connect to Decentralised Energy Network
- Highways improvement local access road to benefit local businesses

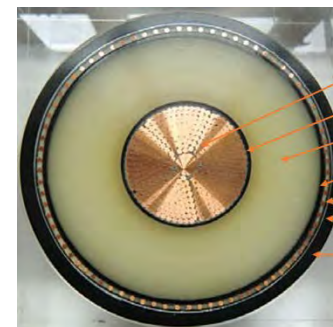
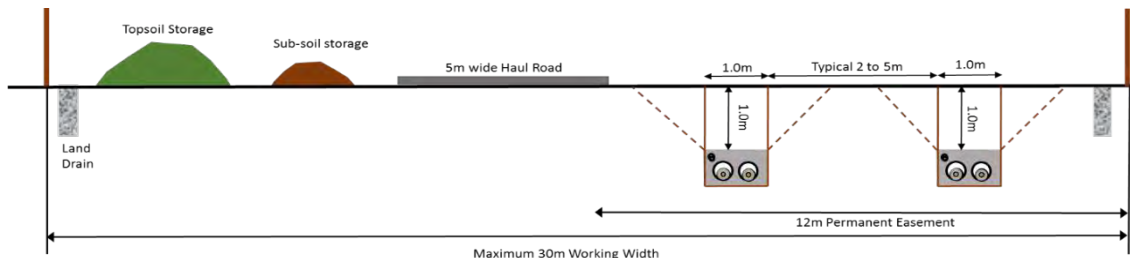
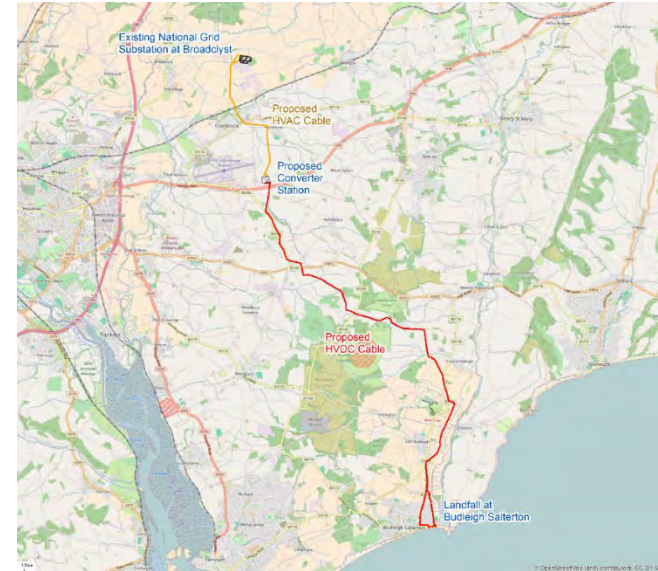


Consent Applications – Update (2)

Application for a Certificate of Lawful Development for a proposed use or development in relation to the proposed cable and associated works to East Devon District Council (EDDC)

Laying of approximately 20km of underground cables and associated working corridor, temporary access roads, temporary construction compounds and improvement to existing accesses to highways:

- Application for Certificate of Lawful Development submitted on 15th December 2016 to EDDC
- Decision expected in May/June 2017
- Town and Country Planning (General Permitted Development) (England) Order 2015 (GPDO).
- FAB Link Limited is a licence holder within the meaning of section 64(1) of the Electricity Act 1989, and so for the purpose of the GPDO is a statutory undertaker.
- Amendments to route after consultation in summer 2016 (Appendix 10 of Consultation Report).
- Commitment to draft Code of Construction Practice and Environmental Management Plan, incorporating Traffic Management Plan, Ecology Management Plan, Written Scheme of Investigation for Archaeology, Waste Management Plan, training, competence and supervision requirements.
- Over 150 stakeholder and landowner meetings to date.
- Over 200 underground utility crossings.

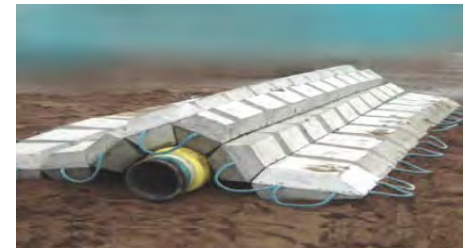
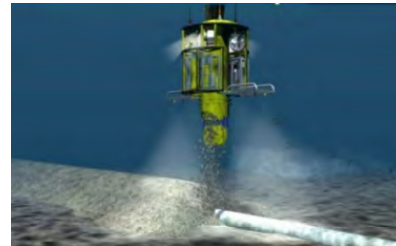
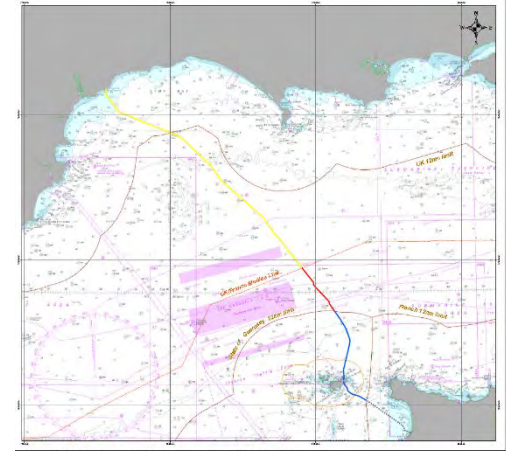


