1. From the presentations and discussion over the last two days it is clear that if British Columbia is going to increase its electrical energy production better planning is required to ensure that the best projects are selected, and built where they best fit, and that they be as clean and green and be built as cost effectively as reasonably possible. There have been suggestions that an effective way of reducing electricity demand is to price it higher but I don’t believe any of us are suggesting that the cost of creating new generation should be increased by deliberately engaging in creating facilities that are not cost effective. Clean and green will cost more but there is no justification for increasing development costs beyond meeting these objectives.

We need to address the question: who is going to do the planning? I have some suggestions and will get to that in a moment.

2. One of the speakers yesterday emphasized the urgency of reducing GHG emissions substantially and very quickly if we are to avoid reaching the tipping point beyond which serious and seemingly irreversible climate changes will unfold. Ian Gill pointed out that building clean, green energy projects in BC in small communities and even larger ones is good policy, but that it will not make much of dent in global warming in the time frame of the approaching tipping point. Having been involved for most of my professional career in planning, designing and supervising construction of hydro plants and systems I know how much work is involved and the time and effort it takes to deliver finished projects on a large scale. The only way I see of decreasing Canada’s GHG emissions fast enough to meet the tipping point challenge is to shut down operations like the Tar Sands and other major oil and other energy extraction projects and to do that right now. Rushing to build RoR and Wind Power projects without proper planning is not going to do the job and will not result in an efficient and effective provincial electricity system. Planning has to come first.

3. Now, the question: who is going to do the planning? The IPPs can’t do it. They are dealing with specific projects, not the system as a whole.
**What about the government?** Planning a provincial electric energy supply system and its projects is not just a task of fitting pieces of a puzzle together, and solving conflicts. It involves dealing with a vast amount of geological, hydrological, climate and engineering information, data and analysis as well as economics and finance and requires the organizing and supervising of experts in all these fields working together as a team on a continuing basis. Governments are not set up to do this well. Furthermore governments, of whatever stripe, are hampered with short term political wishes which clash with long term planning. **Governments can set general objectives but are not well suited to doing the planning.**

**What about a team of those here at this symposium?** We have an interest and the ability to provide important input in fields, in which some have world class and unique expertise. We represent public interest. We have fragments of the expertise required but we don’t have the proven leadership and track record nor the team cohesion and probably not the large team management skills required. **We could serve as plan reviewers, but we can not take on the planning.** This needs to be done by an integrated organization that has the breadth, depth and authority to cover all aspects of the planning task.

**The only organization that has this breadth and depth is BC Hydro.** They may assign some parts of the work to consultants but they are practiced at keeping the overall task under their control. They need, of course, to consult the public widely and wisely and through adequate liaison keep the government, but also the public, informed on their plans and planning. **BC Hydro had this responsibility not too long ago, so it would not be a new responsibility for them.**

4. **To the question: what would be a reasonable way of proceeding to develop additions to BC’s electricity supply that are renewable and as green as possible, while keeping costs as low as possible? My answer would be:**

First, place planning squarely in the hands of BC Hydro with the instruction that it develop plans, on a continuing basis, to provide BC customers with energy developed from renewable sources to the extent possible and that the additions be as green as possible while keeping costs to consumers as low as reasonably possible.

Then, require that Hydro through their planning produce a list of planned and costed projects that could be added to the system in
stages to provide the necessary energy and capacity; include in those plans projects that are renewable and as green as possible; list also projects that would be logical choices for technical and cost reasons but with no requirement for being green; and further projects that are neither green nor based on renewable resources; then calculate the premiums that would have to be paid for selecting the renewable options and the renewable plus greener options; make these premiums known to the consumers, and the public; then choose the renewable greenest feasible options.

In practice this approach would probably be best used to report on premiums resulting from choosing between groups of projects and necessary transmission line connections as well as for comparing individual projects. Through the transparency that this approach would provide consumers would know and take pride in what they are paying for rather than have this hidden in energy rates along with costs incurred due to lack of proper planning, high borrowing costs and suspected windfall profits. The overall result would be energy supply additions that would be renewable, as green as possible, at the lowest reasonable cost.

5. **On the question of Private vs Public Power there are some facts as well as political philosophy to consider. The facts are:**

The cost of developing IPP-owned facilities will be considerably higher than the cost of developing government-owned facilities. The reasons for this are:

Government-owned utilities can borrow the massive funds required at lower interest rates than private developers can. Over the long payout period (40 years and more) this difference becomes very large. This is a prime reason why most electric power utilities in Canada and in much of the world are state owned.

Another reason: Due to the large number of bidders responding to BC Hydro’s call for additional energy supply the probability of a bidder being awarded a contract is low. In this circumstance the bidders cannot afford to undertake all the site investigations, especially subsurface investigations, required to produce finite designs on which cost estimates can be made with confidence. To cover the risk of being faced with their worst case construction difficulties scenario they must add substantial contingencies to the estimates on which they base their cost of the energy that they would deliver to BC Hydro. If their
worst case transpires their costs will be covered. If it does not they reap a welcome extra profit, which can be substantial. In contrast, if BC Hydro were developing the same project it would have in its planning process selected the most promising projects and would be able to undertake the site investigations with a much higher degree of confidence that the projects will be built.

It is very hard to make a case for privately-owned power development on a cost effectiveness basis. Having private developers rather than a state-owned enterprise assume development risk has been used as an argument for private development. For this to function private developers would have to be willing to suffer losses on a project after project basis, which is unrealistic. To survive they must recoup their losses by making up what they lost and more on the next project. Ultimately the risk is passed on to and paid for by the energy consumers in the rates that they are charged.