

This description of ex parte communication (the “Description”) was submitted pursuant to section 73(2) of the Regulatory Authority Act 2011 (RAA). The Regulatory Authority has noted that the Description includes issues that were not discussed during the ex parte communication and therefore has highlighted such language in yellow. The Description has not been edited in any other way.



**Description of Issues Discussed at Meeting with Regulatory Authority of
Bermuda on 26th July 2017 @ 11.00 am**

Submitted 27th July, 2017

Attendees: Michael Wells, RAB; L. Nigel Burgess, RAB; Monique Lister, RAB; Tristy Smith –RAB;
Nicholas Duffy, BAE; Chris Nash, BAE.

Background: The meeting was requested by Bermuda Alternate Energy (BAE) after the release of the Preliminary Report (PR), Preliminary Decision and Order, dated 14th July, 2017. BAE were requested to provide an agenda for the meeting and suggested the following 4 topics:

We would propose the following four topics as a starting point for an agenda:

- i) Review of the inaccurate information supplied in Section 1.2 (8) of the Executive Summary of the Preliminary Report in view of the detailed Financial Data submitted by Bermuda Alternate Energy in their response to the initial consultation document;
- ii) Review of the financial impact to date of the 'Interim Orders' on the renewable energy industry in Bermuda;
- iii) Determination of a Feed In Tariff that is compliance with the legislated requirements of the Electricity Act;
- iv) The importance of 'Energy Netting' in residential installations to ensure right sizing of solar PV systems.

The RAB responded as follows:

"Please note that the Authority agrees to Agenda items i and ii in listen only mode. As we are currently in public consultation, the Authority is limited in terms of what it can/can't discuss. Any additional comments related to i-iv may be submitted to the Authority as a formal response to the public consultation."

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Agenda Item 1 - Review of the inaccurate information supplied in Section 1.2 (8) of the Executive Summary of the Preliminary Report in view of the detailed Financial Data submitted by Bermuda Alternate Energy in their response to the initial consultation document;

The Executive Summary of the PR, Page 2, Section 1.2, 8. States:

1.2 The lack of financial data and analysis from the solar installation industry

8. The Authority is concerned that the solar installation industry in Bermuda failed to provide any analysis or data to support its claims as to the financial impact of the EGD.

Historical Context

In relation to the above section of the Executive Summary, BAE provided the historical context for the presentation of the responses to the EGD Consultation Documents, submitted on 12th May, 2017, by themselves and others. We make note of the following specific issues that made the task both extremely challenging and time consuming:

- i) As late as 05th May, 2017 we were forced to make major revisions to some of the most significant elements of our response as differing interpretations of the specific meanings of critical phrases in both the original Emergency General Determination (EGD), versions 1, 2, & 3, and the 'Clarification Order' of 17th April, 2017, were acquired.
- ii) In conversation with the Director of the Department of Energy on the 4th May, 2017 it became clear that the Department of Energy had arrived at a significantly different interpretation of the meaning of the EGD document than we had.
- iii) In an effort to seek a final clarification, the Director (Department of Energy) interceded on our behalf, to acquire directly from the RAB, what we understood at the time to be, the 'definitive and final' interpretations of the problematic sections of the text.
- iv) Within 24 hours of receiving the above 'clarification', which we are told came directly from a member of the RAB team, we subsequently received another email from the Director indicating that the information she had received from the RAB team member was now apparently incorrect:
- v) These interchanges illustrated quite clearly that there was not only, mass confusion in the industry, but also, significant confusion within Government and the Department of Energy, and also between the staff within the RAB itself, over the precise meaning and intent of the documentation they have produced.
- vi) We included copies of the original email exchanges between ourselves and the Department (Director) of Energy in our original submission of 12th May, 2017 to ensure full transparency.
- vii) The other major solar installer (Bermuda Engineering) filed a very comprehensive 17 page submission on 26th April, 2017, which was the original submission date prior to the two week extension. As a result, they were under the same understanding as the Department of Energy, BELCO and many others that the EGD included the 'Monthly Netting Provision' that was part of the original BELCO submission. This can clearly be evidenced by simply looking at the content of their submission. It is fair to assume, had they known the true intent of the EGD was to remove all netting, that their emphasis on financial data would have been significantly different.