Consent Applications – Update (3)

Marine Licence Application for offshore cable laying works to the Marine Management Organisation (MMO)

Laying and burial of a cable within 12 nautical miles of the coastline (i.e. territorial waters) and the deposition of cable protection material and seabed preparation within the offshore marine area (outside of 12 nautical miles, EEZ).

- Submitted to the Marine Management Organisation on 23rd December 2016.
- Decision expected in May 2017.
- Discussions with contractors has confirmed likelihood that Horizontal Directional Drilling (HDD) should be feasible. Option for open cut retained, but would require further discussions with stakeholders.
- No works in July or August.

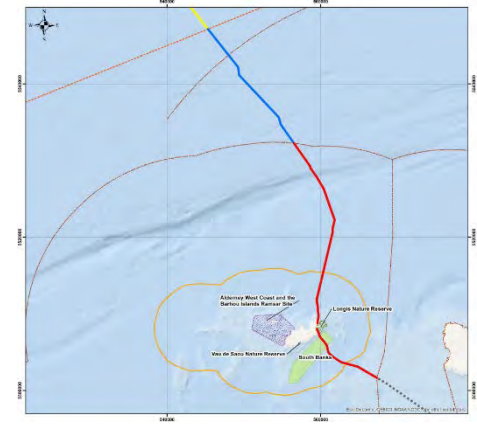


Consent Applications – Update (4)

FEPA Licence Application for offshore cable laying works to the States of Guernsey (Office of Environmental Health and Pollution Regulation)

Laying and burial of a cable and the deposition of cable protection material and seabed preparation seawards of the tidal limit of Mean High Water Springs within the State of Alderney & State of Guernsey territorial waters.

- Submitted to the States of Guernsey on 3rd January 2017.
- Decision expected in May 2017.



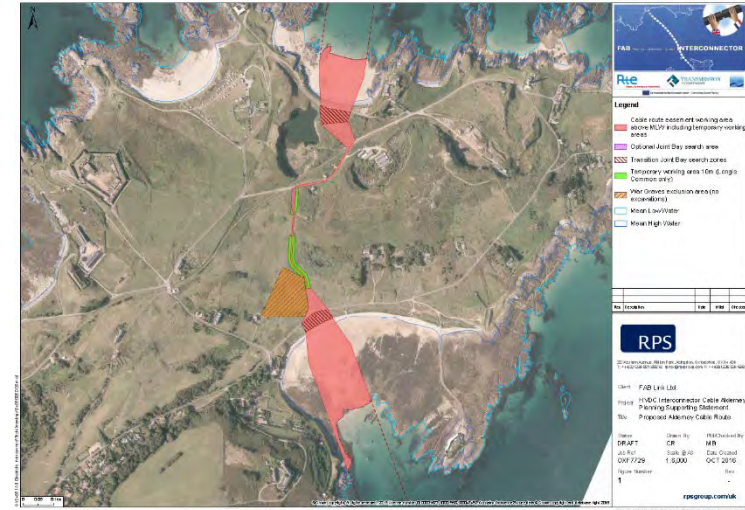


Consent Applications – Update (5)

Planning permission in accordance with the Building and Development Control (Alderney) Law 2002 for onshore cable works.Licence

Installation of underground cables above Mean Low Water within the States of Alderney

- Anticipate to be submitted in Q3 2017
- Subject to amendment of S.12 of the Alderney Law to enable planning application to be determined
- Decision expected in Q4 2017.



