BASELOAD POWER CORP.

QUESTIONS AND FEEDBACK IN RESPECT OF THE IESO GRID INNOVATION FUND FOR INDOOR AGRICULTURE - OCTOBER 12, 2019

Background:

Please consider our experience which includes:

- developing 50 MW of wind energy in Essex County under the OPA's RESOP program;
- developing 100 MW in Chatham Kent that was included in Samsung's South Kent project;
- developing hundreds of micro-fit solar projects in Essex County; building a 2MW, 8MWh flow battery project with Milton Hydro in Milton; and
- having participated in IESO, OPA and NRCan procurement and funding programs since 2001.

General Questions:

A) In terms of funding, can you confirm if it is acceptable to receive 100% of the funding from governments and/or government agencies?

B) Please make the contribution agreement and proposal template available as soon as possible and we will provide comment on those as well.

C) Can the IESO comment on how the Local Impact areas were identified. The Hydro One Needs Assessment for the Niagara region identified that no regional planning was required this cycle.

D) Will funding be on a first come first serve basis or will funding be decided once window is closed. Will there be preference to getting application in early?

E) It is considered innovative to apply a technology used for growing cannabis to growing peppers?

F) The Grid Innovation Fund – Indoor Agriculture Call – Application Guideline says:

"Proposals relating to the research, development and demonstration of transmission, distribution and electricity generation technologies (except as noted in the Load Displacement Objective Category) are not eligible for Grid Innovation Fund support."

"Load displacement is when electricity is generated by an onsite, behind-the-meter project driven by a primary energy source of process waste heat, waste power, waste by-product, or waste gas. Such applications must have a net efficiency benefit to the user and must not be fueled by diesel, coal or any other fuel disallowed by the IESO. Additionally, any project or technology (e.g. solar photovoltaic, wind, waterpower, bioenergy) previously eligible under the IESO Feed-in Tariff Program or the IESO Micro Feed-in Tariff program is not considered load displacement."

These paragraphs seem to conflict with each other. The first paragraph says electricity generated from in-door agricultural waste is allowed; however, the second paragraph says electricity generated from bioenergy (where the common fuel source is agriculture related waste) is not. Can you please clarify this conflict?

G) Can you please provide examples of each of the following as it relates to indoor agriculture:

- waste heat;
- waste power;
- waste by-product; and
- waste gas.

H) Below is our feedback regarding the scoring of the program categories:

1) <u>Potential Impact</u>: With respect to project team, we feel that this category should be ranked 4th highest weight compared to others. Recommend 20 points.

Given the immediate need to see tangible reduction in electricity consumption, this category should be based on quantitative benefits. The highest level of points should be awarded to projects that demonstrate the lowest ratio of dollars funded by the IESO over the total number of kwh of reduced demand the project was able to demonstrate during any 12 months during the programs 36 months from demand levels that were recorded during IESO identified critical hours in previous years and or from future demand that would have been recorded during IESO identified critical hours if the project was not installed.

In addition, we recommend that extra points be awarded if a project actual proves to reduce greenhouse gases and other air emissions.

And

2) Market Capability Building Impact:

Since the concept of the IESO funding program is innovation, we feel that this category should be allocated the 1st highest weighting compared to others. Recommend 35 points.

In addition, the rules should specify that novel should be a "new solution" and not one that is already used in the operation of greenhouses in Ontario. For example, CHP and diesel are already employed in many greenhouses in Ontario. CHP has established itself in the greenhouse industry as a viable option especially considering that CHP provides a reasonably consistent base-load electricity output matching well the consistent electricity demand for year-round grow lights and provides for a consistent heat and CO2 load that greenhouses also need. Funding for CHP projects or a more efficient CHP project should not be considered novel or 'state of the art'. Control software for an individual CHP system that is similar to what is already out there in the Canadian marketplace should also not be considered novel.

3) <u>Project Team</u>: With respect to project team, we feel that this category should be allocated the 6th highest weighting compared to others. Recommend 10 points.

The team is important, however, we do not understand why more points would be awarded to projects that include a LDC partner. The LDCs through their unregulated affiliates are working to develop their own proposals to the innovation fund. If there are any points awarded for LDC involvement, the IESO should allocate 100% of those points if the project has completed the preconsultation with the LDC in regards to the connection of the project to the local grid.

