A Report by the Council of Ministers on the Strategy for Offshore Energy Production

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1. Introduction

To The Hon. C. Christian MLC, President of Tynwald and the Honourable Council and Keys in Tynwald assembled.

1. As outlined in the “Agenda for Change” approved by Tynwald in January 2013, the Environment and Infrastructure Committee is leading work to deliver Government’s strategic priorities in areas, including:

- Use our natural resources to work towards building a post carbon fuelled Island
- Identify sustainable ways to reduce the financial and environmental cost of energy in the medium to long term
- Encourage sustainable economic activity in harmony with our natural resources.

2. Tynwald approved in May 2013 that Government should explore opportunities to develop potential offshore energy production in Isle of Man territorial seas for export to neighbouring jurisdictions.

3. The Environment and Infrastructure Committee is now reporting on Corporate Objective OE 8.1 “Continue to explore options for using our natural resources to provide energy, and report by 31 March 2014.”

Hon P A Gawne MHK
Chair – Environment and Infrastructure Committee
2. Background

Energy is vital to a modern economy, being needed for heating and lighting of homes, travel and for powering businesses and economic development. Energy policy across the world is evolving in response to rising fossil fuel prices, issues over security of supply and the need to reduce carbon emissions to combat climate change.

The UK’s traditional indigenous energy sources are in decline. The UK imported 43% of the coal, gas and oil that it used in 2012 and, by around 2020, the UK could be dependent on imported energy for 75% of its total primary energy needs (Figure 1). European reserves of oil and gas are also in decline with energy production satisfying less than half of the current European needs.

Figure 1, UK import dependency 1970 – 2012

Source: UK Department of Energy & Climate Change

The Isle of Man has ownership of its territorial seas, and the seabed beneath those seas, up to the 12 nautical mile limit or the median line where the distance between the UK and Isle of Man baselines is less than 24 nautical miles. As such the Island has responsibility for marine spatial planning and zoning over approximately 4,000 km² of the Irish Sea which is greater than 87% of the Island’s territory. Within this area, the Isle of Man Government has an opportunity to produce offshore energy for export from wind, marine renewables and hydrocarbon resources.

The Town and Country Planning Act 1999 (Extension to the Territorial Seas) Regulations 2013 was approved by Tynwald in December 2013. This provides the necessary primary legislation for future offshore installations on the seabed including wind, marine renewables and hydrocarbon developments. Further legislation will need to be approved by Tynwald in due course such as the Marine Strategic Plan (MSP) and a Marine Development Order (MDO), which will provide the necessary planning policy and procedure for offshore planning applications to be determined.
The Department of Economic Development is working closely with the Department of Infrastructure and the Department of Environment, Food and Agriculture to explore opportunities for offshore energy production.

3. Strategy

3.1 Renewable Energy

Future European dependency on imported energy is considered a potential risk for security of supply, particularly in the context of rising global demand and finite fossil fuel reserves. Europe has therefore set energy objectives to ensure sustainable, competitive and secure supplies, by reducing greenhouse gas emissions by 20%, increasing the share of renewable energy to 20% and improving energy efficiency by 20%, all by 2020. These are the first steps in the transition to a high-efficiency, low-carbon energy system.

In response to the 2009/28/EC EU Directive on renewable energy, the UK Government has agreed an ambitious target of meeting 15% of the UK’s energy consumption from renewable sources by 2020 which requires about 30% of UK electricity to come from renewables by this date. With the significant recent investment particularly from wind power, the UK has increased its energy from renewable sources to 4.1% (11.3% electricity from renewable sources) in 2012. However, the UK still requires significant further investment in renewable energy if it is to meet the European target.

The UK’s Energy Act received Royal Assent in December 2013 and puts in place measures to attract the £110bn of investment that it is estimated is needed to replace current generating capacity. This includes provisions for Contracts for Difference (CfDs) to provide stable and predictable revenue for generators.

Offshore wind generation is likely to play an important role in meeting the UK Government’s renewable electricity targets. In the 2011 UK Renewable Roadmap, Department of Energy and Climate Change (DECC), highlighted offshore wind as one of the technologies with the greatest potential to help meet the 2020 targets in a cost effective and sustainable way and set out a central case for deployment of up to 18 Gigawatt (GW) of generating capacity by 2020 and 40 GW of generating capacity by 2030. However, in order to realise this increasing rate of deployment DECC has emphasised that a substantial reduction in costs would be required.

The EU Renewable Energy Directive allows joint projects whereby a new offshore or onshore renewable energy project in a third country (including Crown Dependencies), can be co-financed by a Member State if the energy produced in the third country is imported into the EU. The UK government continues to assess the feasibility and value of large-scale renewable energy trading projects as a complement to UK domestic production, having agreed that, in principle, CfDs could be used to support generation that is located outside of the UK.
The shallow water depth in the Isle of Man territorial seas are served with significant wind resource in close proximity to the UK which allows potential sites for cost effective offshore wind farms supplying renewable energy to the UK.