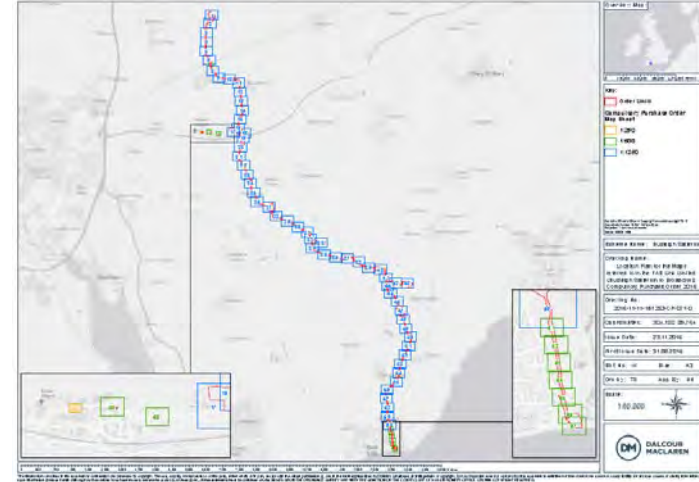
Property Rights and Compulsory Purchase Order

Key activities in 2017

The Compulsory Purchase Order was made by FAB Link Limited on 2 December 2016 and, if confirmed by the Secretary of State for Business, Energy and Industrial Strategy, will authorise FAB Link Limited to purchase compulsorily land and new rights over land for the purpose of construction, operation and maintenance of a high voltage electrical interconnector, including a converter station and associated works between Budleigh Salterton and Broadclyst in Devon.

In parallel, FAB Link is planning the following activities in 2017:

- Progressing options for easement by mutual agreement with 29 landowners
- Crossing Agreements with asset owners for underground utilities
- Recognition of proposals to relocate Budleigh Salterton Cricket Club



Key Challenges

Impact of Brexit for Interconnectors

Background:

- UK is part of the EU Single Market and the Internal Energy Market (IEM)
- Interconnectors require significant levels of cooperation between countries
- IEM means no boundaries or restrictions in relation to flow of electricity between countries
- IEM allows cross border trading without any import/export tariffs being applied

Short term impacts

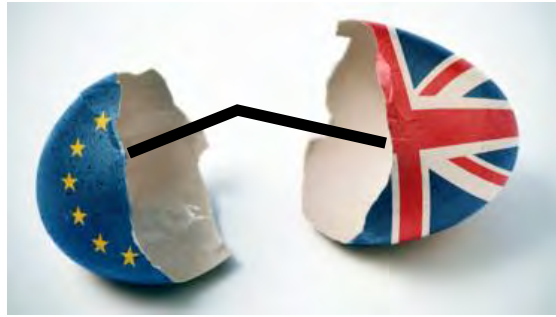
- During Brexit negotiations, uncertainty will raise cost of investment
- Fall in Sterling raises cost of importing electricity and cost of construction

Long term impacts

- Rules for trading electricity are very likely to change
- Dependent on outcome of the exit model to be adopted
- Stay in IEM (retain zero tariffs, but loss of influence with no voting rights)
- Leave the IEM (possible tariffs imposed by EU, or UK could impose tariffs in imports)
 - EEA & EFTA
 - Customs Union
 - Bilateral Agreements
 - Free Trade Agreements
 - World Trade Organisation (WTO) rules



Brexit: Business As Usual



“

The strategic case for trade in power both for the UK and EU Member States remains as strong as it was before the EU referendum. The fundamentals that drive the energy market have not changed. As a Government, we still need to ensure a secure and reliable electricity supply; we still need to bear down on costs faced by consumers, and we still need to ensure that we integrate low carbon power sources efficiently.

Interconnectors and trade in power contribute to all three aims. Whatever the ultimate relationship between the EU and the UK, we will be looking for arrangements that allow trade to take place efficiently, based on the market fundamentals, with regulatory arrangements that are as stable and predictable as possible.

In the Budget 2016, we confirmed support for an increase of at least 9GW of further interconnection and that position remains. We remain committed to our competitive, market-based approach to interconnection, where developers identify opportunities for future interconnection projects. The key driver of this is the arbitrage opportunity between GB and other markets. Therefore, I hope you continue to make timely progress towards realising the France-Alderney-Britain (FAB) interconnector project.

”

Letter to FAB Link Ltd from Baroness Neville Rolfe
Department of Business, Energy & Industrial Strategy
18th August 2016

The economic rationale to trade electricity between the UK and the continent remains strong and beneficial to consumers in both the UK and France.



Le réseau de l'intelligence électrique



TRANSMISSION
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Co-financed by the European Union
Connecting Europe Facility

Clean Energy and Renewables – Opportunities for European Collaboration

PANEL DISCUSSION | 10:15 – 11:45

Moderator:

Patricia Hawthorn - Chairman, *Scottish Renewables*

Panelists:

Cameron Smith – Director – Project Development, *Atlantis Resources*



WSG group 05th April 2017
Cameron Smith

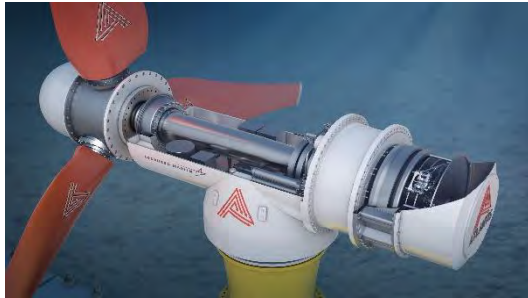


Agenda

- Introduction to Atlantis
- The MeyGen Project –build process
- European Collaboration.

