

A chance to make

'A project of this scale could yield around £42 million a year in tax and create jobs'



■ An image showing what the wind farm could look like

By Tom Innes

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PROPOSALS for an offshore wind farm to be sited in Jersey's territorial waters offer a viable option to raise revenue required to meet the Island's "demographic challenges", the Economic Development Minister has said.

Throwing his weight behind a proposition that Jersey should commence the process of establishing a wind farm, due to be debated by the States Assembly next week, Deputy Kirsten Morel said he considered the project was an attractive and realistic option for increasing levels of government income.

Deputy Morel said he had spoken to senior officials involved in the recent project to construct a wind farm in the Bay of St Brieuc and was confident that the project was viable, and also revealed that he considered it more likely that Jersey would embark on a solo project, rather than join forces with Guernsey.

"A project of this scale, generating one gigawatt of electricity, could yield £300 million at eight pence per unit, which would mean an annual tax revenue of around £42m, as well as creating around 900 jobs in the construction phase and more than 100 in operations and maintenance," he said.

"If we want to grow the economy in different ways, helping pay for healthcare as our population ages, we need to get to grips with demographic challenges by generating more income – this is a tried-and-tested means of doing

Economic Development Minister Kirsten Morel considers the project to be an attractive and realistic one for increasing government income

that, and could act as an economic enabler for up to 40 years.

"If we didn't take an opportunity like this, we'd have to go looking for alternative ways of raising revenue, and there are a limited number of options for a small island to do that."

Deputy Morel said that having a completed wind farm visible off the Brittany coast was a reminder of the potential for wind power.

"We can see the St Brieuc project in operation and we know that it works and have spoken to some of those behind it," he said. "They carried out a lot of environmental

analysis which they'd be willing to share and much of which could be relevant to what we are looking at here."

The visual impact of a wind farm sited around ten miles south-west of Corbière was something the Economic Development Minister acknowledged, but said he did not see this as an issue that should stop Jersey proceeding.

"It would be more than the width of Jersey away from our nearest point," he said. "Personally I think it would be a lot less visually impactful compared with a large power station, although I appreciate beauty is in the eye of the beholder."

"It's also something that would be temporary – the likely lifespan could be around 40 years, at which point there may be other means of generating electricity and so it could then be decommissioned – that's quite different when you compare with something like Elizabeth Castle, which has been part of the landscape for 400 years."

The proposition would require ministers to bring forward appropriate policy and legislation before the end of 2024, and Deputy Morel said it was important to proceed without excessive delay.

"You need to go at a reasonable pace – if you look at St Brieuc, it's taken ten to 15 years to get it operational, and that's the sort of timescale I'd hope for here: we'd want it in place by the late 2030s."

"If you take 20 or 25 or 30 years then you've potentially moved beyond the win-

dow where you could really benefit from this."

Deputy Morel said that advances in technology meant it was likely that around twice as much electricity could be generated by a wind farm containing the same number of turbines as the St Brieuc project.

The question of public or private ownership was one the minister was keeping an open mind on, he said.

"I think the private sector would bring the experience, expertise and finance required, although some degree of public ownership could lead to greater financial benefit," he said.

"I think if you look at the 12 years that the hospital project has lasted so far, you'd need to admit that we'd be rookies in terms of developing a wind farm and question if we could do it [under public ownership] within 20 years, so I think the majority [ownership] would be from the private sector."

Although collaboration with Guernsey on the wind farm project has been advocated by some, Deputy Morel cooled expectations that this could be the way forward.

"I would like to think that Jersey and Guernsey would work together in future on a wider energy framework that might stretch 50 to 100 years into the future and incorporate new techniques, perhaps tidal," he said. "But this project is likely to be Jersey-focused."

"We have clear advantage in terms of shallower waters, whereas Guernsey might be looking at floating platforms, which would bring much higher costs."

Deputy Morel said the question of where the surplus electricity generated would be sold was another detail that would need to be finalised at a future stage.