In the context of all the above, we were trying to produce a detailed consultation response, including financial modelling of complex data that needed numerous revisions due to the constantly changing interpretations of the very poorly worded original document. In addition, we were working to an extremely tight timeframe and without dedicated resources.

Submission of Financial Data

Despite the constraints of the 'historical content' summarised above, BAE submitted the following documents to the RAB on 12th May, 2017:

- A 21 page response to the Consultation Document addressing all questions except #2;
- A 9 Page, detailed response, specific to Question 2;
- An individual response from the Divisional Manager of BAE as a solar stakeholder;
- An individual response from the Engineering Manager of the BAC Group of Companies as a solar stakeholder;
- Other submissions forwarded to us and submitted on behalf of clients.

Our primary 21 page document contained 6 appendices, 3 of which were labelled '**Financial Impact Table**' and the 4th '**Summary Table**'. Each financial impact table provided detailed modelling scenarios for a 5kW, 10 kW and 15 kW solar system in both the original Net Metering and new FIT scenarios. In addition, each table individually modelled the impact for 'Low', 'Medium' and 'High' kWh consumption. The Summary Table provided the summary of the first three tables.

It is our contention that the statement made in the RAB Preliminary report is clearly completely untrue and shows a disturbing disregard for the efforts of those of us in the renewable energy industry. We have worked extremely hard for many years under very difficult circumstances to build this fledgling industry and are now under attack by the very body that is legislated with supporting our growth.

The statement is not only untrue but is also totally misleading to all of those who have read the report and has most likely negatively influenced public opinion against the industry and severely damaged our reputation as a whole. Because of this, we believe the legitimacy of the entire consultation process has now been compromised and there is a clear demonstration of bias in the manner in which the process is being administered.

"The Authority has carried out its own analysis of the economic and financial aspects of renewable energy installations, in particular solar PV installation, which is explained in Section 7 of this Report and attached as Appendix C". - See 7.3 Table 1: Summary of Results, Page 18

It has not escaped our attention that the financial data modelled by yourselves, and referenced above, bears a remarkable similarity, in both layout and overall content, to the data we submitted to the RAB on 12th May, and were subsequently accused of not providing!

In view of all the evidence we have provided, we conclude it is now the responsibility of the RAB to immediately issue a public retraction to the statement made in 'Executive Summary 1.2' on the grounds that it is untrue, misleading and damaging to the reputation of our industry. As we stated at the close of the meeting, now that we have brought this to your attention, we believe that honesty should supersede all other procedural protocols when disseminating information to the public on an issue as important as our future energy supply.

Agenda Item 2 - Review of the financial impact to date of the 'Interim Orders' on the renewable energy industry in Bermuda.

The following is a summary of the verbal comments made by our Chris Nash, P. Eng., on the financial impacts of the Interim Orders issued in the EGD.

We are dismayed that in spite of the numerous responses made about the disastrous results the FIT proposed by the RAB will have on the solar industry here, none of this seems to have been considered in implementing the same FIT rate of \$0.1736 originally proposed into the Preliminary Decision and Order. After a further two and a half months since our submissions on May 12, we can confirm that the enquiries that BAE is receiving for new residential solar installations are probably less than 15% of the levels prior to the issuance of the EGD. Furthermore, we have not made a single residential solar PV sale since receiving the clarifying order for the EGD in March. Although these sort of comments from the solar firms may be hard to believe, we now are accumulating empirical data from the Planning Department's web site that corroborates well with these opinions provided by the solar installation firms, their existing customers and other respondents in their submissions on the EGD.

Since the EGDs FIT came into effect in June 2017, Planning's web site shows that there were only three residential solar PV building permits or PDP applications filed in the month. This compares to eleven filed in the same month in 2016, or a year over year drop of 72.73% for the month. Now we appreciate that a single month's data is not statistically very reliable, so let's also look at the data for July even though the month is not complete. However, we know that perhaps 90% or more of residential solar permits are filed under the PDP permit system that calls for applications to be submitted only on Tuesday Mornings. Having checked the application log book at Planning on both Tuesday and Wednesday afternoons this week, we verified that no residential solar PV were submitted Tuesday morning or at all this week. As no residential solar permits applications were shown on the web site as being filed prior to this week, we can now say with almost 100% certainty that no residential solar PV permits have been filed in July 2017. This compares to 8 residential PV permits being filed in July 2016, or a drop of 100% year over year. For the two months together, this represents an 84.2% drop from the previous year.

