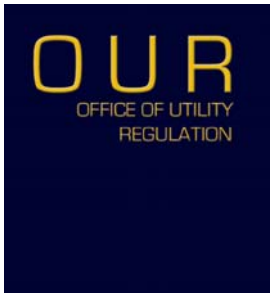

Office of Utility Regulation

Energy Policy Report:

OUR Response to Energy Policy Steering Group

Document No: OUR 08/03 **18th January 2008**

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OUR Response to Energy Policy Report

Executive Summary

- *The OUR welcomes the Report and is willing to assist in the actions identified in the Report and provide such other assistance as may be helpful.*

- *The OUR welcomes the inclusive approach taken by the document as we believe this to be appropriate given the early stage of policy development. Changes in behaviour and decisions which will require alternative approaches to energy use are however inevitable in the near term. Consideration of such options will need to take an appropriate balance between economic and environmental objectives.*

- *An Energy Policy that focuses on less than 9% of the Island's emission sources has clear limitations however. There is a risk of exponential increases in the cost to Guernsey if CO2 savings continue to be sought from a narrow base of the economy that has already delivered material reductions. Greater savings are realisable elsewhere at lower cost with significantly less risk of failure.*

- *Guernsey should identify targets that take more account of Guernsey specific factors. Targets adopted from other jurisdictions with a very different mix of contributors to greenhouse gases could lead to ineffective use of resources.*

- *The timing of any decision to introduce macro renewable generated electricity could have a material effect on the cost to the Island given the risk of duplicating generation capacity.*

OUR Comments on Issues addressed by the Energy Policy Report

The OUR welcomes the inclusive approach taken by the document as we believe this to be appropriate given the early stage of policy development. Changes in behaviour and decisions which will require alternative approaches to energy use are however inevitable in the near term. Consideration of such options will need to take an appropriate balance between economic and environmental objectives.

The Stern Review cited in the early part of the Energy Policy Report, proposes international co-operation and the forging of links that enable economies to develop a proportionate response to the undoubted threats highlighted in that report. Some commentators have sought to portray the Stern Review as arguing that no cost is too great and no savings too low for any economy irrespective of its resources.

The OUR suggests that for Guernsey, with limited resources and a small economy, an energy policy is sought that commits the Island's resources in a manner that maximises the carbon savings relative to the cost entailed, and there is a limit to the cost society or the economy can bear in pursuing those savings. A policy that prioritises options will help focus scarce resources on key initiatives that have greater prospects of success. Such an approach will also avoid the risks posed by any 'scattergun' approach.

The concept of an 'Investment Ladder' is useful in setting out the options available. The implications of demands on resources and levels of risk can be evaluated through a simple framework, depending on the extent of ambition to own or invest in the entire value chain of any climate change initiative. Businesses employ such approaches to inform where to initially focus their resources and allow them scope to 'climb' the 'Investment Ladder' as developments allow. Cost benefit analyses as well as risk assessment may well differ depending on the initiative, which can in turn assist in deciding where to initially target initiatives and identify the scope for greater ambitions. This may assist in helping the States identify where it believes it should position itself.

If a ten year horizon from 2008 to 2017 is considered, the cost of an energy efficiency initiative is estimated at around £0.750m[1] assuming 5 light bulbs are replaced in each household by energy efficient light bulbs. Based on factors used by AEA Technology in producing the most recent climate change data published in 'Sustainable Guernsey 2007', the estimated CO2 saving from such an investment is 90,000 tonnes, at £8/tonne of CO2 over 2008 to 2017.

This option is also low risk given this is established technology, and a number of countries have committed to banning non-energy efficient light bulbs as part of their climate change agenda[2]. Such widespread demand for this technology is likely to reduce the costs given economies of manufacturing scale, lead to ongoing improvements in the technology and provide a long term sustainable solution. Given the scale of cost, the States of Guernsey could commit itself to a comprehensive programme at a specific level of the 'Energy Efficiency' value chain that does not produce disruptive organisational and institutional change and achieves material carbon savings in a meaningful time frame.

