Remarks by Don MacKinnon, President of the Power Workers' Union, to the Transmission/Distribution System Futures? Session, Distributed Generation and the Future of Ontario's Electricity Grid Conference, October 26 & 27, 2008

It is a pleasure to be here this afternoon to talk to you about the Power Workers' Union's ("PWU") views on the government's proposed distributed generation policies and what it will mean to Ontario's Electricity Grid. I say the government's policies because their directives are setting the agenda and the mandates of the Ontario Power Authority ("OPA") and the Ontario Energy Board ("OEB") are to make them work. Both organizations face tremendous challenges to make this happen.

This session, as described in the conference agenda is devoted to alternative visions of the Ontario electricity grid. The question for the panel is "Will it (or should it) be the traditional model of large-scale generating plants located a long distance from load, or will it be more focused on the distributed generation model with generation embedded within large load centres? However, let's not forget that government policy and supply directives have already put us on the latter path. The real question is: how far should we go down this path, at what cost to consumers and for what benefits?

My remarks will touch on the key issues that the Power Workers' Union believes need to be addressed with regard to the government's policy on the development of Distributed Generation ("DG") to ensure Ontario's electricity grid continues to operate in a reliable and affordable manner for the benefit of all Ontario consumers.

My remarks will address four subject areas:

- To begin, I want to briefly talk about what we in the PWU see as a fundamental problem with the whole Integrated Power System Planning ("IPSP") process as framed by government policy and how this permeates everything that happens as we drill down on specific policy issues related to distributed generation and the future of the grid;

- Next I will offer up some key principles that the PWU strongly believes should be driving the whole IPSP process;

- I'll then briefly present what we see as some of the key issues that face our industry as we work to quantify the benefits and costs of DG and the best way to allocate them among the various stakeholders. Solving these challenges will allow us to develop a future transmission and distribution grid for the province that ensures safety, service quality, reliability and affordability ; and,

- Then conclude with what the PWU believes would be a much better approach to addressing the question this session examines.

We all know how critical reliable and affordable electricity is to the competitiveness and success of Ontario's industries and businesses. Organizations like AMPCO, the Association of Major Power Consumers of Ontario and the Ontario Forest Industries Association have been driving this message home over the last several years. Their analyses show that Ontario has been losing its competitive edge with respect to industrial electricity pricing and that this has been a factor in plant closures and corresponding job losses along with a rising Canadian dollar and stiffer global competition.

Some would say not to worry because Ontario's economy has been transforming, with the service and financial sectors playing a bigger role. But let's not forget that a lot of those service and financial jobs rest on the people working in the manufacturing sector.

Yet, Ontario has a planning exercise underway to develop an electricity plan that does not reflect an integrated long-term vision and strategy of the economic, social and environmental direction that must be taken to sustain our standard of living and economy. Three questions illustrate the concerns of the PWU: How much manufacturing do we need in this province to sustain jobs in Ontario's service and financial sectors? We are a province that relies on imported oil and natural gas to keep the economy humming − why isn't Ontario developing an integrated energy plan that includes oil, natural gas and

electricity? What energy advantage does Ontario need to compete globally and how do we create that advantage?

Instead we have an electricity planning exercise that has been driven by politically-motivated directives. The planning structure is hobbled by a mandate that requires "post-directive" analyses and one that does not tolerate analyses of the directives that set the foundation of the plan.

The PWU has been an active participant in the Ontario Energy Board consultations directed at streamlining its policy initiatives on Distributed Generation. Last July, the PWU submitted comments to the OEB on DG related rates and connection issues. Earlier this month, we submitted our comments to the OEB on developing a standard methodology for quantifying network system benefits of Distributed Generation. Correct quantification of these net benefits will allow for the sharing of system benefits with the DG proponent and provides incentives for DG.

From the outset of the DG consultations, the Power Workers' Union has advocated the adoption of a set of underlying principles that to our mind should be guiding the discussions.

