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The much-delayed electricity master strategy

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info@gpeg.org.gg
www.gpeg.org.gg

THE GUERNSEY POLICY & ECONOMIC GROUP LBG

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THE MUCH DELAYED ELECTRICITY MASTER STRATEGY

We believe we are days away from a paper going to the States for consideration. We have been fortunate enough to learn quite a lot about the proposals and make our comments in the expectation that the proposals are not subject to meaningful late revision. It's a complex decision to make – even before you read the massive papers.

A very considerable cost has been incurred for two firms of consultants (PWC and Siemens) to produce a number of (repetitive) papers over the last year or so. Any substantial implementation of strategy has been largely kicked past our next election.
(In addition, Frontier Economics are being paid for further reviews of the operating costs and tariffs – you might wonder if the (far from low cost) civil service do anything much without lashing out on consultants.)

The concluding plan is intended to cover the period to 2050 – a very long time. Many things can happen in that period; power utilisation will very likely rise as CO2 producing fossil fuels are phased out, but the magnitude and timing of demand change is pretty unpredictable. Fossil fuels will likely fall in cost as volumes reduce. Importantly, alternative energy technologies will improve, and costs could decline greatly – but no-one can predict any of this with great accuracy, which begs the question of why would such a long-term date be used rather than a shorter term, more realistic aim to address some of the fast approaching issues the Bailiwick faces.

The Guernsey 3 point master strategy is to:

1. Build a direct connection to France with a capacity of 100 MW and retain the existing 60MW connection to Jersey. The principal reason for doing this is obviously to buy French generated electricity; in the absence of this supply the cables are scrap.

No long-term agreement exists and clearly constructing the new cable would be very rash in the absence of such an agreement.

2. Construct an offshore windfarm of around 65MW which when it starts production in an

estimated 2035 would provide perhaps half the island's power. This could be 4 or 5 very large turbines needing perhaps 7 square kilometres of sea space to operate and about 250 metres in total height. The hubs will be above the horizon from 40 kilometres away.

No recently constructed UK offshore windfarm is anywhere near this small – they are more like 20 times that capacity.

3. Replace, as needed, the existing aged thermal plant with just enough new capacity to manage if wind and/or France do not provide.

The likelihood of no France and no wind generated power is sufficiently low that this should be an adequate insurance policy. Entirely sensible! Adding/changing thermal generation is relatively quick – months rather than the decade needed for offshore wind.

The calculations we have seen, as to the costs of the various options that have been considered, are complex but speculative. It seems that the projections are in current £s but the expenditures are mostly some years ahead so inflation should be (but is not) considered. There is a slightly mysterious "WACC" (Weighted Average Cost of Capital) adjustment of 6% - given that the States only have one practical source of capital – borrowings – it is not clear what is being "Weighted". Given also, inflation and the traditional massive overruns on public sector major capital projects (IT, hospitals, schools etc.) the actual £s on the capital spend for the proposed master strategy could well be **reaching towards cash payments of £1bn** over the next 15 or so years.

The biggest moving part is the price of electricity bought from France. Rationally you would expect that a large and well managed electricity utility can produce more reliably and cheaply than a tiny jurisdiction such as Guernsey. Our French suppliers should reasonably expect to make a respectable profit on the very marginal costs of supplying us. This cost varies with demand. France has a substantial nuclear generation capacity which essentially churns out the same volume of power all the time, so when demand is low then there would be negligible cost in supplying Guernsey with power that would otherwise be dumped. In contrast when demand soars (extreme winter or summer weather for example) then our supplier must burn gas to keep up with demand at a very considerable cost.

That's all fairly obvious but, from the French end, they will see the very considerable difficulty of reaching Guernsey's green targets and may test our willingness to miss those targets for lack of non-hydrocarbon energy by discovering our 'flinch point' in pricing. The States commitment to reducing CO2 levels by 57% from 1990 levels by 2030 is ENTIRELY dependent on getting low CO2 electricity from France. In the extreme case of no supply from France our CO2 generation would rise - a lot. The well meaning (aka naïve) commitment by the States gives our French supplier a very strong negotiating position.

Encouragement for more solar generation and increased use of heat pumps is a small and

sensible part of the strategy and could make a small dent in the 57% target by 2030 – but sadly it probably could not make a 5% dent by 2030 if we tried hard.

If we delete the rather miniature offshore wind farm from the recommended master strategy it seems that the Siemens estimate is that over the next 20 years, whilst saving us spending some £210m (without any adjustments for inflation or overruns etc.) in capital spend, French energy would cost Guernsey around £400m in the period to 2050 **more** than domestic offshore wind produced electricity from a 65MW windfarm.

There seems very little basis for the import price assumed in the Siemens report. So, this estimate is not much use for planning purposes.

We understand that French power generation is increasing after a period of supply shortage so negotiation could be easier than it was. A little good news.

The French negotiating positions could include:

- No future deal on offer (highly unlikely)

- Offering their excess baseload (their nuclear plants often generate more power than domestic French demand) but telling us we would have to generate our own power, and/or pay up for French power, when they run short

- Guarantee supply but on variable prices based on the French power market plus a bit

- All with terms ranging from short to 25 years. Short terms makes it difficult for Guernsey to commit capital.