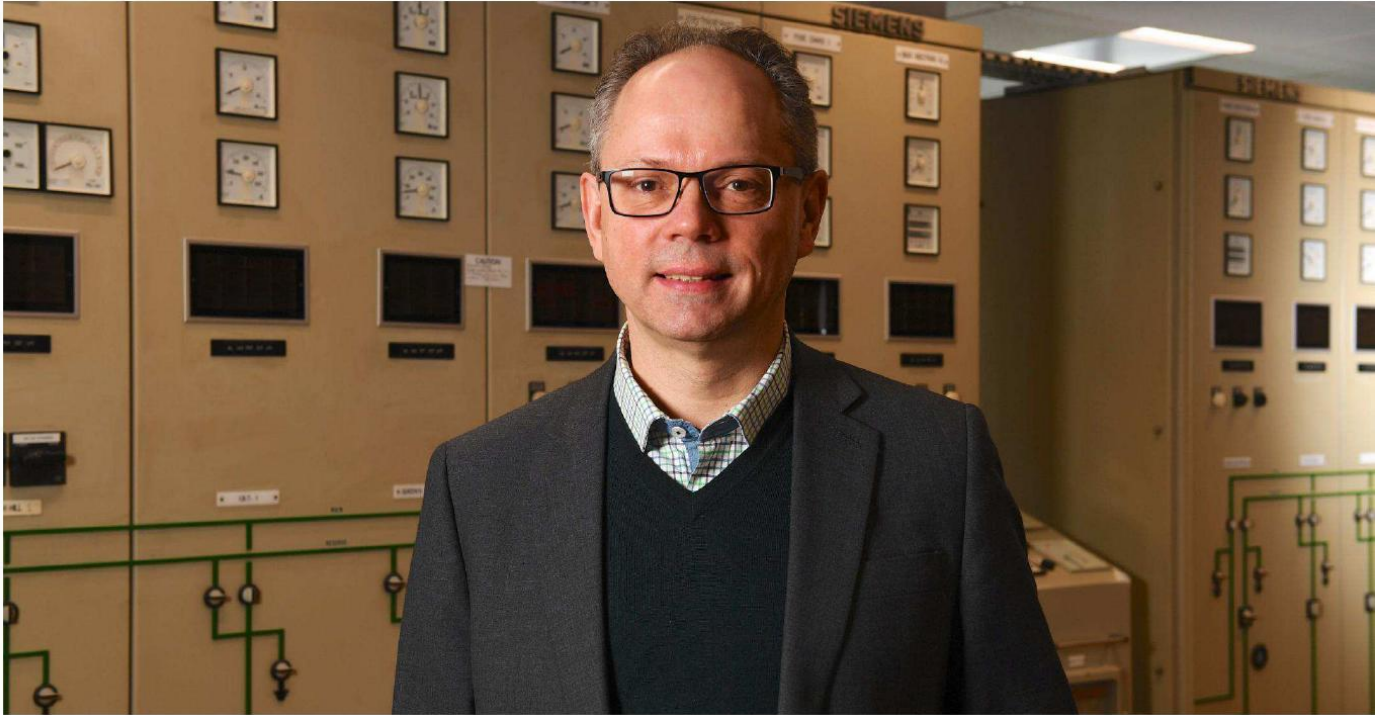
"It would help us achieve far greater energy security for Jersey," he added. "Beyond that it would be most likely we'd sell to Europe, but there could potentially be a cable to the UK."



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Deputy Kirsten Morel

money for Jersey



■ JE chief executive Chris Ambler: "We need to build an offshore wind farm that is of a sufficient scale to be economically viable"

Leasing Jersey's seabed for the scheme is the 'lowest risk opportunity' for the Island

By James Jeune

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LEASING Jersey's seabed for the development and operation of a wind farm is the "lowest risk opportunity" for the Island to be involved in such a project – should politicians vote to do so next week, according to the chief executive of Jersey Electricity.

Chris Ambler said that, given the project's potential cost of between two and three billion pounds, it would be "unrealistic" for local stakeholders to make a "meaningful investment" in terms of taking an ownership interest in the scheme.

Commenting on whether he thought the Island should instead focus on generating income by leasing the seabed for a wind farm, Mr Ambler said: "It's the lowest risk opportunity for Jersey but it gives the Island an opportunity for meaningful participation by earning a lease income and taxation income."

He continued: "The reason for that is that, in our strong view, we need to build an offshore wind farm that is of a sufficient scale to be economically viable. That's really important to attract the inward investment that's needed, of somewhere between two to three billion pounds. Obviously at that kind of scale, in order to achieve economic viability, I think it's unrealistic for

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If some of that power is going to be beached into Jersey, we would want to secure advantageous pricing

Chris Ambler



■ The St Brieuc wind farm on the horizon Picture: DAVID FERGUSON (37849779)

any local participants to make a meaningful investment of that kind of quantum.

"The States or others might wish to make more modest investments but two to three billion pounds takes it out of the reach of most stakeholders in Jersey."

He added: "But it may be possible for the government and possibly Jersey Electricity, if the conditions were right, to take a smaller stake in the development vehicle but there is a lot of water that needs to pass under the bridge before that can be established."

He also reiterated the potential opportunity for Islanders to take a "small stake" in the project with individual investments as low as £500 or £1,000.

