

# Not the rage of the tide but its calm power provides the energy to generate electricity

by Mike Howlett

**T**HE NORTHERN TIDAL POWER Gateways Project is in the final round of discussions to secure the £500 million annual private investment required over the next eight years to harness the power of the Irish Sea. This capital sum – which the government is expected to match – will not only ensure the region keeps its lights on in the most cost effective way but also offers a range of benefits from creating 30,000 jobs and a new world-beating industry in the North, through flood prevention in Cumbria, to improve connectivity, efficient carriage of power lines and a wide range of other benefits.

Most of the energy focus of late has been on nuclear at Hinkley Point C amid a background of constant concerns over the technology, escalating costs and the highest ever agreed strike price of £92.50 Mwh (per megawatt hour), not to mention decommissioning costs. The Tidal Gateways initiative has been quietly delivering the message that it can provide not only half of the region's electricity requirement but also 5% of the total needed in the UK – all risk free

The Northern Tidal Power Gateways Project, now in final discussions, will produce 5% of the total energy needed in the UK and create 30,000 jobs

and below £70 Mwh. And once built, the Gateways can be maintained without any significant ongoing costs such as are associated with nuclear, including its eventual decommissioning.

The end game is to locate Gateways, also known as barrages, to straddle the six major estuaries to be found along the North West coast (Solway Firth, Duddon Estuary, Morecambe Bay, Ribble Estuary, Mersey Estuary, Dee Estuary).

These will provide power for five million homes which, combined with other sources, means tidal gateways have the potential to enable the UK to meet its renewable energy target of 33% by 2030, which otherwise probably will be missed.

It also offers significant rewards for both private investors and the government.

In total, the Northern Tidal Power

Gateways project will create in excess of 30,000 jobs and produce 5% of total electricity needed by the UK. It is estimated the Exchequer will benefit annually by £1.15bn and the region by £1.25bn, with direct monetary benefits from the renewable electricity generated expected to be £1.5bn per year, including the output from Morecambe Bay and the Duddon Estuary.

This is at a time when there is “a serious institutional interest in long term investment in infrastructure projects and compared with today's interest rates and yields on equities, a likely return of 4% would be more than acceptable,” according to Alan Torevell, the chairman of Dewhurst Torevell, the wealth management company, and founder of the project.

Yet, apart from the obvious financial returns, investors are looking favourably on Tidal Gateways as they are not subject to the variables of rival renew-

able energies such as wind and solar in terms of weather conditions. Whether the winds blow or the sun shines, tides simply come in and out twice a day.

There is also assurance for the money men in the fact that here is a proven technology that has been around for more than half a century and has already been shown to have few traditional ongoing costs over an accepted minimum lifespan of 125 years.

The world's first Tidal Gateway – La Rance in Brittany – is now producing the cheapest electricity in France after more than 50 years of entirely trouble free operations. It has never closed at any time other than for routine maintenance.

Opened in 1966, it is currently operated by EDF and was for 45 years the largest tidal power station in the world by installed capacity until the South Korean Sihwa Lake Tidal Power Station surpassed it in 2011.

The construction of the Rance tidal power plant started back in 1963 and was completed in November 1966 when it was opened by Charles de Gaulle. It has also been successful as a tourist attraction, with some 60,000 people now visiting every year and the estuary

now attracts water sports enthusiasts all year round. It has also created a transport link between St Malo and Dinard, cutting a 45km journey down to 15km.

Investors are also taking comfort from the fact that La Rance is seen as an answer in part to the powerful environmental lobby who have raised concerns about what will happen to the birds – particularly waders – which make the six North Western estuaries their habitat.

Whereas the key argument to counter the environmental lobby is that the barrages will make little or no difference to the way tides come in and out, so will have little impact on the mud flats essential to the birds, the environmentalists understandably are asking for proof.

The experience of La Rance goes some

***The first gateway is now producing the cheapest energy in France***



way to offer this. During the three-year period of construction, the estuary there was closed so dispersing the 120 varieties of birds found before construction. Post-construction, and following a major environmental study, 120 varieties of birds were found to be using the estuary again.

