

16th November 2020

Dear Sir/Madam

QUICK QUOTE REQUEST – ISLE OF MAN 2035 CARBON NEUTRAL ENERGY STRATEGIC REVIEW

The Isle of Man Government is seeking to engage a suitably qualified consultancy partner to work with The Climate Change Transformation team and wider Government to:

- (1) Provide a set of options and a recommendation for the future of the island's transmission network, with consideration of sustainability principles and both short-term and long-term costs to government and consumers.
- (2) Provide a set of options and a recommendation for the best (mix of) renewable or carbon neutral technologies to meet the island's demand, in line with the requirements of the Isle of Man Government's Climate Change Action Plan Ref 3.1.
- (3) Produce a pragmatic, evidenced and realistic plan to implement both recommendations, which addresses both technical and financial aspects.

BACKGROUND

1. The Isle of Man is a Crown Dependency situated between the United Kingdom and Ireland with a population of approximately 85,000 residents. The Isle of Man does not form part of the United Kingdom.
2. The current peak demand for electricity on island is 85 MWe.
3. Island demand has been decreasing over the last 10 years as more efficient technology and products become available.
4. The recent independent report into the actions necessary to achieve Net Zero carbon emissions by 2050 identified that this demand is likely to increase with the advent of renewable heating (expected to be mainly derived from Ground Source or Air Source Heat Pumps) as well as an increase in take-up of electric vehicles.
5. The supply, transmission and distribution of the island's electricity is currently the responsibility of Manx Utilities – a Statutory Board of the Isle of Man Government. The current infrastructure facilitates the supply of 350 GWh of electricity to customers on the Isle of Man and provides up to 200 GWh of electricity to the GB wholesale electricity market.
6. Around 85% of local electricity is generated in a Combined Cycle Gas Turbine (CCGT) power station which has a capacity of approximately 80 MW. A 67 MW licence-exempt distribution interconnector cable to the GB electricity wholesale market is used to import and export electricity to and from the Isle of Man. Electricity is also generated from a third-party owned and operated Energy from Waste plant, a 1 MW hydro-electric power station and legacy diesel generators.

7. The main (CCGT) power station was commissioned approximately 20 years ago and has an initial design life through until the early 2030s. The IMPACT: The Independent Climate Report by Professor James Curran has suggested that this CCGT would need to start decommissioning or at least scaling back by 2030 to achieve Net Zero by 2050.
8. The Isle of Man Government, through its Climate Change Transformation Board, is committed to reducing the Isle of Man's greenhouse gas emissions and in January 2020 issued an action plan¹ setting out its proposals towards net zero emissions. Electricity generation is a key generator of emissions and the action plan recognised the need to transition away from fossil-fuelled electricity generation.
9. The action plan identifies that a strategic generating plan is required to set out a roadmap as to how the Isle of Man will achieve securing 75% of the Island's electricity from renewable (or carbon neutral) sources by 2035. The Government's Climate Change Transformation Board is seeking to secure advisory services to assist to develop a plan to manage the transmission from non-renewable electricity generation to 75% renewable (or carbon neutral) generation over the next 15 years.
10. The plan will need to be cognisant of the expectation to achieve 100% renewable generation (or carbon neutral) by 2050 and ensure compatibility with that aim.
11. There has been no agreement on the future of the grid in the Isle of Man.
12. The current infrastructure does not necessarily have to remain in place to support the island's generation long-term so should not inform the decision-making for the strategic review.
13. Four mechanisms have been proposed for grid transmission:
 - a. Transition to off-grid generation provided by renewables/Carbon neutral sources.
 - b. Upgrade the current island grid system to facilitate the increase in renewable energy sources linking up to the grid.
 - c. Transition to linked micro-grid systems that would enable a diverse mix of renewables and carbon-neutral technologies.
 - d. Upgrade the current island grid to include greater interconnection to neighbouring islands and countries with minimal (or no) on island generation.

It is possible that a combination of these options may be the most viable solution for the island, and this should also be considered in the study.

There is no preference for the grid transmission or the source of the 75% renewable (or carbon neutral) technology. However, the island has committed to following the UNESCO sustainability principles. Therefore, the final outcome must be the one that is the best option for the island in terms of environmental sustainability and socioeconomics. Finance options for any new infrastructure should also be considered within the study.