Atlantis Resources Ltd (ARL:LN)

Leading the global development of tidal power generation



Turbine Division Turbine & equipment sales

Our **Turbine Division** sells tidal turbine generation equipment into our projects and to third party project developers. Supported globally by our technology partners, Lockheed Martin Corporation, Atlantis can provide drivetrain, nacelle fixation, subsea connection and power export equipment to the highest specification, capable of withstanding the harshest environments for the project life. Our new 1.5MW turbine, AR1500, has been deployed on the MeyGen project in 2017



Power Generation Division Global portfolio of projects

Atlantis is recognised as one of the world's leading developers of tidal power projects. Our **Power Generation Division** takes greenfield sites from concept through to commissioning. The Atlantis project portfolio currently under development is truly global, inclusive of activities in Scotland, China, Canada, India and Australia. We are constantly searching for new tracks of seabed real-estate to secure, consent, develop and finance



The MeyGen Project World's largest tidal power project

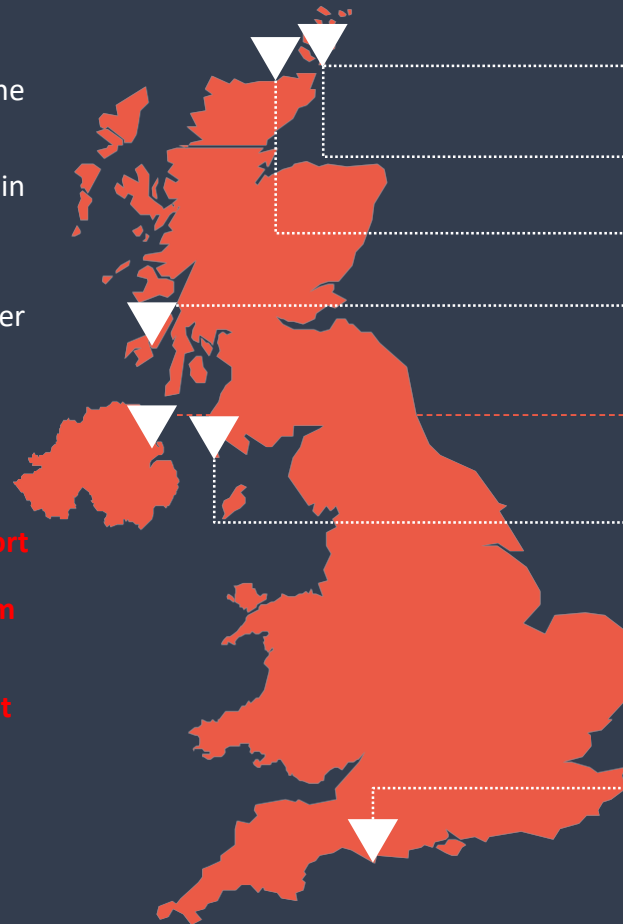
At 398MW, **MeyGen** is the world's largest tidal power project. Located in the inner sound of the Pentland Firth in Scotland, MeyGen is the UK's flagship project. Construction commenced in late 2014 subsequent to achieving financial close in October 2015 for Phase 1A. Atlantis owns 86.5% of the MeyGen project, and the funding syndicate includes the Scottish Investment Bank, The Crown Estate, DECC and HIE. 269 turbines will be installed on the site.

Update | Atlantis group's UK project portfolio

Creating the largest UK pipeline of tidal projects, combining assets from MCT and ScottishPower Renewables



- The additional project development capacity boosts the Atlantis project portfolio by over 70% and makes it the largest in the UK
- Siemens became a 10% shareholder in Atlantis
- SPR became a 6% shareholder alongside Atlantis (94%) in Tidal Power Scotland Limited (TPSL)
- **Deme Concessions** became a 2% shareholder in Tidal Power Scotland Limited in 2016 for £2m cash
- **Strong European Commission support for the MeyGen project and other projects in the TPSL portfolio > €37m in funding awarded for P1B in 2017**
- **No EC awarded funding under threat as a result of BREXIT and EC continuing to work with Atlantis on future funding packages**