Almost all of Jersey's electricity supply is imported from low-carbon, hydro and nuclear sources in France through three undersea cables, with the existing con-

tract with Électricité de France running until the end of 2027.

Mr Ambler explained that a one-gigawatt offshore wind farm would be capable of generating between seven or eight times the Island's annual electricity requirement.

"In terms of energy security, offshore wind is by far the most significant opportunity for meaningful energy diversification in Jersey over the medium term of ten years and beyond," he continued.

"Pricing is obviously going to be important and the bigger the wind farm, the easier it is to achieve a competitive price for the power coming off that wind farm."

"Clearly if some of that power is going to be beached into Jersey, we would want to secure advantageous pricing of that power relative to alternative sources of grid power, imported power, from France."

Partner proposal

■ A former minister has lodged a proposition calling for Jersey Electricity to become a partner in the government's wind-farm proposals. Former Housing Minister Deputy David Warr has amended the Council of Ministers' offshore wind proposition.

Deputy Warr said he wanted Jersey Electricity to be involved "during all stages of the development of an offshore wind farm, including but not limited to the establishment of processes for engaging third-party developers, and the utilisation of the company's sector knowledge, expertise and French contractual relationships to ensure that risks are managed appropriately".

In the report accompanying his amendment, Deputy Warr said: "Whilst I appreciate that the purpose of this proposition is for this Assembly to give a thumbs-up to continue investigating the opportunity, I think it's appropriate to delve into what I see as essentially a sales brochure."

If adopted when the proposition is debated next week, Deputy Warr's amendment would introduce a new paragraph into the proposition, giving the JEC a formal role in the development of plans for any offshore wind farm.

He argued that this would bring "the best people" together in the same room.

■ Deputy David Warr



The Weekend Essay – wind farm yes or no?

Another option for power

Establishing an offshore wind farm in Jersey's waters would provide another supply option for power, and guard against increasing energy costs, writes Dr Mark Leybourne

REGARDLESS of your views on climate change, the power system is changing. The future looks very different to the calm stability we have enjoyed in past decades. Historically, Europe has had access to abundant and cheap energy from fossil fuels and this has enabled our economies to grow.

The future of fossil fuels, however, is limited, often by legally binding net-zero commitments, and the world is quickly transitioning to renewable energy. To get to net zero, almost all of our energy needs to be supplied by low-carbon sources. Currently, our electricity is low carbon, but this is only 38% of our energy use. Most of the other 62% of our consumption will switch to electricity (eg electric vehicles and heating). We will need a lot more power.

The inherently variable nature of renewable power generation brings new challenges to how power is supplied and consumed – but this is a challenge that is well within humankind's ability to manage.

Power grids are expanding rapidly and innovations such as energy storage and demand-side management are being rolled out to help balance the dynamic system. This also means that less variable, low-carbon sources of power (eg hydro and nuclear) are becoming more sought-after and valuable.

Power generated in France is mostly from hydro and nuclear, but, even though the demand for electricity continues to increase rapidly, neither of these technologies is expected to grow. There are no more hydro sites to exploit in France and, even if there is a policy revival for nuclear power, new nuclear units would take decades to come online. Instead, France is opting for more wind and solar, including a target of 40GW of offshore wind by 2050. This is equivalent to 80 offshore wind farms the size of the Saint Briec wind farm and would be enough to supply 40 million households.

The past two years have seen huge variability in power prices across Europe. Contrary to what some commentators would like you to believe, this price volatility has been primarily driven by the huge fluctuations in the price of gas, not the growth of renewable energy.

As electricity markets continue to evolve, their volatility will persist. The long-term, hedged contract between Jersey Electricity and EDF has protected us from this volatility. Consequently, we currently only pay about 20p per unit of electricity, whereas France pays the equivalent of 22p (or 25p once the government price cap is removed this year) and the UK pays over 35p. Historically, our electricity has been 25-30% more expensive than France's, whereas now our electricity is 10-25% cheaper.

JE's agreement with EDF finishes at the end of 2026 and it is highly unlikely that EDF, or any other European supplier, will be generous in keeping our electricity bills below prevailing market rates and protected from volatility. Under the business-as-usual approach, our electricity will, inevitably, get more expensive compared to today.

JE buys a mixture of French hydro and nuclear, but, as demand increases across



■ Dr Mark Leybourne

Europe for these less variable forms of low-carbon generation, their costs will increase and JE will compete with other consumers of French power. Future contracts with French suppliers will comprise a mixture of generation sources and could even include fossil fuels – this would raise the carbon intensity of our power and prevent the Island from achieving its legal obligation of net-zero carbon.

