

Standby Charge for Embedded Electricity Generation - Guernsey

Response to Call for Information - 4th July 2018 (the "Request")

1. Introduction

- 1.1. This document adopts the same abbreviations as the Request.
- 1.2. This document has been prepared by a group of members of the public, who are mainly concerned as members of the business community, individual solar PV owners, and individuals looking to develop commercial solar generating capacity who are concerned as to the effect of standby charges, generating licence charges and buy-back rates on the independent development of renewable energy resources in Guernsey.

2. Responses to formal questions

Question 1: Does the respondent agree with CICRA's proposed principles for reviewing the GEL standby charge? If the respondent has alternative views or relevant evidence, the respondent is asked to explain those and provide all of its analysis and assessment relating to this matter to inform CICRA's consideration and next steps.

- 2.1. The Respondents believe that the review of standby charges is essential but as the charge applies to other aspects of generation (other than embedded), in particular to renewables such as solar PV and wind, the applicability of the standby charge, its economic effects in terms of stifling competition and the level at which it starts to apply (installations greater than 25kw) in relation to renewable energy generation should be included in the review.
- 2.2. In addition, the effects of reducing or varying buy-back rates from private or commercial installations over time can have a significantly negative effect on their economics, which require stable income streams over an extended period to provide a suitable foundation for capital investment. The Respondents would welcome a statement from CICRA as to its expectations in terms of long term stability of buy-back rates.
- 2.3. There is a crucial difference between on-demand, embedded CHP installations of the type which IEG seeks to install and the passive generation of electricity by solar PV and wind power. Despite the fundamental differences, renewable energy generation >25kw remains subject to standby charges which render it economically unviable (even though, for example, solar PV cannot generate power at night, windmills do not work when it isn't windy and such technologies cannot therefore ever become a stand-alone generating option requiring GEL to "standby" without notice).
- 2.4. The only current option for renewable installations >25kw is either to pay standby charges (the harmful economic effects of which are contained in the attached case study) or to seek a generating licence, which at £10,000 is a costly and

disproportionately excessive restriction. This fee currently acts as a significant barrier to competition and entry into the market for renewable generation, which is ironic given that it is a regulatory fee for the competition authority itself.

- 2.5. CICRA has stated that it will consider flexibility on the cost of application for generating licences but there is no published guidance on how this might apply, or the fee levels which might be applied for renewables¹. As a rule of thumb, current solar PV installations cost £1000 per Kw installed. A 30kw installation costing £30k would require an additional cost of £10k in application fees for a generating licence, this is significantly out of scale and disproportionate.
- 2.6. The Respondents believe that CICRA should evaluate the level at which the stand-by charge kicks into operation with a view to raising it to a much higher level (at least as high as Jersey, ie 50kw) so as to enable development of larger solar PV installations which not only supply commercial operations but feed surplus into the network for distribution and sale by GEL. The Respondents also believe that CICRA should create a significantly lower (and scaleable) fee structure for generating licences for renewables (specifically wind and solar). The Respondents suggest the following fee scales to be applied to all renewable generating licences (assuming no change to the attachment point of 25kw):

| Installation size range | 25 - 150 kw | 150 - 500 kw | 500 - 1000 kw | >1000kw |
|--------------------------------|--------------------|---------------------|----------------------|-------------------|
| one-off fee | £500 | £1500 | £2500 | £5000 |

- 2.7. The Respondents believe that there is an argument that standby charges should not apply to renewables at all, as these generating technologies cannot currently by their nature be stand-alone or fully embedded generating options. Rather these widen the generating mix, add security of supply and enable the States of Guernsey to meet its Kyoto obligations at no capital cost to GEL or the taxpayer.
- 2.8. There is no mid-scale competitor to GEL in the renewable generating sector, which is a clear reflection on the competition-stifling effects of the standby charge and GEL's current dominant position².
- 2.9. It can be seen from the attached example that the economic effect of a combination of fixed rate buy-back charges and standby charges on a commercial solar PV installation results in GEL absorbing just over 20% of the total capital cost of a solar installation every year of the assumed 20 year lifespan of the installation and reduces the annualised investment return from a potential total of 9.5% (at a fixed discounted buy back rate of 9.8p per kwh) down to 1.3 %. This is clearly excessive and together with the cost generating licences has the effect of maintaining GEL's dominant generating position as well as preventing any development of renewables.