It has also not gone unnoticed by potential funders that the Northern Tidal Power Gateways Project has the full backing of the powerful North West Business Leadership Team and a range of experts such as Professor George Aggidis, one of the world's leading experts on the subject and Head of the Lancaster University Renewable Energy Group (LUREG).

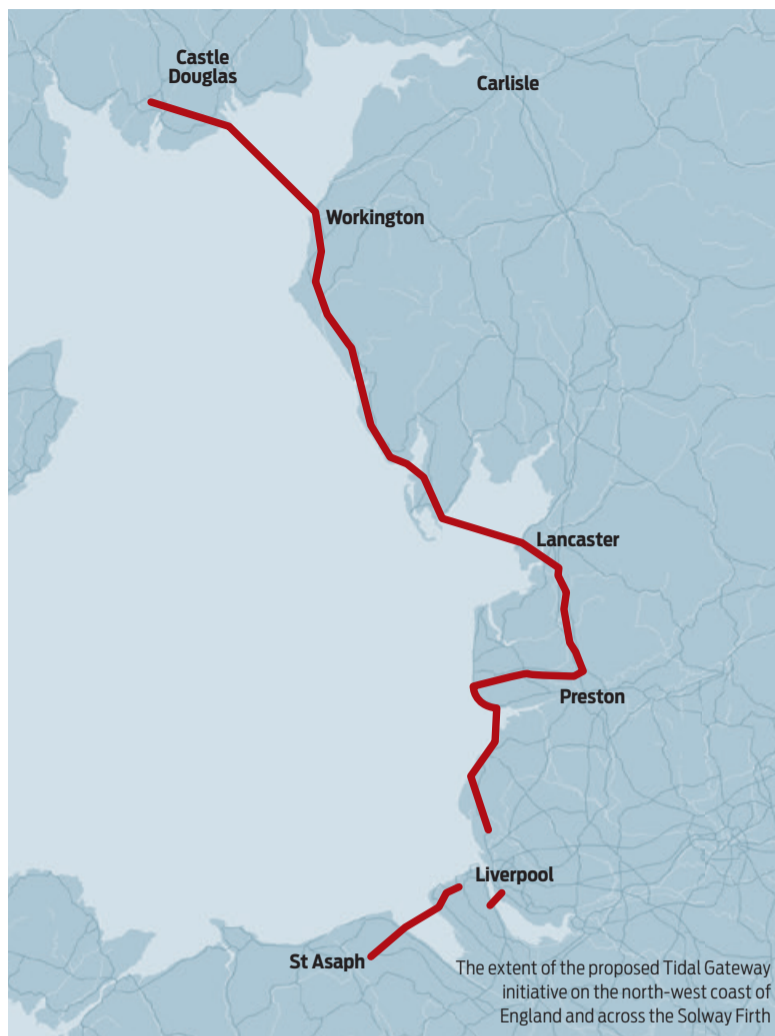
Meanwhile, investors looking at the Tidal Gateways are also being swayed by the fact that they are the only source of energy to also provide a diverse package of highly significant additional economic and social benefits for the region.

That the plan involves putting dual carriageways across the top of the gateways, then connecting these roads to create a continuous route down the North West coast from South West Scotland to North Wales, is seen as a move that will be transformative for the region in terms of accessibility, reducing journey times, cutting carbon emissions and reducing global warming.

Connected gateways across Morecambe Bay and the Duddon estuary, between Heysham and Millom for one will shorten journey distances from 56 miles to 22 miles and, more impressively, time taken will be reduced from one hour 50 minutes to just 24 minutes. Estimates are that based on an assumption of six million journeys a year, the miles saved, and reduced fuel consumption, will save £72m a year and 72m litres of fossil fuel a year. The savings in time will also have a benefit of £300m a year.

The major reduction in journey time between Heysham and Barrow would also improve the business opportunities and tourism on the West Cumbrian coast, up to Stranraer and down to the Fylde Coast boosting business in Blackpool.

The provision of new roads will not only service the Tidal Gateways but also create easier access to places renowned for their inaccessibility such as Barrow; and also boost tourism by making it easier to get to the western Lake District.