One of the drivers for allowing a private consortium to build a wind farm in Jersey's waters is to provide JE with more supply options. Currently, there is only one option, and that's to buy power from France – Jersey is dependent on France.

Over the next 25 years, as we decarbonise and electrify our energy use, we will need to buy two to three times more electricity than we currently consume. To meet that demand, we could construct more interconnectors to France and become even more dependent on that one option, deepening our long-term exposure to imported inflation and volatility from continental Europe. A wind farm provides the Island with an alternative supply, and I'm sure readers would agree that having two options is better than one.

A wind farm operator would look to enter into a power purchase agreement with JE for a small portion of the output. This would set a fixed price for up to 20 years and provide JE with price certainty for at least a portion of the power required. To be clear, JE does not have to buy power from a wind farm. If the wind farm operator and JE cannot agree on a price, then power from the wind farm would be sold to Europe or the UK, as there are many buyers that require large volumes of decarbonised electricity.

It is also important to state that Jersey would not subsidise or underwrite the wind farm's output. Subsidy-free offshore wind is now commonplace across Europe – the Dutch HKZ offshore wind farm is a good recent example of this.

Jersey's future, decarbonised, electricity system will ultimately need to become more sophisticated. It will integrate different forms of supply, such as wind, solar and imported power (and maybe also tidal, one day), and manage them to meet a demand which is evolving from a decades-long stable daily demand profile to new consumer behaviours where homes,

cars and individual usage is more dynamic and yet to fully emerge.

The system will also include energy storage using a combination of standalone battery storage and even the batteries in electric vehicles connected to the grid. Jersey is not unique – this evolution is already happening across the world, with good examples at an island scale (Orkney) and at country scale (Denmark).

A further evolution could even see Jersey become an electricity trading hub. We have always been a trading island and that history has ranged from cod to finance. Our location, between two large and dynamic electricity markets, means we are very well placed to manage electricity trades between the UK and France/Europe.

It is feasible to construct subsea cables from the UK to France, via Jersey, and a wind farm; the Kriegers Flak project between Denmark and Germany is a good case study of this approach.

The Isle of Man is considering a similar arrangement between the UK and Ireland, and even artificial "energy islands" are being planned in the North Sea. In our region, there is a clear demand as European-grid plans show that the electrical transmission (interconnector) capacity between the UK and France needs to more than double by 2030. A France-UK link via Jersey, with a trading entity based in the Island, could potentially bring in huge tax revenues and lucrative benefits.

Jersey's electricity supply over past decades has been quite straightforward and has served the Island well compared to our neighbours. Although we cannot predict the future, it is quite clear that tomorrow's energy supply and consumption will look nothing like yesterday's.

With the current approach, our electricity prices will continue to increase in line with European prices and a new power supply contract is unlikely to protect us from future price variability. The question is, therefore, if we do not consider the option of an offshore wind farm, what is the alternative that will protect consumers from ever volatile and increasing energy costs?

● The JEP's focus on the wind farm debate continues in Monday's edition.

■ Dr Mark Leybourne is an Islander

What about tidal power?

There continues to be suggestions that Jersey should consider tidal energy as a local source of power generation, rather than offshore wind. We are all well aware of the dramatic tides around the Island, which are some of the world's largest, but the reality of extracting energy from those water movements is complicated.

While it is technically feasible, the costs are currently prohibitive. In the UK, tidal power is around three times more expensive than offshore wind power. The economics could change in future decades as the technology matures from research to commercial scale, so Jersey could revisit this option.

Tidal power would not be without its technical complexities for the grid, however, as the power generated from the tides fluctuates from maximum to zero four times per day.

Our government has already investigated this option extensively, through three separate studies, and reached the conclusion that now is not the right time to develop tidal energy.

who has worked in the offshore wind industry for the past 16 years. After completing an engineering doctorate in offshore renewable energy, he worked as a technical consultant, advising both the public and private sector on the development of wave, tidal and offshore wind. In 2020, Mark established and led the World Bank's global offshore wind programme, which saw him work with 26 governments, from Brazil to the Philippines. He has just moved back to the Island from Washington DC and established Dyna Energy as a locally headquartered offshore wind project developer, which is forming a consortium to compete for the rights to develop a wind farm in Jersey's waters. By leading the development locally, he intends to maximise the local economic and societal benefits, and ensure that value is retained in the Island.

Don't miss day two on Monday: The economic case and a flawed consultation process?



■ Dr John Constable

The risks of offshore wind

MEDIA coverage might have led you to think that wind power and offshore wind in particular is an established, universally accepted and low-risk technology. However, nothing could be further from the truth.