A significant opportunity therefore exists for the Isle of Man to lease its seabed for the generation of renewable energy for export to assist the UK to meet its national and European renewable energy targets. Leases of the Isle of Man seabed for large offshore wind projects will last 25 years with an option to extend to 50 years and provide revenue to Isle of Man Government worth around £5 million per year.

Whilst emerging technologies, such as tidal and wave generation, may provide limited income generation in the short-term their long term potential is significant.

Employment and income opportunities will arise during the development and construction phases of any project. For example vessels for environmental surveys will be required and airport services will be required in respect of aerial surveys. Local fishing vessels could provide guard vessel duties for projects under construction. Although the Island does not have a harbour of sufficient size to deliver the significant elements of the construction of offshore wind projects ancillary services such as crew transfer could be provided during the construction period.

Most significantly offshore installations will require onshore facilities to meet the operation and maintenance requirements and the Isle of Man is well positioned to provide this service. It is forecasted that at least 60 new jobs would be created on any offshore wind farm project site after the construction phase. These jobs will include engineers and technicians who work on wind turbines, crew of vessels who ferry technicians to and from the wind farm site on a daily basis and also office and warehouse staff at the base in the harbour. Jobs will be required for the lifespan of offshore wind turbines with average annual salaries greater than £40,000 creating significant income tax benefit for the Government.

The Isle of Man could also provide a location for a substation to act as an interconnector hub for renewable energy projects in the Isle of Man and neighbouring jurisdictions. The substation would connect to the UK using high voltage cables thus reducing interconnector cabling costs and the number of grid connections in the UK. The construction of an interconnector could also provide trading opportunities and provide the Isle of Man with further income in its own right.

Potentially several GWs of offshore wind and several hundred Megawatt (MW) of tidal power could be generated in the Isle of Man. At this time we are proposing to progress plans to develop up to a maximum of 2 GW from offshore wind and 200 MW from marine renewable power for export to the UK. The Isle of Man Government proposes to have in place an appropriate offshore planning policy and procedure by which such applications will be determined. Any planning applications offshore for installations on the seabed including wind, marine renewables and hydrocarbon developments will require all appropriate consents and planning approval.

At this time due to the cost of installation all the renewable energy produced would be exported to the UK. However, any agreement to lease the seabed would include a future
option for the Isle of Man to purchase a proportion of the renewable energy for the Island’s own use e.g. this option would be considered when the existing CCGT plant is due to be replaced.

Expression of Interest notice was issued in January 2014 seeking potential developers for offshore wind and tidal projects in the Isle of Man territorial seas. Offshore wind and tidal projects will only progress if UK renewable incentives are available for developments in the Isle of Man territorial seas for export to the UK. Invitations to tender will be issued once we have confirmation that projects in the Isle of Man territorial seas will be eligible for renewable incentives from the UK and potentially allow developer(s) to be appointed during 2014.

All proposed projects would be dependent on receiving planning approval in the usual manner including any necessary EIA submissions.

3.2 Gas

Although gas is not a renewable source of energy it is however, a cleaner source of energy with less carbon emissions than other sources of fossil fuel.

Gas forms an integral part of the UK’s energy mix and contributed to approximately 28% of electricity generated in 2012. UK gas production was 14% lower in 2012 compared to 2011 which is 64% less than peak production in 2000. UK gas consumption was 6% lower in 2012 compared to 2011 due to gas prices increasing by greater than 11% during the previous 12 months. The UK Government expects that gas will continue to play a major role in the electricity mix over the coming decades, alongside low-carbon technologies as a diverse generation mix balances risks and uncertainties of different technology options, including uncertainty on future gas prices. However, there is a need to ensure the security of future supplies of affordable gas.

During the 1990’s the Isle of Man Government issued several prospecting licences to petroleum companies. All of these licences have lapsed however, with the increased fossil fuel prices and improvements in technology it is possible that any gas deposits in Isle of Man territorial seas may now be economically viable to extract.

Data collected from the previous prospecting studies has been re-analysed and would indicate that a gas deposit may be present in Block 112/25. At this time the Department of Economic Development is focussing its efforts on promoting Block 112/25 and the surrounding prospect which is the most likely economically viable hydrocarbon reserve for extraction in the Isle of Man territorial seas. Hydrocarbons from this prospect could be extracted using a well-established process used in the UK and worldwide to extract conventional gas. Initial studies indicate that the gas reserve is greater than 100 billion cubic feet of conventional gas with a current value of around £400 million (based on £4/mmbtu). The Department of Economic Development has ownership of all hydrocarbons in the Isle of Man territorial seas and would levy a royalty for the extraction of gas. Based on a hydrocarbon tax similar to the UK this could generate around £100 million over 20 years in revenue for the Isle of Man Government. Due to the likely scale of the hydrocarbon deposits
it is envisaged that the hydrocarbons will be exported directly to the UK although if cost effective the option will be considered of using the gas on the Island.

Furthermore, the offshore gas exploration and extraction could generate jobs on the Island in the installation, operation and maintenance of facilities. At this time it is unclear the number of new jobs that would be created to support this sector.