(A) SCOPE

Overall aims

There are 4 key aims for the successful applicant:

- (1) Provide a range of options and a recommendation for the future of the island's transmission network based on the UNESCO sustainability principles and both short-term and long-term costs to government and consumers.

¹ See <https://www.gov.im/media/1368096/gd20190101-iomg-action-plan.pdf>.

- (2) Provide a range of options and a recommendation for the best solution (or mix of solutions) to meet the island's demand and 2035 carbon neutral target.
- (3) Produce a pragmatic, evidence-based, and realistic plan to implement both recommendations.
- (4) Ensure a reliable and resilient energy supply which enables a thriving economy and community.

The Council of Ministers will decide what option is best for the Island, therefore a Cost-benefit analysis study for each of these Aims would be required.

The Isle of Man's future energy demands are likely to increase as a result of the change in space heating and transport requirements as well as population increase. However, the level of increase is still unknown. Therefore, any solution to the Island's generation needs must be flexible enough to withstand any increased demand. This must be considered in the study.

Trilemma considerations

Electricity generation is widely considered to encompass the three key elements of security of supply, affordability, and environmental sustainability. The climate action plan seeks to address the latter of these, but the advisory services should also recognise the economic importance to the Isle of Man that a transition to more sustainable generation does not reduce the reliability of supply or significantly increase costs for customers whilst ensuring the safety of employees and the public is not compromised.

Consideration of local generation and importation

Currently the Isle of Man seeks to secure electricity from local generation. Many other island communities adopt a similar approach but others, such as the Channel Islands, invest in interconnection to larger transmission/distribution networks as opposed to local generation. A perceived advantage of local generation is the independence achieved through the decision to retain control over generation and minimise the risk of being dependent on other suppliers. The advisory services should consider what proportion of the Isle of Man's electricity demand should be met from local generation.

Consideration of centralised and de-centralised local generation

Whilst the Isle of Man has a number of generating sources, the advisory services should consider whether the majority of on-island electricity generation should be sourced from a small number of large sites or from many small sites. Regard should also be given to factors influencing the ownership of generating assets.

Any implications for the Isle of Man's electricity transmission network should also be considered.

Consideration of target generating mix

To secure a sustainable electricity supply, the Isle of Man will need to have an appropriate future mix of generation available to it. The proportions of peak and annual demand arising from each form of generation will be important for planning purposes. The advisory services should set out projections for the future target split by type of generation.

The transition from the current generation mix to a future state should also be shown including demand growth as electrification progresses.

The impact of the changing generation mix on emissions and other climate factors should also be described.

Private and community generation

Private generation can provide a source of electricity supply in a distributed generation regime. Private generation could include small-scale domestic and commercial providers but could also cover community schemes and schemes solely for private commercial gain. Community schemes are those considered to provide wider benefits for a local community alongside the supply of electricity.

The advisory services need to consider the role that these options are likely to play within the Isle of Man.

Network balancing and other implications

The balancing of electricity supply and demand in real time to ensure frequency and voltage conformity is critical to the security of supply for the Isle of Man. Renewable generation is often considered to be less controllable than traditional sources of generation and therefore increased renewable generation will increase the likelihood that available renewable generation will be higher or lower than instantaneous demand.

The advisory services need to consider how the Isle of Man electricity network remains balanced when determining the future mix of generation, and under a range of scenarios (for example, the current network is usually balanced through the interconnector, but operating procedures must also cover the balancing of the network when the interconnector is not available).

Balancing considerations should also address interactions with multiple third-party generators if this is proposed as part of the generating plan.

Assessment of storage options

Storage may be necessary alongside renewable electricity generation. Storage can provide support for short-term frequency and voltage management but also can provide network balancing over longer periods of time. Consideration should be given to the role of storage, including projections for required storage capacity (if any).

The role of storage in avoiding, or recovering from, power outages should be considered as part of these advisory services.

Any proposals for local storage should identify how such storage may be delivered. This should include whether it is preferable for it to be centralised in a single location or distributed throughout the Isle of Man.