BROUGH NESS | 100 MW

NESS OF DUNCANSBY | 100 MW

MEYGEN | 398 MW

SOUND OF ISLAY | 10 MW

STRANGFORD LOUGH | 21 MW

MULL OF GALLOWAY | 30 MW

PORTLAND BILL | 30 MW



MeyGen



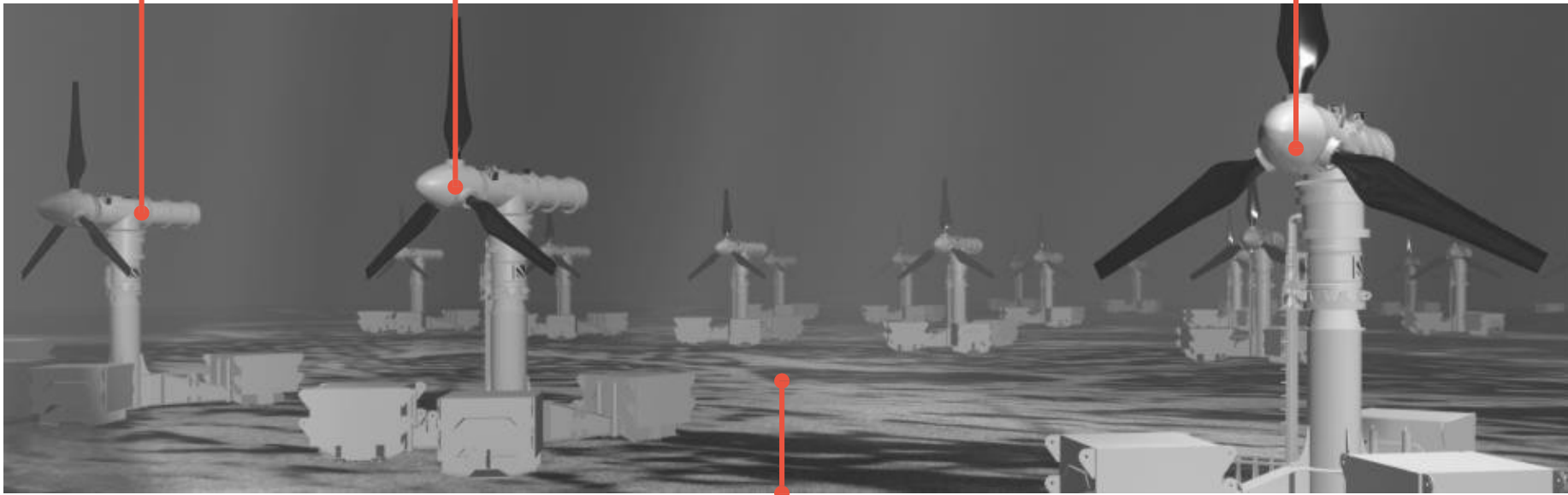
The MeyGen Project

Phase 1A – Summary

3 x 1.5MW turbines
from Andritz Hydro
Hammerfest

1 x 1.5MW turbine
from Atlantis

Gravity based foundation
structures with ballasted tripod



Individual cables to shore along natural seabed troughs
and through directionally drilled bores

Dynamic positioning vessels used for cable, foundation
and turbine installation to ensure safe station holding in
high currents

Grid connection at onshore site provided by
distribution network operator

Onshore electrical equipment and civil works
provided under EPC contract

TPSL | The MeyGen project

Near term roll-out



Project	MW	Financial close	Construction budget
MeyGen Phase 1A	6	2014	£51 million
MeyGen Phase 1B	6	2017	c.£40 million
MeyGen Phase 1C	74	2017	c.£200 million

£51M PROJECT FINANCING OF THE FIRST PHASE OF THE WORLD'S LARGEST TIDAL POWER PROJECT, MEYGEN



WHAT AN INCREDIBLE ACHIEVEMENT!

WE WOULD LIKE TO THANK ALL OF OUR PARTNERS,
WITHOUT YOU, THIS WOULD NOT HAVE BEEN POSSIBLE

MEYGEN ~~PHASE~~ 1A



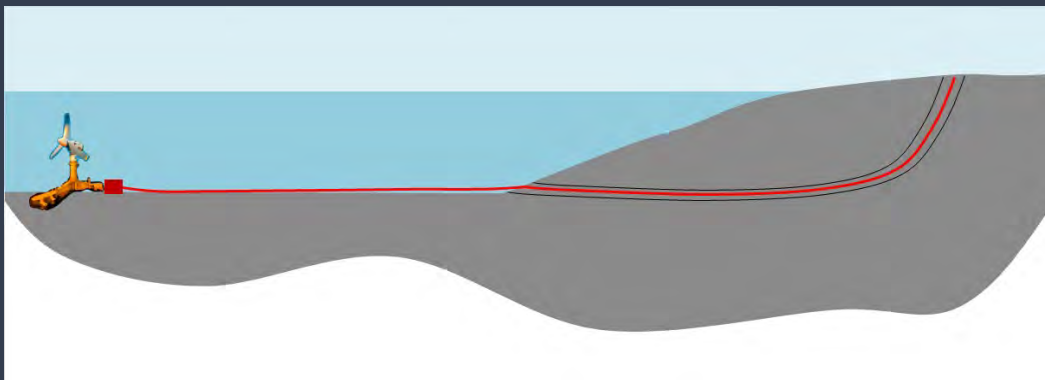
We're bringing the world tidal power energy today,
follow our journey at atlantisresourcesltd.com.