1 £0.375m for a five year period as per previous OUR response, or £0.750m for a ten year period given a five year lifespan assumed for these light bulbs.
2 These include all EU member states, Australia, and Canada

The energy efficiency option is set against a heavy engineering solution such as tidal generation. Investment in tidal generation as stated in the Energy Policy is near the top of the value chain with costs of £12.5m suggested to achieve a 5.5% saving in CO2 emissions based on GEL estimates cited in the policy paper. This represents a total CO2 saving of around 14,000 tonnes over 2008 to 2017[3] at a cost of £880/tonne. If States involvement in this technology were pursued at this level of commitment, in order to achieve a saving equivalent to that of an energy efficiency initiative the cost of investment in tidal generators would need to be in the region of £80m[4].

It is also the case that in order to achieve the renewables target stated in the Energy Policy of 20% by 2020, the investment cost in tidal generation alone is £56m if GEL's estimate of the capex cost is accepted. The OUR would note however that it believes this estimate to underestimate the actual likely costs and does not take account of the significant operating costs and approximately £45million that will still need to be spent on renewing the existing on-island generation capacity over this period.

The above analysis suggests the States would be prudent to employ a highly conservative strategy when considering tidal generation. The analysis therefore underlines and supports the Energy Policy Report's view that the States adopt a facilitative role as opposed to attempt to involve itself at a higher level of the value chain for an initiative such as tidal generation.

In terms of energy efficiency, while the analysis suggests initial involvement at the lower end of the 'Energy Efficiency' value chain the cost and benefits are such that an aggressive strategy offers the potential for considerable success at least cost, with further initiatives possibly pursued at a later stage. Table 1 below summarises the estimates discussed above.

Table 1

	Cost /Tonne of CO2 saved (2008 to 2017)	**Total CO2 saving (2008 to 2017)**	**Total cost (2008 to 2017)**
Five Light bulbs per household	£8/tonne	90,000 tonnes	£0.75m
Tidal generation (5.5% of renewables by 2012)	£880/tonne	14,000 tonnes	£12.5m

The facilitative role that the Energy Policy Group proposed with regard to renewables is, in the OUR's view, therefore the correct approach. The large costs involved make it inappropriate for the States itself to fund such investments. We would share this view with respect to consumers funding such investments. These are high risk, speculative, long term projects which will require extensive expertise and commitment of resources. Highlighting that Guernsey's natural resources are available for others with the capital and technological resources to take advantage of

3 Assuming tidal generation is available in Guernsey by 2012. If a ten year time horizon is taken from 2012 the equivalent figure is 24,000 tonnes of CO2.

4 If a ten year time horizon is taken from 2012 the equivalent figures are £525/tonne of CO2 and £50m as the total cost.

is a more prudent and sensible approach, with the option to develop local expertise on the back of such initiatives.

An Energy Policy that focuses on less than 9% of the Island's emission sources has clear limitations however. There is a risk of exponential increases in the cost to Guernsey if CO2 savings continue to be sought from a narrow base of the economy that has already delivered material reductions. Greater savings are realisable elsewhere at lower cost with significantly less risk of failure.

91% of current carbon emission sources are not the focus of the Energy Policy Group's terms of reference and are not considered to any great extent in the Report itself. There is therefore every likelihood of greater prospects for reducing CO2 emissions from those sources. It can be assumed that the introduction of the cable link led to a fall in emissions from pre-2000 levels of up to 75% from power generation. The cable link was introduced in 2000, with at least 75% of the Island's demand typically met from this power generation source since that date. This has impacted materially on the carbon emissions from electricity generation on the Island.

The OUR notes that the cost estimate used by the Energy Policy Steering Group for costing of tidal generation is heavily qualified. This is equally true of the timing of its availability. The variability around this central cost estimate is likely to be large; potentially multiples higher than that quoted in the report, while operating costs should also be estimated. In particular, the estimate of £12.5m to generate 5.5% of the Island's requirements appears highly conservative when set against those found in specialist reports to the UK Departments heading climate change initiatives such as the Department for Business, Enterprise & Regulatory Reform and Defra. The OUR's view is that such costing evidence should be subject to independent scrutiny before it is accepted as a working estimate.