Financial considerations

Indicative short-term and long-term cost estimates for delivering the 75% of renewables by 2035 should be provided as part of the advisory services and these should show the expected levels of investment over time.

The overall impact (favourable or adverse) on the cost of providing electricity to the local distribution network should also be assessed against the current basis for generation and include the likely impact on customer pricing. This assessment should include consideration of future capital, operating and financing costs (not historic costs). This impact should also consider the impact on the contribution from export sales, which are currently used offset other local costs.

Comment should be made as to how this investment should be financed, such as through public, community, or private funding.

Possible impact of other external changes (horizon scanning)

The impact of any pending industry changes in the United Kingdom or Europe that might require changes to a generating strategy in the future should be identified as part of the advisory services. Whilst the objective is to achieve 75% of renewables by 2035, due regard should be given to periods beyond this date.

OUTPUT REQUIRED

The following output will be required:

- a. A report, which should also contain an executive summary section which can be distributed separately from the detailed report, and cover conclusions from each area of the scope above and include:
 - i. Consideration of Isle of Man demand projections over the next 15 years;
 - ii. Options considered for meeting demand projections over the next 15 years to achieve the target of 75% of the Isle of Man's electricity being from renewable (or carbon neutral) sources;
 - iii. A mechanism for adapting the transmission network to enable increased capacity if it is required (or a mechanism from transitioning from the grid to a decentralised model);
 - iv. Proposed future generation mix for the Isle of Man, setting out reasoned explanations for this recommendation;
 - v. Recommendations, including timescales, as to how the Isle of Man should achieve this transition. This should include demonstration as to how the generation mix and emissions change over the period;
 - vi. Recommendations as to how the Isle of Man electricity network should be balanced (if necessary) as increased renewable generation is adopted (or how this balancing can be done on micro-scale if the grid is no longer relevant);
 - vii. If not covered elsewhere, the report should make comment on the role of private and community generation, electricity storage requirements and the sufficiency of interconnection for the Isle of Man;
 - viii. Identification of key policy decisions that may be required by Government to support the plan. Examples may include (but not be limited to) whether generation should be local or via interconnector, and the ownership structures of generating plant.
- b. A cost/benefit analysis of the available options to include financial impacts for the Isle of Man Government and wider economic impacts with an ultimate recommendation
- c. A clear Executive Summary summarising the recommendations of the project in language suitable for a non-technical audience.
- d. A clear, strategic action plan to show how the recommendations can be delivered over the next 15 years and showing how this can be adapted to changing energy demands.
- e. Up to 5 presentations to the Climate Change Steering Group, the Climate Change Transformation Team, Council of Ministers and Tynwald Members.

- f. An interim draft report and presentation to the Climate Change Transformation Team working group detailing the emergent findings at the half-way point.

The Climate Change Transformation team will require full and unrestricted assignment of the copyright of the final report and all associated supporting data.

TIMESCALE

The target date for the production of the draft final report is **1st April 2021**.

(B) Evaluation Criteria

The Quick Quote Response will be evaluated by an approach that considers both price and quality. This approach is referred to as the "most economically advantageous tender". The weighting split used when evaluating Quick Quote Responses will be:

- Price **50%**
- Quality **50%*** (of which "Local Economic Factors" – requirement 11 below will comprise 10%)

(C1) Pricing

Tenderers shall insert the fixed sum that comprises their Quick Quote Price using the table below.

Please note: All prices quoted are to be exclusive of VAT.

Requirement	Total charge for provision of services	Number of Resources submitted
Energy Consultancy Services pertaining to the review as specified above	£	
Rate for additional work	£	

Offers shall remain valid for a period of 60 days from the closing date of the request.

The above price should include all costs of providing the services. No additional costs may be charged to The Climate Change Transformation Team for this project.

Unless the supplier indicates an alternative, payment for the full fixed price sum will be made upon completion of the project. The supplier will submit an invoice to the Climate Change Transformation Team for the full tendered sum only upon submission of the final report. Payment will then be made within 30 days of receipt of a correctly presented invoice.

Note: The Department does not bind itself to accept the lowest or any Quick Quote Response and reserves the right to accept part only of any one or more Quick Quote Response.