Update | MeyGen 1A

Horizontal directional drilling



All offshore power export cables successfully installed in 2015



Update | MeyGen 1A

Progressing to first power in 2016



11.5km of submarine cable installation completed in September 2015



The horizontal directional drilling program was a complete success during 2016



Update | MeyGen 1A

First power in 2016 achieved



Onshore electrical building complete



Power converters commissioned and grid connected

The onshore electrical equipment station located at the Ness of Quoy in Scotland



The onshore electrical equipment station located at the Ness of Quoy in Scotland



Nigg Energy Park

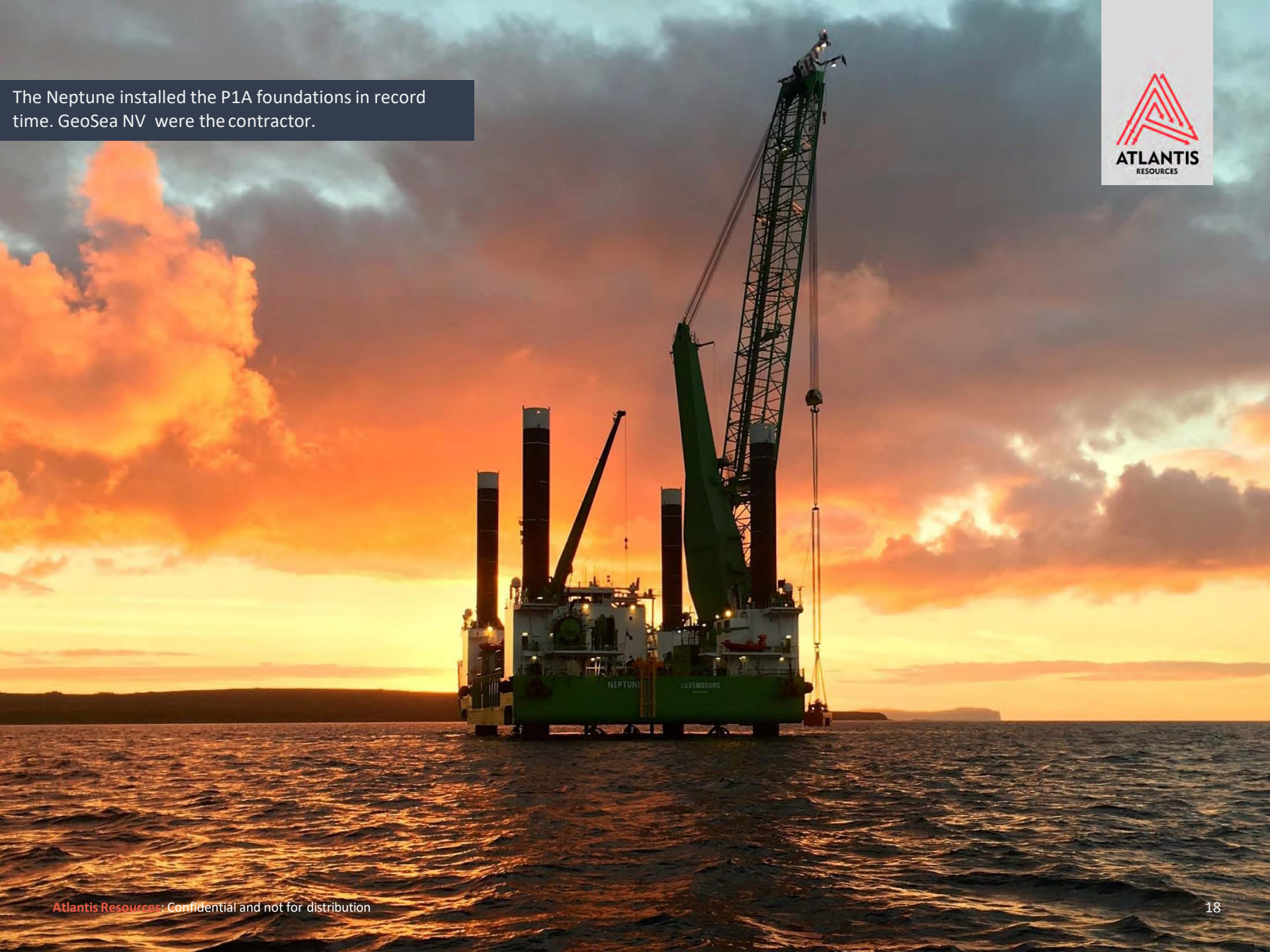




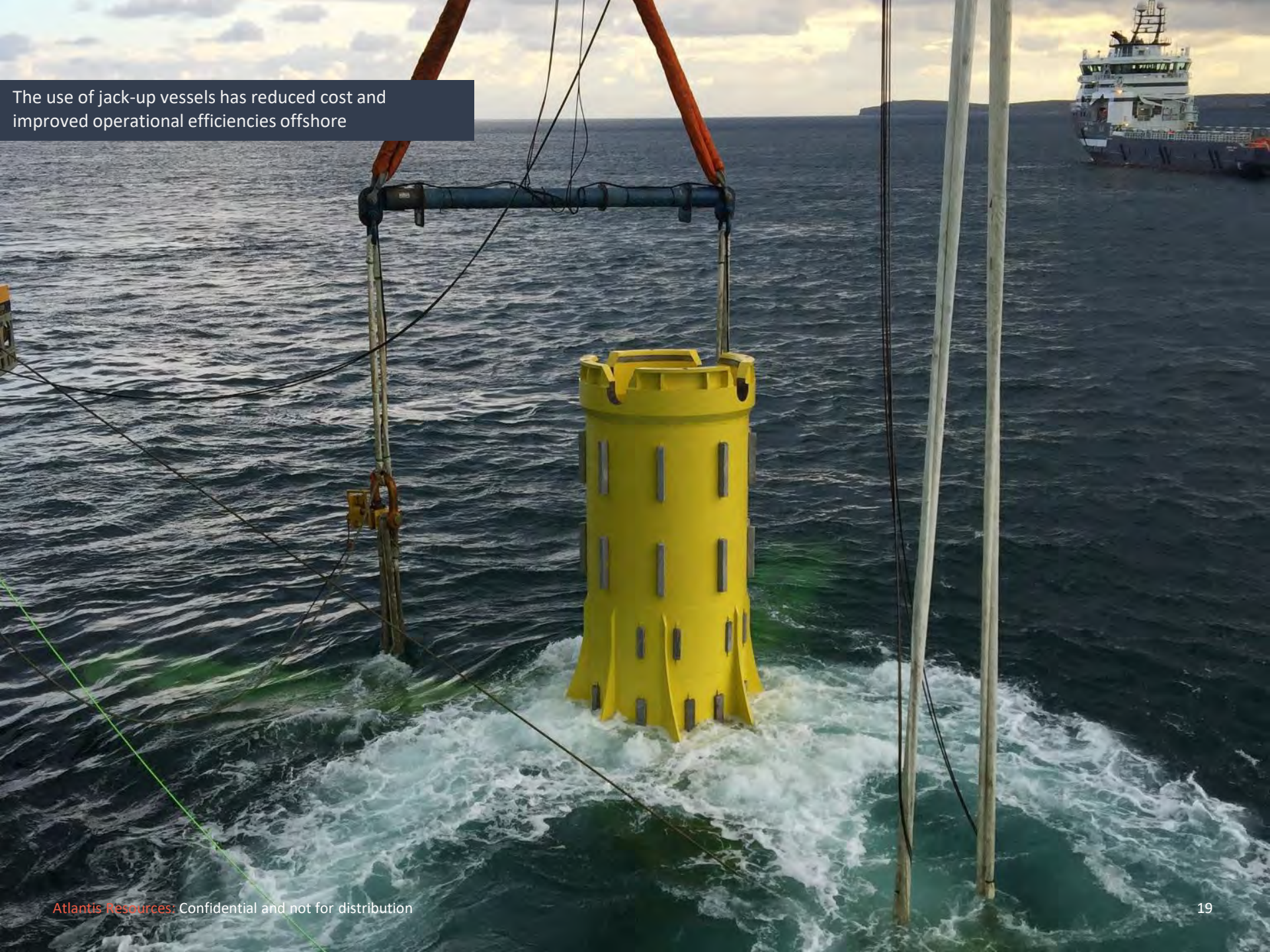
The turbine and cable installation works were carried out by James Fisher Marine Services Limited



The Neptune installed the P1A foundations in record time. GeoSea NV were the contractor.