First of all, we think it is premature to set such an aggressive pace on Distributed Generation. At this point in time, our policy makers are not in possession of readily accepted methods, models and data to define an approach for determining DG costs and benefits. Nor have our policy-makers spent enough time and effort investigating the lessons learned in other jurisdictions that are much further down the Distributed Generation road and how this might be applied to Ontario's situation.

Most of all, we need to ensure that DG policies do not undermine the value of the typical large scale generation infrastructure that has served this province so well to date.

As well, these policies should not negatively impact the financial interests of Ontario's Local Distribution Companies ("LDCs") and transmission companies. These companies are already juggling concurrent priorities such as infrastructure replacement, system expansion, CDM delivery, and new smart metering. And finally, the ratepayers, who built the system Ontario has today, should not be exposed to unnecessary rate increases.

We believe that incentives should only be provided for economical DG. If the benefits are not objectively quantified, DG owners will receive the wrong price signal and be encouraged to develop uneconomic projects that consumers will pay more for than for economic generation projects. We must therefore avoid implementing incentives in rates or connection costs based on imprecise and questionable economic estimates of DG benefits that are subject to considerable uncertainty.

The PWU also supports the cost causality principle − that is DG should not be getting a free ride.

DG policy should not create unfair discrimination between generators or between customer classes and as such similar policies and guidelines should apply to standby rates and connections for DG as for other generators and customer classes.

Developing a standard methodology for quantifying the benefits of DG for transmission and distribution systems is directed at sharing those benefits with the Distributed Generator through reductions in distribution standby rates and to offset connection costs.

The issues that need to be addressed before an appropriate methodology for DG can be developed and implemented are numerous and complex.

As I noted earlier, the methods, models and data that would readily and simply quantify the costs and benefits of DG and in that would reflect the locational and technological impacts related to the transmission and distribution networks do not exist at this time.

The benefits of Distributed Generation are dependent upon a host of factors, including location, timing, DG performance, fuel supply and technology type. When these factors are not ideal, DG can have the opposite of its desired effect: that is increased investment in transmission and distribution, reduced reliability and increased overall cost to the ratepayer.

If you had the necessary models and data, you then need to allocate the DG costs and benefits among the different stakeholders. This brings me back to one of the principles, I mentioned earlier − once the costs and benefits are identified and quantified their allocation should accrue to those who caused them.

Some barriers to DG have already been removed. Over a year ago, a discussion paper prepared for the OEB on Distributed Generation and Rate Treatment noted that the Board had taken measures on several fronts to remove regulatory barriers and provide a more supportive environment for DG projects. These include amendments to the Distribution System Code, simplifying the generation license application, waiving or reducing registration fees, and one-time license fees.

In addition, incentives for DG have been in place through the OPA's 1300 MWs of small Renewable Energy Standard Offer Program, ("RESOP") projects.

What we don't need is for Ontario to be dependent upon a haphazard estimate of DG potential within the province. For example, a recent consultant's report done for the OEB estimates that there is another 1,000 MW of incremental DG potential in Ontario. The consultant derived this new figure by applying the ratio of US DG market potential of 28,300 MW to the US total peak load of 760,000 MW to Ontario's peak load of 26,000 MW. The PWU is concerned that this remaining potential has been grossly overstated, because the Report considers the 1,300 MW of RESOP contracts to be separate and unrelated to Distributed Generation. The Report considers RESOP resources not to be indicative of typical DG resources as they are driven by RESOP pricing and renewable resource potential.

On the technical front, distribution and transmission operators face a number of well known challenges:

- the management of power flows − ensuring that thermal ratings of circuits are not exceeded for both normal operating conditions and specified contingencies;
- voltage control − it is not always the case that DG will provide voltage related benefits. The value of DG as a provider of voltage support is dependent upon the design, loads and local generation on individual feeders and the type of DG technology.
- System fault levels − ensuring that fault levels remain within the rating of equipment at all times.