(C2) Quality

The quality element will be assessed through a series of delivery questions, some of which will be mandatory to provide the Services under this contract. The service delivery questions are detailed below with mandatory questions indicated.

Scoring

To ensure the evaluation of quality is applied consistently, requirements are marked using a scoring system of zero (0) to five (5).

Score	Criteria for awarding Score
0	Completely fails to meet required standard or does not provide a proposal.
1	Proposal significantly fails to meet the standards required, contains significant shortcomings and/or is inconsistent with other proposals.
2	Proposal falls short of achieving expected standard in a number of identifiable respects.
3	Proposal meets the required standard in most material respects but is lacking or inconsistent in others.
4	Proposal meets the required standard in all material respects.
5	Proposal meets the required standard in all material respects and exceeds some or all of the major requirements.

Minimum Score/Pass Fail

Several requirements have been identified that are fundamental to the delivery of the Service, these requirements are annotated "Minimum score applies". Only Quick Quote Responses that score a minimum of three (3) will be considered for contract award.

Several requirements have been identified as Pass/Fail and are deemed to be a core requirement. Tenderers responding 'No' to any of these questions will not be considered for contract award.

To be considered for this procurement exercise, individuals, consultants, and organisations must:

Service Requirements		
Req. No.	Minimum Score or Pass/Fail Question	Scope
1.0	Minimum score	Be able to demonstrate previous experience of various grid options e.g., Macro-grid, decentralised grid, off-grid developments, interconnectivity.
2.0	Minimum score	Be able to demonstrate previous experience of energy generation and distribution in island jurisdictions.

3.0	Minimum score	Be able to demonstrate previous experience of working with numerous different technologies including renewables AND carbon neutral solutions.

4.0	Minimum score	Be able to demonstrate an understanding of the various limitations, political and socio-economic issues with each proposed technology and grid option.

5.0	Minimum score	Be able to demonstrate knowledge of how Net Zero emissions can be achieved across the full life cycle of the project including manufacturing, shipping, construction, operation, maintenance, and plant life extension (if relevant).

6.0	Minimum score	Be able to demonstrate knowledge of how the proposed options could be assessed to comply with the UNESCO sustainability principles throughout the life cycle of the project.

7.0	Minimum score	Demonstrate understanding of storage and stabilisation requirements for each type of technology and how this would relate to the different electrical transmission options.

8.0	Minimum score	Demonstrate an understanding of various funding solutions available for each proposed option including private funding, government funding, incentives, and community funding.

9.0	Minimum Score	Be able to demonstrate experience of Environmental Impact Assessments for various technology types and grid options.

10.0	Pass/fail	Demonstrate no real or perceived conflicts of interests with any organisation that may be interested in the implications of the study. If conflicts of interest are identified, be able to demonstrate effective measures to mitigate against these.
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Local Economic Factors		
11.0		In no more than 400 words, please identify what benefits your company would bring to the Isle of Man economy as a direct result of undertaking this contract. This may include economic contribution such as personnel, income tax, travel, bed nights or social contribution such as training and development to the wider community.

Each question will be score evaluated.

The contract documents between the Department and contractor shall include the Quick Quote, the Quick Quote Response, a Department purchase order and shall also include and be subject to the [Isle of Man Government Standard Terms and Conditions for the Purchase of Goods and/or Services](#)^[9] or such other documentation as may be agreed between the parties.

Quick Quote Response

Bidder: _____
(Please insert your full company name)

I/We, having fully acquainted myself/ourselves with all the documents, appendices, instructions, and conditions referred to herein, do hereby offer to supply the services requested in accordance with the submitted Rates set out in the Pricing Schedule.

Signed: _____
Name in block
letters: _____
Position: _____
For and on behalf
of: _____
Date: _____

In responding to this formal Quick Quote competition request, I give the **Cabinet Office** permission to share my information with the Isle of Man Government Treasury Income Tax Division for the purpose of identifying any potential tax liabilities.

Signed: _____
Name in block
letters: _____
Position: _____
Date: _____

Your response must be submitted on this form and returned by **noon (12.00hrs) on Friday 4th December 2020** through the online Procurement Portal.

Yours faithfully,

Jonathan Platten
Senior Research & Development Officer