Even if these estimates are correct, as discussed above, the scale of these costs relative to the CO2 savings compare poorly with proven technology that is available immediately and offers carbon savings multiples higher than a more uncertain large scale heavy engineering-led solution not yet available. States policy should also take account of the real possibility that the technology may not be commercially viable for this Island in the foreseeable future.

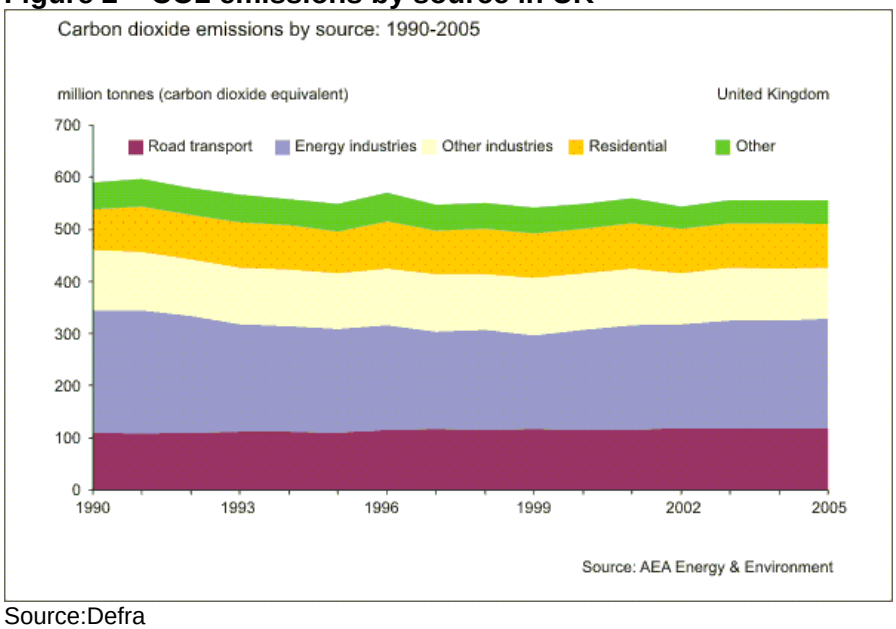
Guernsey should identify targets that take more account of Guernsey specific factors. Targets adopted from other jurisdictions with a very different mix of contributors to greenhouse gases could lead to ineffective use of resources.

It is the case that large-scale engineering solutions as part of the climate change agenda are a higher order of priority in economies where energy intensive industries are not easily adapted to lower energy solutions. In particular countries where energy generation is a significant contributor towards emissions – in the UK for example energy generation accounts for 37% of C02 emissions compared to under 9% in Guernsey. Such countries do need to make particularly significant changes to how they produce their energy to enable them to meet their obligations.

Given the absence of extensive heavy engineering industries in the Guernsey context, and the relatively low contribution from energy generation, a different emphasis seems appropriate. A Policy that duplicates another economy's targets that

has a different mix of greenhouse gas emission sources risks applying remedies in some areas when the real priorities lie elsewhere. The OUR therefore suggests that before any targets are proposed, a more detailed assessment is undertaken to identify targets that are more focused on Guernsey specific circumstances.

Figure 2 – CO2 emissions by source in UK



Source:Defra

The timing of any decision to introduce macro renewable generated electricity will have a material effect on the cost to the Island given the risk of duplicating generation capacity.

The Island has an existing capacity comprised of the cable link and a fleet of generation engines nearing the end of their asset lives. The next round of cable link investment is currently budgeted at £14m, and replacement of existing on-island generators is estimated at £29m. These are large scale investments, with planning horizons dictating firm commitments or actual replacement over the next five years.

If such investments were to go ahead the asset lives of this capital equipment is on the basis of utilization over 20-30 years. If an investor, including the States, were to consider funding a renewable project the timing of these costs is a factor in any cost assessment. Given the considerable amount of excess capacity already available and the mitigating effect of energy efficiency measures, the true cost of a renewable generation initiative is the sum of the resulting redundant capacity plus the cost of developing the replacement renewable generation capacity. The current policy considers only the potential cost of renewable generation capacity, when in fact the effective redundancy of capacity already invested in will be a significant cost should such capacity comes on-line after the £14m and/or £29m investments have taken place, irrespective of who funds the investment.