The Department of Economic Development hopes to encourage the energy sector to undertake 3D seismic studies in the Isle of Man territorial seas including Block 112/25 and the surrounding prospect which would greatly facilitate future prospecting studies. Furthermore, the Department of Economic Development is exploring the issue of a Prior Information Notice seeking interested developers for a future hydrocarbon licensing round in the Isle of Man territorial seas. At this time we are only intending to issue prospecting licenses for hydrocarbon extraction from conventional oil and gas deposits.

3.3 **Unconventional Gas**

Shale gas is extracted using a process known as “fracking” where hydraulic fracturing of shale rocks with water, sand and chemicals injected at high pressure create small fractures releasing trapped gas. This technology has revolutionised the energy industry in the USA where in 2011 around 40% of the total 23.0 trillion cubic feet natural gas was produced from shale gas. Exploration licenses have been issued in the UK to investigate the feasibility of production from shale deposits.

Coal bed methane is adsorbed into the solid matrix of coal and can be extracted from coal seams.

Coal gasification is a well-established technology and recently trials have commenced including in Australia to produce clean fuel from onshore coal deposits. The technology involves production of a Syngas (mixture of hydrogen and methane) underground which can be extracted to the surface using directional drilling. Several licences have been issued for offshore coal gasification in the UK and initial trial projects are expected to commence in 2014.

Unconventional gas extraction has not been performed offshore due to higher costs. Although not currently economically viable to extract offshore shale gas it should be possible in the future when gas prices increase and extraction costs decrease. Therefore, the Department of Economic Development will continue to closely monitor progress.

At this time it is not proposed to progress unconventional gas extraction in the Isle of Man from “fracking” shale deposits, coal bed methane and coal gasification until the regulatory and environmental issues are suitably resolved in the UK.
4. Interaction with other activities and the marine environment

At this time, there is no procedure in place for the determination of planning applications for a Marine Energy Project.

Work is ongoing by the Department of Infrastructure concerning the preliminary steps regarding the preparation of the MSP. The MSP would set out in writing the DoI’s general policies in respect of offshore planning and any MDO would set out the procedures for how such applications are to be dealt with and determined. The following matters may need to be considered in determining such policy, namely any interference with sea lanes, fisheries, aviation and the natural environment. It is accepted that it may not be possible to permit renewable energy developments that have a detrimental impact on the Island’s air and sea links and that the MSP will be drafted to ensure that appropriate consideration is paid to such issues.

The Manx Marine Environmental Assessment provides some baseline information which can be used as a starting point to inform work to assess the impacts of specific proposals on existing sea users (shipping, commercial fisheries, other energy infrastructure), other socio-economically important activities (particularly aviation) and the natural and cultural heritage of the Island.

In advance of legislation being in place to require an Environmental Impact Assessment (EIA), in keeping with good international practice, and to assist with compliance with relevant international conventions to which the Island is party, developers applying for planning approval for an offshore energy project will be encouraged to carry out a targeted and proportionate EIA and deliver an Environmental Statement (ES) with their application. Pending legislation being in place, it is the Government’s intention to publish some interim guidance on EIA’s to assist developers. The Government will actively liaise with developers and stakeholders during the EIA scoping process to ensure that EIA is targeted and proportionate.

5. Conclusion

The Isle of Man has ownership of its territorial seas, and the seabed beneath those seas, up to the 12 nautical mile limit or the median line where the distance between the UK and Isle of Man baselines is less than 24 nautical miles. As such the Island has responsibility for marine spatial planning and zoning over approximately 4,000 km² of the Irish Sea which is greater than 87% of the Island’s territory. Within this area, the Isle of Man Government has an opportunity to produce offshore energy for export from wind, marine renewables and hydrocarbon resources.

We propose to progress development subject to such development receiving the appropriate consents and planning approval up to a maximum of 2 GW from offshore wind and 200 MW from marine renewable power for export to the UK. Due to the cost of installation all the renewable energy produced would be exported to the UK in the short to medium term.
These projects will therefore be dependent on offshore wind and marine renewables being eligible for UK renewable incentives and also receiving Isle of Man planning approval.

With increased fossil fuel prices and improvements in technology it may now be possible to commercially extract gas deposits in Isle of Man territorial seas. We intend to hold a licensing round and issue hydrocarbon prospecting licenses for potential extraction of oil and gas deposits using well-established technology.

However, at this time it is not proposed to progress unconventional gas extraction in the Isle of Man from “fracking” shale deposits, coal bed methane and coal gasification until economically viable and the regulatory and environmental issues are suitably resolved in the UK.

6. Recommendation

Council of Ministers recommends that:

i. Tynwald supports the development of offshore wind, marine renewables and hydrocarbon energy sources in the Isle of Man’s territorial sea in order to produce energy, subject to projects receiving appropriate consents and planning approval. It is expected that electricity produced would initially be exported to neighbouring jurisdictions, though may become an alternative local supply in the future.

Note

This strategy may be subject to review pending the preparation and subsequent approval of the MSP, any MDO and any other planning legislation made under the Town and Country Planning Act 1999 (Extension to the Territorial Seas) (No. 2) Regulations 2013. It is hoped that the MDO will be approved by Tynwald in May 2014.