## Powerful arguments

- The Gateways and associated roads will connect the North West from North Wales to South West Scotland.
- The project will generate some 30,000 jobs
- The project will help with the prevention of flooding
- The project will provide positive contributions to the exchequer from day one
- Tidal range turbines should generate enough electricity for about five million homes
- Turbines and gateways will work trouble free for approximately 125 years
- The project will improve the tourist and industrial potential of the whole area. With careful planning the project can improve the environment both physically and for birds, fish and animals
- The project could create a substantial return to public and private investors
- The project is endorsed by Professor George Aggidis of LUREG, a leading expert on tidal energy
- The project is supported by the North West Business Leadership Team (NWBLT)

“The thinking suggested that this could add a further seven million tourists to the 35 million who already visit the region, providing a much needed boost to the local economies of places such as Whitehaven and Maryport which are currently mainly off the mainstream radar,” says Alan Torevell.

“If you bring in seven million people to the west coast who weren't coming before – and they spend the average of a bit over £100 a day – 100 times 7 million is £700 million – that is going to transform the west coast.”

Then of course, there is the not so small issue of flood prevention, something the Cumbrian people certainly will appreciate. It is suggested that by 2080 sea levels may have risen by around 800mm, compounding the existing problem.

Because the Tidal Gateways can be used to reduce extreme tidal surges – a significant contributor to marine flooding – this offers a major boon not only to the residents of Cumbria who suffered from £500m of flood damage last year, double the devastation of previous floods in 2009, but also to wading birds, as it will help protect their mud flats.

Last but certainly not least in terms of major benefits for the region is that the Northern Tidal Power Gateways Project will deliver 30,000 new jobs and not just a new company, but an entire new industry with a range of world beating skills for the North. Fortunately, the current timescale will have sufficient slack, for once, for the region's colleges and universities to ramp up to meet demand, rather than play catch-up as they are currently doing for existing sectors.

“We have the luxury of building up our skills base at the same time as we build our sector,” explains Torevell. “So just as soon as we have the money in place, we have around three years of infrastructure development to make sure we have the expertise to deliver the end product to deliver before we go live.”

He admits that when he first launched the Northern Tidal Power Gateways Project, it was simply because he saw it as a new and better way of generating renewable energy. “But then we began to see the advantages of connecting these Gateways and what these can bring to the region – and suddenly we had a transformative project that provided a case for serious investment.”

# Model of efficiency was festival centrepiece

By Frank Simpson

A LARGE WORKING MODEL (3.6 BY 1.2m) of the Northern Tidal Power Gateways Project was unveiled as the centrepiece of the International Festival of Business in Liverpool 2014.

Commissioned by the North West Business Leadership Team, it marked the launch of the official campaign to win acceptance for Tidal Gateway technology to be recognised and accepted by both business and the government as a viable form of renewable energy alongside wind and solar.

And it achieved its initial objective by forcing the project on to both the regional and national agenda through media coverage.

Since then, the Gateway team has been involved in an ongoing road show campaign to inform, and listen to the views of, local people along the



Alan Torevell, left, and Prof George Aggidis, Head of the Lancaster University Renewable Energy Group

North West coastline – delivering the messages of more jobs, better accessibility increased tourism, improved flood control.

Targeting concerned groups such as local rotary clubs, councils and retired engineers, the response was more than 98% positive to a questionnaire that formed part of the roadshow asking if people agreed with the use of Tidal Energy.

Typical of the comments recorded in the Visitors' Book for the events:

- “Best thing I have seen, good idea, when will it start?” *Cllr Angela Dixon*
- “Strikes me as sensible to harness Britain's wave power. Very interested.” *Jane Micklethwaite, Millom Town Councillor*
- “After many years of campaigning for a bridge across the bay only to be blocked by the administration, I am pleased to see this initiative is

going forward allowing Barrow and the West Coast to be opened to the outside areas. I fully support this project.” *Ken Williams*

■ “It's a great idea and should have been done 20 years ago. What it would do and what it would save is immense. Let's get started as soon as possible.” *AC Woodal, Rampside*

Meanwhile, just as importantly in terms of getting the message across, the road show also attracted coverage in both the national and regional press.

■ “Tidal project to link Workington with Kirkcudbright.” *BBC News*

■ “Multi Million Pound Project Could Link Towns Across Morecambe Bay.” *Choose Cumbria.*

“It was important to us that we got the feedback from local people rather than simply assume this is what they wanted,” says Alan Torevell.