4) <u>Funding</u>: With respect to funding, we feel that this category should be broken into 2 categories.

A) With respect to this questions, we recommend that the answer to this question should be "pass / fail".

Has the project secured the funding required to complete the project?

Considering the IESO's interest in seeing multiple partners involved in the project and the fact that any innovation project includes learning and know-how, having one single corporation or company that is organized to fund the entire project is not a realistic expectation. Furthermore, as with all innovation projects, it is reasonable to assume that some of the funding for the project has not been completely secured, or is conditional, especially in the case where other government funding sources are being sought after. As a result, standard financing commitment letters with commercially reasonable conditions accounting for 50% of the total amount of non-IESO funding should be evaluated as a "pass". This same requirement is used by NRCan in their procurement initiatives.

B) With respect to the following questions, we feel that the answers should be allocated the

5th highest weighting compared to others. Recommend 15 points.

Does the funding satisfy IESO leverage requirements? Does the funding appropriately allocate risk between the proponent, partners and the IESO?

There are many different proposals that can be expected with many different requests for funding from the IESO. In addition, there are many different ways in which the stakeholders can share risk. We would recommend that 10 points be awarded for a proposal that ties the provision of funding from the IESO to successful operating benchmarks and not to development milestones and/or construction and commercial operations milestones.

In addition, the IESO maximum leverage of 75% of the Eligible Costs for the project seem seems reasonably; however, we would strongly recommend that the IESO consider increasing the maximum funding limit of \$1 million to \$2 million for a single technology project if it is considered warranted by the IESO.

5) <u>Project Purpose and Outcomes:</u> With respect to project purpose and outcomes, we feel that this category should be allocated the 3rd highest points compared to others. Recommend 25 points.

This category ties into the project design in that the demonstrated outcomes will match with the overall project design and the needs identified by the IESO. The IESO needs are clearly explained so the rest should be straight forward to articulate. The outcomes will also tied into what level of risk is the IESO taking with respect to a proposal, which would be specified in Section 4B above.

6) <u>Project Design</u>: With respect to project design, we feel that this category should be allocated the 2nd highest weighting compared to others. Recommend 30 points.

Project design is obviously closely related to innovation and also addresses the needs of the IESO, which are the top 2 reasons for moving forward with the innovation funding program for indoor agriculture. The IESO needs are clear based on the IRRP report and as a result, there is little ambiguity in what the innovation project should be designed to do.

For example, if the project design is to provide [peak shaving or other category] (i.e. moving kW and kWh from one time of day (peak) to another time (off-peak)),

there may be a immediate benefit to the grid with this solution, but it does not provide a long term solution because as more and more greenhouses add lights, especially those that are used continuously year round (i.e. cannabis), the total kW and kWh consumed for all hours in a given day is going to increase eventually putting constraint pressure on the off-peak times that would also be used for peak demand shifting. Demand during morning hours (peak) that is shifted to later hours in the day (off-peak) will creating a demand reduction during the IESO critical hours noted under this current innovation funding program; however, as demand during each hour increases with more year round lighting, the demand in later hours is also going to ramp into system limits if too much demand from the morning peak hours is moved to off-peak hours. From our understanding, grow lights use between 500 kW to 1 MW per acre. The average size farm in Leamington/Kingsville is at least 25 acres. Cannabis alone uses lights year round so it will take only 4 average size farms adding year round lights to add an additional 100 MW increase in demand. See attachment for illustration on how off-peak hours are also likely going to become constrained over time.

7) <u>Local Impact</u>: With respect to local impact, we feel that this category should be allocated the lowest points compared to others. Recommend 5 points.

We recommend that out of the 5 points allocated to this category, 5 points should be awarded to the area where there is the greatest system benefit. We looked into all of the areas that the IESO suggested have indoor agriculture and may have electrical connection constraints and in all of the IESO IRRP reports, we found that there are no areas other than the Leamington/Kingsville area facing constraints. So in reality all of the funds should be allocated to the Leamington/Kingsville area. With this reality in mind, there is not likely to be much diversion in project locations and thus, points for local impact should be the lowest compared to the other criteria.