The use of jack-up vessels has reduced cost and improved operational efficiencies offshore

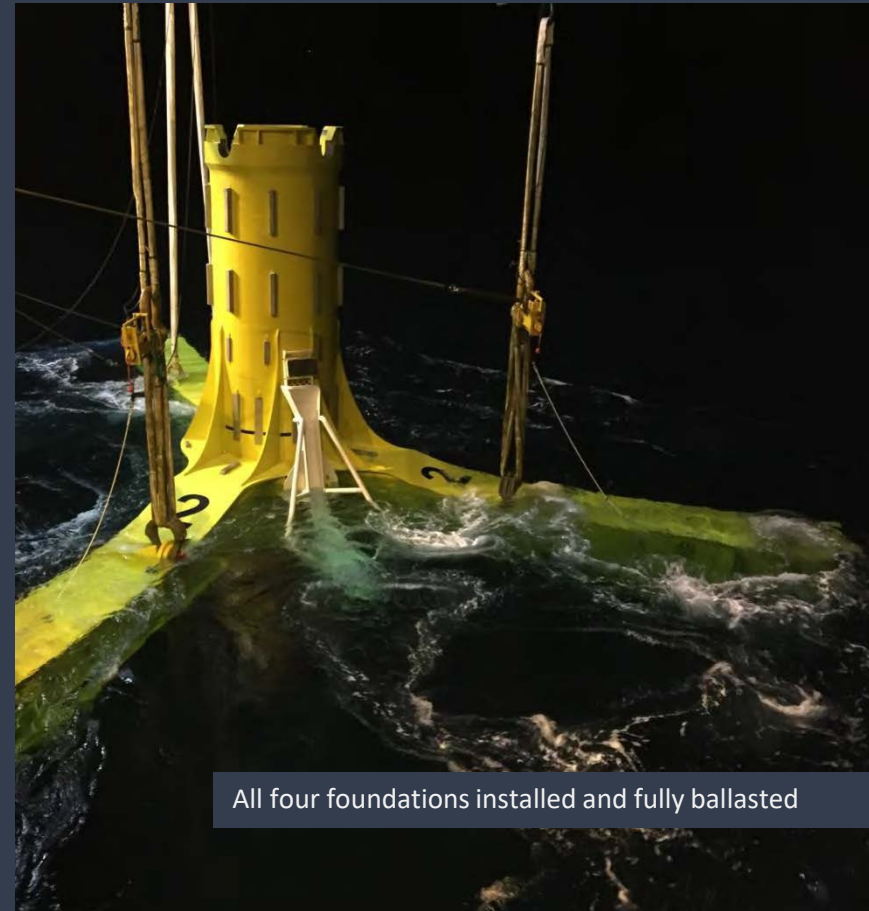


Update | MeyGen 1A

Foundations installed in record time on Phase 1A



Foundations constructed and ready for load out



All four foundations installed and fully ballasted

Ballast blocks – fabricated



Atlantis AR1500 turbine was installed in a record breaking 30 minutes in 2017



The HS1500 turbine is operating at full power after it was installed during 2016

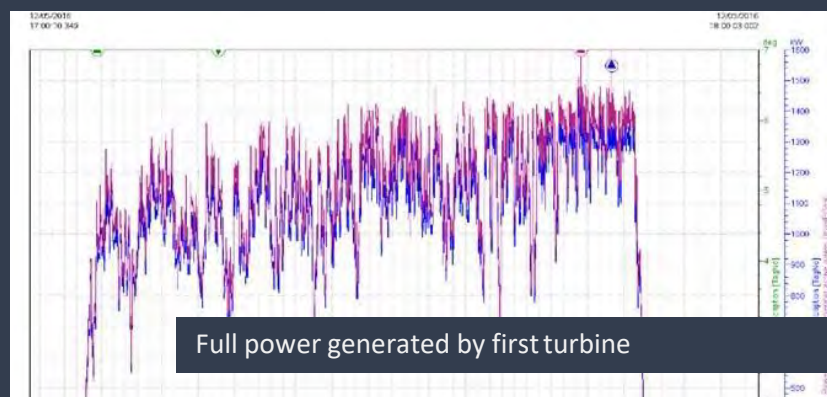


Update | MeyGen 1A

Predictable power generation



Andritz Hydro Hammerfest turbines



European Collaboration

- The tidal energy industry needs EC collaboration.
 - **Knowledge and expertise:** The best engineers and designers from the offshore wind sector across Europe work at MeyGen
 - **Components:** The project uses turbines from Germany and the UK, Andritz, ABB ,many others.
 - **Consents:** MeyGen worked with Marine Scotland to pioneer the “deploy and monitor” consent approach – working closely with the EC.
 - **Funding:** The next phase of MeyGen , 1b, has secured a combination of revenue support (New Entrant’s Reserve), CAPEX contributions (Horizon 2020) and loans (EIB – InnovFin) to allow the project to use innovative foundations, key to the industry's rollout.



ATLANTIS ENERGY

Floating offshore **wind**

Interconnectors

Pumped storage

Tidal range

www.atlantisresourcesltd.com

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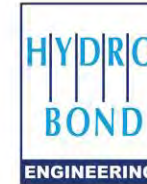


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HRI ARCHITECTS



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