¹ <https://www.cicra.gg/business-resources/electricity/licence-fee/>

² see attached case study and associated financial projections and conclusions comparing with / without standby charging

- 2.10. The worked example included as a schedule does not include maintenance, insurance, generating license fees, management fees or leasehold rent. When these costs are added on, the current framework for standby charges and discounted buy-back rates makes commercial solar PV economically unfeasible. At the same time, GEL already has a generating licence and the scale to enable it to install its own PV without any of these hindrances. This is clearly anti-competitive.
- 2.11. Whilst it is accepted that there are strategic benefits from retaining control of the grid and generation infrastructure, it is submitted that present controls are both excessive and anti-competitive, to the direct detriment of both security of supply and the benefits of the wider environment, including Guernsey's international commitments to reduce CO2 emissions.
- 2.12. The population of Guernsey has clearly signalled that they wish to see more significant movement in this area and this does not imply or require that GEL should be the only participant.³
- 2.13. The States of Guernsey has requested that the Doha Amendment (Kyoto 2) to the Kyoto Protocol be extended to Guernsey (the original agreement having been committed in 2002 and formally extended to Guernsey in 2006). This international legal commitment makes the provisions of the Paris Agreement in relation to climate change and the reduction of carbon emissions a legal obligation of the States of Guernsey and its policies must therefore (in a legal sense) be compliant with the Paris Agreement objectives, which seek to reduce carbon dioxide emissions by 80% by 2050. Failure to implement energy policies which work towards this outcome may therefore be unlawful, especially if they present a barrier to competition for private or commercial renewable alternatives.
- 2.14. The Respondents' view is that standby charges, charges for generating licences and buy-back rates have a combined effect of eliminating electricity generation competition, and specifically in relation to low-carbon renewable energy generation (to which the States of Guernsey has made a legal commitment in terms of reducing its CO2 and CO2 equivalent emissions by way of Kyoto). This is preventing >25Kw but otherwise relatively small scale and low-impact independent solar or wind powered energy resource development.
- 2.15. As standby charges are effected by the only electricity provider with quasi-statutory powers, they can only represent a *de facto* abuse of dominant market position and distortion of the electricity market in Guernsey. Whether or not this is deliberate, such charges favour the dominant market position of GEL and at the same time prevent the private and commercial development of renewable sources of energy which are highly valued by the public.

³ <http://www.guernseyrenewableenergy.com/news/>

2.16. The Respondents submit that the basis of GEL's arguments (in relation to grid costs and need to maintain sudden standby capacity) are fundamentally flawed. Figures are not available to demonstrate what proportion the private solar and proposed IEG mixture of alternative generating sources represents to the total of GEL's capacity but it is estimated to be less than 1% of total. Whilst the respondents do not disagree with a fair contribution to distribution/grid charges, outside of catastrophic events which would similarly affect GEL, it is very easy to predict the output from sources such as solar PV (which has no moving parts) and to manage the forward buying of supply via connection with the French grid.

2.17. GEL's capacity to provide standby itself or via cable is already significantly above 1% and it is the submission of the respondents that no standby charges should be applied at all until local alternative providers / generation reaches a point where GEL'S buffer is considered to be at demonstrable risk. The Respondents submit that the analysis of standby charges by CICRA should therefore identify and focus on the point (ie the percentage of GEL's demand) at which GEL can be said to have legitimate strategic concerns about providing standby demand without adequate financial support for CAPEX. Any intervention from a tariff perspective should be set at or about this inflexion point. When considering tariffs, where excess electricity is being delivered into the grid, then charges for CAPEX should also take into account the CAPEX commitments of the competitor and the indirect benefits to GEL of reduction in peak demand and wear and tear on its own equipment, particularly as buy-back tariffs are already approximately 50% of day time buy-back rates.

Question 2: Does the respondent agree with CICRA's proposal to set the standby charge applied by GEL at zero pending the review of the charge? If the respondent has alternative views or evidence, including suggestions on benchmarking, the respondent is asked to explain those and provide all of its analysis and assessment relating to this matter to inform CICRA's consideration and next steps.

2.18. Yes, the Respondents believe the standby charge should be set at zero until this review is complete. The Respondents also believe that as well as introducing a sliding scale for generation licence fees, CICRA should send out a clear message that it expects GEL to maintain long term stability in buy-back rates and not to introduce changes to tariffs which harm the developing renewables market. This is particularly important given that CICRA does not have access to up to date regulatory accounts and is not therefore in a position to analyse the justification for tariff changes. On the other hand, it can be readily demonstrated that decreases in buy-back tariffs or high standby charges have a disproportionate effect on the provision of renewable energy generation.

2.19. The Respondents are very concerned about recent public commentary from CICRA and GEL in relation to amendment of tariffs, and more specifically in relation to electricity buy-back rates, which the respondents understand from members of the GEL users group, GEL is proposing to amend punitively in late 2018. GEL's MD argues publicly that this is a considered response to an unsupported assertion that "wealthy"

people installing solar PV are not contributing towards grid maintenance costs. This is despite the fact that exported excess electricity must be sold to GEL at effectively half the rate at which GEL sells domestic tariff during the day time to its customers, ie as a financial windfall to GEL. The solar PV market is so small relative to GEL as to make these comments significantly illogical and disingenuous. If customers are saving money by investing in and generating solar energy this is no different in effect to fitting more efficient lighting systems or simply turning appliances off and using less energy - and reducing emissions is also a legal commitment of the States of Guernsey. Are those customers who invest in efficiency in pursuit of these objectives also going to be discriminated against and be forced to pay more ? Clearly any attempt to reduce rates to discourage customers who seek to reduce their emissions is unfair unless also applied to customers who save money by increasing their efficiency. Any measure which will also distort the market by removing competition (even at a private level) is contrary to competition law principles, and additionally contrary to Guernsey's legal commitment to reduce emissions under the Kyoto treaty.