Although we did not mention it in the meeting, the total number of building permits filed in June 2017 was actually higher than 2016, indicating that the drop in solar permits is specific to this industry and not a result of an overall drop in applications.

Based on the drastic drops in residential PV permit applications in June and July, we can now say with certainty that there is a very concerning downward trend in residential solar PV permits applications for the entire industry, not just for BAE. If Planning's data for August displays a similar downward trend we can only conclude that the residential solar industry in Bermuda, which is our single largest renewables industry, has been placed into a crisis state from which it may take years to recover. The EGD will be the primary cause of the demise of this industry, but other parties have also contributed to the residential public's complete loss of faith in solar PV as a sound investment. This includes the consultants hired to draft the Electricity Policy and EA, BELCO in the cessation of net meter installations starting in August 2016 and the other government entities involved in drafting and implementing the EA.

So let's look at what the RAB has done to further precipitate this apparent crisis. The RAB has proposed a FIT that is based on the one year old avoided cost to the Bulk Generation Licensee (BGL), which does not comply with what the EA requires. The EA requires the FIT to be based on the avoided cost to the Transmission, Distribution and Retail Licensee (TDRL). The EA also requires the establishment of auditable separate account for the BGL and TDRL to verify there is no cross subsidization and therefore to be able to verify the true avoided cost. To the TDRL. Not only does the proposed FIT not include the fuel customs duty hike and related other higher fuel costs this year, as seen in the much higher fuel adjustment for July 2017 compared to July 2016. Furthermore, it does not include any amortization costs, overhead, profit etc. of the BGL, which all form part of the TDRL's avoided costs.

In addition to the avoided cost to the TDRL, the EA also requires the FIT to include an economic benefit cost. Yet in spite of many of the public and solar industry responses to the EGD pointing out the economic benefits, the RAB has both failed to include for any economic benefit and failed to provide their reasons for doing so.

To put how low the proposed FIT is in comparison to other similar islands, we pointed out the following information from the Cayman Islands, which are very close to Bermuda in terms of population size, generation mix etc. The main island's electric utility, CUC, burn only #2 diesel in reciprocating diesel engines, using their one gas turbine only for emergencies. Their residential cost of electricity is pretty similar to BELCO's except that they do not have the tiered rate structure and their residential facilities charge is a small fraction of BELCO's. The Electricity Regulatory Authority (ERA) in Cayman has several years of experience in regulating the electricity sector there, whereas the RAB have less than one year's experience in this sector. In May 2017, the ERA and CUC announced their fourth FIT since 2011. The new rates for new customers converted to Bermuda dollars are as follows:

BMD\$0.36/kWh for Residential Systems 5 kW and Smaller (107.4% higher than the RAB's FIT)

BMD\$0.312/kWh for Residential Systems over 5 kW (79.7% higher than the RAB's FIT)

BMD\$0.252/kWh for Commercial Customers

Existing customers are grandfathered at their previous rate for the remainder of their 25 year contracts.

Not only are these FIT rates substantially higher than the one proposed by the RAB, but Cayman have already reached 6MW of installed rooftop PV, which is now double Bermuda's capacity. They are also allocating another 2 MW of rooftop solar capacity in this phase of their FIT programme, plus a further 1 MW for government buildings. Cayman commissioned their 5 MW solar farm in June 2017 and CUC pay the developer, Entropy, BMD\$0.204/kWh for electricity produced by the solar farm. That means a % MW solar farm in Cayman, with a better solar resource than Bermuda's is being paid 17.5% more for its solar energy than the RAB's proposed residential FIT. These sort of numbers from Cayman adequately demonstrate how inadequate the RAB's residential FIT is, largely due to the fact that the RAB's FIT does not comply with the requirements of the EA.

The Cayman model has been so successful because they have adhered to internationally acceptable renewable tariff setting principles such as the NRELS guide to renewable tariff setting mentioned in my response to question 4 on the EGD. In contrast, what has transpired in Bermuda has broken almost all of these best practice guidelines and possibly even established new mistakes that no other jurisdictions have made. The fault for this lies with the numerous parties involved in establishing and administering our renewable energy policies and legislation here and is not just the fault of the RAB. Again the result has been the almost complete loss of faith by potential residential customers here in solar PV as a sound long term investment.