After decades of subsidy, amounting to tens of billions of pounds in the UK alone, it is still extremely expensive and dependent on distorted markets and income support. Cautious analysts are aware of this and regard investment in wind not as a technology venture but a high-stakes gamble on continued policy support. Without the subsidies and market coercions it makes no sense.

In my view this is correct. The physics of wind tells us that this energy flow is of such poor thermodynamic quality that it can never be cheap in comparison with nuclear or fossil fuels. And this is true even when the impacts of climate change arising from fossil fuels are taken into account.

This theoretical perspective is confirmed by decades of evidence reporting that wind power infrastructure is expensive to build, operate and to maintain, and that the uncontrollable nature of the output requires otherwise needless grid expansion and dramatically increases system-management costs.

Consequently, the costs to consumers are extremely high and fail all rational cost-benefit tests as a climate policy. The cure is worse than the disease. Therefore, wind has no long-term future, and policies supporting it are an error that will be corrected sooner or later.

For large economies, such as the UK or Germany, the effects of the mistaken wind-power adventure will be serious, implying a loss of human welfare and geopolitical disadvantage. This may even be historically significant, ceding global pre-eminence to economies such as that of China which have dressed the window

There is plenty of economic evidence to show that wind power should be avoided by small jurisdictions such as Jersey, writes Dr John Constable

with renewables but have wisely planned to generate wealth from fossil fuels in the short and medium term as a prelude to future use of nuclear for both electricity and high-temperature industrial heat.

Bad though this is, the major European economies should be able to recover from their mistakes, since they have large power-generation portfolios that are still broadly based. Far too many of our eggs are in one basket – wind – but not all of them are. The capital write-downs as wind is abandoned will be terrible but bearable.

However, smaller economies and island systems, such as that of Jersey, might easily be more severely affected if they invest in or come to rely on wind generation and then have to retreat in distress. The costs will be politically crippling, and recovery near impossible without external assistance, implying a loss of independence.

Wind power is a game for large, rich countries that can afford high risks and expensive gestures. Jersey is probably not such a country, and, in my view, should keep its distance both financially and physically from any wind project proposed in its waters.

It seems to me that the risk (hazard x probability) of investment or entanglement in the commercial operations of a wind farm that is very likely to be a short-lived and uneconomic project are simply

too great for the Island. But that is for you to decide.

I realise that this description of the situation will be surprising to many. The wind industry and its proponents insist that their costs are falling, and that this technology is an opportunity not to be missed. They point to the UK's vast commitments to offshore wind, for example.

Indeed, only a few years ago, Westminster tube station was covered, almost wall to wall, with posters claiming that wind's costs had fallen by about 75% in a few years, with extremely low bids being made in auctions for subsidy contracts.

I simply didn't believe those extraordinary claims about cost reduction, partly because of theoretical arguments derived from the physics of wind, and partly because of the history of heavy engineering, which is quite different from that of electronics, and which has never exhibited such a sharp decline in costs. But empirical evidence relating to capital and to operational costs was needed to provide a conclusive evaluation of the wind industry claims.

Fortunately, audited financial statements for wind farm companies are available in the public domain, and in work published by the UK charity that I direct, Renewable Energy Foundation, the economist Professor Gordon Hughes, of the University of Edinburgh, presented an econometric analysis of the trends in capex (capital expenditure) and opex (oper-

ational expenditure) evident over time for several hundred wind farms. This work is freely downloadable from the REF website (ref.org.uk).

What Prof Hughes found was that capex had not fallen very significantly, and that opex, the cost of running and maintaining wind turbines at sea, not only rose significantly as the wind turbines aged, but that newer wind farms seemed to have higher operational costs than older ones, perhaps because they were much larger and in deeper water.

These considerations around opex are of particular importance since they suggest that the economic lifetime of the schemes would be much shorter than expected, with annual income failing to cover annual costs within a relatively short period of time.

The medium-term prospects for the UK's offshore wind fleet do not seem likely to be good without further government subsidies, which may not be forthcoming.

When considering a wind proposal for Jersey, this actual real-world experience should be your first port of call. The negative implications of involvement in such projects, even at one remove through a power offtake agreement, for example, are of such significance that sentiment and wishful thinking must be avoided.

A cool-headed appraisal of the realities of wind power and the contrasting merits of the alternatives, such as renewing the supply contract with France and refreshing the existing conventional generation fleet, is essential. In my view, the conclusion of that review would not be positive for wind power. But, again, that is for you to decide.

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■ Dr John Constable is a UK energy analyst and director of the charity Renewable Energy Foundation (ref.org.uk).