2.20. The Respondents are very concerned in particular that GEL has no basis on which to analyse or assert knowledge of the "wealth" of persons who fit solar PV and has no political mandate to discriminate against its customers (who are its ultimate owners) on the basis of spurious social engineering principles. Any amendment to current tariffs is likely to further discourage the fitting of private solar PV, again reinforcing GEL's position as the only market participant. It will thus have the effect of a practice which is unfair and will certainly distort the market.

2.21. The effect of reducing buy-back rates for solar PV in particular will render the economics of solar PV completely redundant by extending the capital repayment period for solar PV equipment beyond the means of the general public or the useful life of the generating equipment.

2.22. CICRA's attention is drawn to the schedule and associated workings, which demonstrate the economics of a 350kw solar pv site (operating without a generating licence). An electronic version is available to verify equations / calculations. In summary, the application of standby charges to such a system, combined with a discounted buyback rate, renders commercial competition in the solar PV market untenable. It represents a clear market distortion which ought to be corrected by the following means;

- long term commitment to fixed buy-back rates (to move up proportionally to domestic tariffs)
- raising the point at which standby charges apply to 50kw
- reducing the cost of generating licences for solar and wind powered commercial applicants

Schedule

Working comparison - Solar PV Installation economics below and above 25kw.

Assumptions

- 13.4kw private scheme (real generating data) scaled up and compared to a 350kw solar PV system.
- Profit is expressed gross to reduce complexity - ie before expenses such as rent, maintenance, insurance, rates, tax
- There is no allowance for inflation or borrowing costs for initial capital
- It is assumed that buy-back rates will remain at 9.8p
- It is assumed for comparative purposes that GEL will on-sell generated capacity at or about the standard day time domestic tariff (18p).
- Lifetime is 20 years (being the warranty limit of the PV panels). They may in reality continue to generate power for some years after this date.
- System outputs will vary according to the weather, they may be higher or lower. This will shorten pay-back periods by generating more energy.

Key Findings

In a 350kw system where standby charges apply and GEL is purchasing all of the generated electricity at the standard buy-back rate (9.8p):-

- System break-even date (based on gross income) moves from 6.9 years (without standby charge) to 15.9 years.
- GEL standby charges combined with discounted electricity supplied and sold on at a profit without any CAPEX liability to GEL equates to 20.4% of the entire capital outlay for the system, every year, for 20 years (or 4x the actual capital cost of the PV system).
- The standby charge eats 56% of the generating income of a 350kw system when electricity is purchased at the standard buyback rate.
- The gross profit margin (expressed as percentage annual return on equity) without standby charges is 9.5%. When standby charges are added, this reduces to 1.3% (before costs). In other words, the acquisition of electricity at half price and the application of standby charges renders an installation of this type loss-making and economically untenable over a 20 year lifetime.

| panels power (kw) | installation cost | annual production (kw) ** | annual generation value at buy-back rate (9.8p per unit) £ | annual generation value at peak daytime rate (18p per unit) (ie if generated by GEL) | annual profit made by GEL in buying at 9.8p and selling at 18p per unit | annual standby charge payable to GEL | Total annual payments to GEL (standby plus profit on forward sale) | annual payments to GEL as a percentage of total capital invested | % standby charge cost to generation income | lifetime standby charge* | pay back date (years) at 9.8p buy-back rate | pay back date (years) at 18p peak rate | generating licence fee | Annual profit | payback (YEARS) with standby charge and 9.8p purchase price | lifetime value at 9.8p buyback rate | lifetime profit at buyback rate (no standby charge) 9.8p | Annualised profit (no standby charge) 9.8p | % annual return (no standby charge) 9.8p | annualised profit with 9.8p buyback rate and standby charge | lifetime profit with 9.8 buy back and standby charge | lifetime percentage return with standby charge | annualised percentage investment return with standby charge |
|-------------------|-------------------|---------------------------|--|--|---|--------------------------------------|--|--|--|--------------------------|---|--|------------------------|---------------|---|-------------------------------------|--|--|--|---|--|--|---|
| 13.4 | 13,500 | 20000 | 1960 | 3600 | NA | 0 | NA | NA | 0 | 0 | 6.8877551 | 3.75 | 0 | | | 39200 | 25,700 | 1285 | 9.51851852 | N/A | N/A | N/A | N/A |
| 350 | 350,000 | 518000 | 50764 | 93240 | 42476 | 28809.48 | 71285.48 | 20.36728 | 56.7517926 | 576189.6 | 6.89464975 | 3.75375375 | ? | ? | 15.9420475 | 1015280 | 665,280 | 33264 | 9.504 | 21954.52 | 89090.4 | 25.4544 | 1.27272 |

* - assumes 20 year lifetime

no cost allowances for maintenance, inverter failure or rent

** - generating outputs are predicted from existing 13.4kw local installation and up-scaled