Deferred transmission and distribution investment is considered to be one of the most significant benefits of DG. As the OEB's most recent report correctly notes "*transmission projects can be deferred only if the need date for the investment can be*

deferred by DG." Transmission system investments which are not driven by load growth cannot generally be deferred by DG. Examples include asset replacement, interconnection upgrades, and reliability driven investments.

The PWU agrees wholeheartedly with this observation which raises a very important question − how will a transmission planner be able to practically and objectively attribute the investment needs to either load growth, or reliability, or interconnection upgrades, or all of them?

The distribution planner faces the same conundrum − how do you make the investment decision taking into account potential, but uncertain DG benefits that are beyond the control of the distribution planner to ascertain whether they will materialize or whether they will be attributed to a specific DG or groups of DG when we lack the data and experience required to develop a methodology to do so?

What about reduced transmission and distribution losses? The cost of these losses is recovered from customers through rates. The challenge once again is how to accurately quantify the DG benefits at this point when further work, data and experience are still required to develop a methodology to do so.

In designing a new grid system for the province we should not forget the model we are starting with and the role geography and past planning decisions have played in creating it. It is critical that we maintain that backbone before too much experimentation occurs with the new and untried technologies.

There are a couple of other issues that are worth mentioning:

- It will be important for the DG cost/benefit model, when applied to combined heat and power projects ("CHP"), to assess those costs and benefits under a number of operating scenarios e.g. different power and steam production outputs.
- Just this past week, the OPA issued an RFP for the services of an Urban Planner to assist the OPA in the evaluation of current zoning, land use patterns and demographics of the South West GTA region and the development of protocol for the analysis of local zoning by-laws, land use patterns and demographics which can be used in the evaluation of potential energy development sites throughout the province. This much needed expertise will

be critical if DG projects are to be brought in service when needed and for the estimated benefits to be realized.

- Another consideration is the role of First Nations in the approvals process for DG projects affecting their interests. Steps must be taken to encourage their timely support for such projects as well.
- Last, but not least, Ontario's future transmission and distribution system must be responsive to the evolving needs of consumers wanting to participate more fully in CDM initiatives. Without this participation, the investments this province has made in smart meters will be wasted. Again, appropriate methodology, data and experience is required to assign the costs and benefits to the various stakeholders.

While DG is the path that the government policy pursues, incentives for DG must ensure that the DG that is developed is economical and maintains service quality, reliability and safety at reasonable rates for Ontario consumers. To the extent that economic DG potential is exhausted, large scale generation must be prioritized over un-economic DG.

The bottom line for us − it is premature to include DG in the rates and/or connection fees. We need more information, analysis and experience before taking that step to avoid the inadvertent encouragement of non-economic DG.

In conclusion, for Ontarians to continue to have safe, secure, reliable and affordable electricity in the future, our decision-makers need to adopt a different approach to planning this province's electricity system:

- Ontario has a hybrid system now and likely for the foreseeable future. That hybrid system allows for better control over electricity rates to the benefit of Ontario industries, businesses and consumers.
- The hybrid system is the system we have, we need to build on what works well and improve it.
- To have DG that benefits all stakeholders, we must ensure that it is economic and that any quantification and allocation of the costs and benefits is done in a fair and transparent manner.

- Going forward Ontario will need a “smart grid” to integrate new technologies and to maintain reliability with neighbouring jurisdictions that are taking similar steps—but lets develop a “smart” strategy and timeline for getting there.
- Hydro One and Ontario’s LDCs face significant financial challenges given new initiatives they must manage − let’s make sure they have the resources to deliver on their accountabilities.
- Streamlining approvals for priority transmission and distribution projects is critical, and finally
- With respect to DG − set reasonable goals, move forward with the right knowledge and experience and focus only on projects that make economic sense.

Thank you for your attention.