Numerous negotiated variations exist with differing benefits and issues. Some decisions make things very easy – if our supplier walks or demands a very high price then our least worst option is to burn just hydrocarbons, and forget a new cable, until we can get a lot of wind power (and solar) to reduce hydrocarbon energy usage.

There must be a serious question as to the economic size of any offshore Guernsey development – it seems that in recent times sizes of 60MW to 90MW have been postulated. Without knowing the actual site of a windfarm, its detailed wind profile, equipment and installation costs and the costs and/or savings of a French supply deal, we cannot see how the optimal size is arrived at.

Rationally it would seem that marginal French power should be cheaper than domestic offshore wind and we should not proceed with the offshore project without seeing if we can economically, and in an environmentally sensible way, solve the medium term power supply issues without the pains of planning, environmental issues and an agonising learning curve on maintaining operation for a miniature windfarm.

A further real complication is the continuing evolution of alternative energy technology. Prices of alternative energy equipment have tended to decline and performance continues to improve. It is within the realms of possibility that in a few decades we may see extensive use of hydrogen, economic tidal power, better EV, cheaper deep drilling for geothermal power, miniature nuclear plants and even nuclear fusion. The most likely of these for Guernsey is cheaper tidal technology – no emissions and no weather sensitivity. These technologies could obsolete a wind farm….or in fairness, most alternatives.

However, and importantly, most forecasts of future wind power costs are also optimistic of a considerable drop in wind power energy costs – largely from ever bigger sites and turbines. Delay could save money.

Blank Cheque for Guernsey Electric?

We understand that it is being recommended that the States approve GEL borrowing (no quoted figure) without the need to revert to the States "to implement the master strategy". Even the site location for offshore wind is unknown, neither is the geology or environmental impact, no quotations have been obtained from suppliers and as shown above, the case is not strong for much of the expenditure – do the States really want to give GEL the power to spend hundreds of millions without close States' involvement?

How can this be financed?

Following on from the GST debacle the cash deficit of the island continues. The Electricity Strategy papers refer to private capital being possibly used but recommend public money. It is very hard to imagine Guernsey Electric, a 100% States owned and controlled entity being able to raise borrowings without a States guarantee. A rough doubling of States' debt would be needed to fund the strategy at a time when our debt rating is already shaky. A reasonable estimate today would be a 7% pa yield on such fresh debt – effectively something around £100m cash pa would be added to the "structural" cash deficit of the States, and eventually this cost will fall on the taxpayers with further pressure to increase taxes.

Environmental Considerations

French power is mostly nuclear (50% +) with a good portion of hydroelectric and growing alternative energy. They do burn gas in the winter. The very silly certificates of clean energy (provided for a fee) from our French supplier are meaningless – electrons do not know where they come from. Any supply to Guernsey will simply add to demand on French generation and if (somehow) only clean energy came to Guernsey then French consumers would get more hydrocarbon derived power. Exporting the CO_2 does nothing for the atmosphere!

But French power is pretty low on CO_2 generation, and we certainly lack any obvious

economic short-term route to even cleaner power.

(In passing we should note that Guernsey's contribution to global warming is completely trivial. We are chasing targets that require serious expenditure to even approach the stated objectives – but that is the political will. We could probably do more for global CO2 by spending the money in other jurisdictions.)

GPEG's Recommendation

See what deal can be reached with our French supplier. All kinds of structure are possible but without knowing what is negotiable, rational decisions cannot be reached.

We do not see that we can negotiate for half our needs (our domestic wind power would provide the rest) any more easily than we can negotiate the full demand. Indeed, it would complicate things.

It would be quicker and much less complex to shake hands with our existing supplier than to proceed with a sub-scale windfarm with all its complications. It could be cheaper and allows easier future adoption of better solutions as, and when, they emerge.

There has been discussion of a much larger offshore wind farm being constructed in our waters. This could supply Guernsey, Jersey and France. The operator could be a commercial operator, or a consortium involving Guernsey, who could extract fees and/or cheap electricity in exchange for providing the site. US auctions of offshore sites have recently yielded as much as $2m per square kilometre – any project here would be 100 square kilometres or more.

A formal bidding process would be appropriate. We think this is worth exploring – largely its viability will rest with French interest or otherwise. Clearly there is no sensible discussion of a 65MW offshore site for Guernsey if this much larger project goes ahead.

There is a great deal more that we could comment on but we will await more final proposals to do so.

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You could learn a lot more at our Energy lunch on 9th June, at the Old Government House Hotel. Dr. Benny Peiser, Director of the Global Warming Policy Foundation and Bob Beebe, CEO of The Little Green Energy Company will be sharing their thoughts on these crucial issues.
Tickets are still available. Please contact info@gpeg.org.gg for details, or simply click on the appropriate link below to purchase your ticket directly.

One of our directors has a potential conflict and has not played a part in the construction or preparation of this report.