The RAB's economic analysis of the impact of their proposed FIT show the simple ROI for residential solar PV systems here range from 8.27 to 14.37 years and has the nerve to say that these are still

attractive rates of return. Having over 40 years of experience in designing and selling energy savings technologies here, I learnt back in the seventies that anything with over a seven year simple ROI was not sellable except to maybe a few very green individuals. Indeed, just last week we were told by a leading business man here that he was not interested in anything with an ROI of more than five years.

The above RAB ROI estimates do not include either the cost of borrowing, nor the maintenance cost for such thing as removing the arrays to paint the roof every three to five years. Therefore these long ROIs are even longer or unworkable when borrowing costs etc. are included.

With regard to the RAB using Augusta Georgia's energy use patterns to model self consumption vs energy export for residential solar PV customers here, we believe that this is a fundamentally flawed modelling approach for the following reasons.

Weather data for Augusta shows an average high temperature in July of 93°F compared to 85.4°F for Bermuda. The average daily low for Augusta in July is 70°F compared to 77.9°F for Bermuda. With much hotter daytime temperatures, better insulation in most houses and the low cost of electricity in Georgia, we can conclude that Augusta residents are far more likely to leave their air conditioning running during the day compared to Bermuda residents who mostly turn off their air conditioning systems when they are at work. However because their summer nighttime temperatures are so much cooler than ours, their residential air conditioning systems will consume far less nighttime energy than in Bermuda residences. Therefore August Georgia residents with solar PV are far more likely to self-consume their daytime solar energy production than Bermuda residences, while consuming far less nighttime energy. The result is that Bermuda solar residences are far more likely to export much more of their daytime solar energy production, while importing far more at night compared to Augusta residences of the same general size and solar capacity. Therefore using the August model will indicate a far better ROI prediction at your proposed FIT than is achievable for typical Bermuda residences.

In summary, the Planning Department's records of solar PV building permit and PDP applications for June and July 2017 indicate an 84.2% drop from the same period last year. This already seems to prove the claims made in many of the original 84 responses that the proposed FIT would cause the collapse of the residential solar industry here. Yet in spite of these numerous warnings which were ignored by the RAB, you are still proposing to carry on with the same FIT rate. BAE maintain that the proposed avoided cost FIT does not comply with the statutory requirement of the true, current avoided cost to the TRDL component and that the establishment of the true avoided cost could still be more than 12 months away. Furthermore, the proposed FIT does not contain any economic benefit component as required by the EA even though many respondents comment on this economic benefit factor. Of the five original solar firms established here between 2009 and 2011, already 2 have ceased operating prior to the EGD. If the alarming drop in PV applications continues, it is quite conceivable that a further two solar firms will close if not all three remaining. The RAB is required under the EA to promote the use of renewable energy, yet there is now an increasing body of evidence showing that you have done exactly the opposite. Similarly, the EA requires the RAB to promote completion in the electricity sector, but your EGD has done exactly the opposite and we may again end up with BELCO as the monopoly and no solar firm still in completion. Likewise, the EA requires the RAB to promote Bermudian employment, but the EGD may result in multiple lay-offs followed by redundancies for most solar workers on the Island. All of our solar staff are Bermudian and we believe that this is probably the case for the other two firms still in business.

Time did not permit us to recommend our solutions to this grave predicament we now find the Bermuda solar industry in, but the solution is contained in most of the 84 responses submitted. That is to:-

1. Reinstate net metering to existing and pipeline customers as originally proposed by BELCO.
2. Implement the revised net metering up to net export as proposed by BELCO.

3. Provide a fixed duration contract for the above customers of at least 20 years.
4. Look to establishing a future FIT based on true avoided cost to the TDRL once they can finally be established and a realistic estimate of the economic benefit of distributed solar, which may vary by BELCO's customer class type.

The quick adoption of this type of solution is the only hope of saving the renewable industry here from total collapse.

Although it was not an agenda item, we did mention to the RAB that we did not notice any responses from customer of the two solar firms that are out of business. Therefore relying on the solar firms to disseminate RAB information to customers is flawed and that the RAB should instruct BELCO to disseminate the information as they have an accurate database of all net meter installations.