



The Storm of Uncertainty

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"Building to the Boom:

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The IPPSA annual conference is always a "look forward to" event for industry players and observers. Yes, the setting here at the beautiful Canadian Rockies at this excellent facility, are attractions in their own right. But no conference is going to attract the number of attendees and the quality of attendees year after year like IPPSA does without great program content and great organization. 500+ is a big event by any standard.

This has become a superb forum to discuss the issues of the day that are confronting our industry... and the ones that are coming at us. Its here, in the formal sessions, and all the informal chats that are a hallmark of IPPSA conferences, where one can get a sense of what is coming at us in the light at the end of the tunnel – or the light of a speeding train heading our way. Given the two significant Alberta and Federal environmental announcements as recent as late last week, I am sure the IPPSA halls will be even more abuzz with conversations.

Take a quick look through this year's program and it's easy to tell why we have all made the effort and cleared our schedules to be here. Once again, IPPSA has sensed our industry well with their theme – 'Building to the Boom'. It's provocative enough to attract those with industry perspectives. And close enough to the mark to make it relevant to all of us. So, let me join those who have preceded me here at the podium and congratulate IPPSA for a job well done...and express my appreciation for being invited to be part of a significant and worthwhile event for our industry.

I have to tell you that this year I definitely made one mistake when approached by IPPSA to participate. Instead of talking about the Generation Company of Tomorrow, I should be in the audience listening to others and taking all their great ideas back to my Boardroom. Just one look at the audience in the room and I know there are literally hundreds of great views out there that I could learn from.

My hope today is to help to stimulate those discussions so that I can pick up on them as the conference goes on.

IPPSA has focused our agenda on the single biggest issue facing our industry. How is it going to meet the inexorable, unrelenting growth in the demand for electricity? And how can it possibly do that when at the same time the amount of uncertainty in our industry is growing. How will new environmental rules impact us? How will they be applied in the future to existing plants? Will sufficient transmission capacity be built in time? And, at what costs? Will new rules and regulations further reduce returns in our industry? With that backdrop, I've called my presentation "The Storm of Uncertainty".

It was about 10-15 years ago that our industry faced another era of uncertainty. Then it was the race towards less regulation. But back then we had blind faith in feeling confident about the future. It reduced many of our concerns about the uncertainty. Probably too much. Our HUBRIS was rewarded with one of the steepest and worst economic declines ever for our industry. It's unlikely the industry will repeat that mistake. However, that caution could also further delay current capacity.

We may not be high tech. We may not be a high flyer when it comes to growth. But as sure as the Rockies will be here a decade from now, the absolute amount of electricity to be consumed in North America will be higher than today. We are the world's biggest tortoise when it comes to racing.

There is no stopping the current steady decline in reserve margins unless our industry – and our public policy makers – act. All of us need to do that very smartly indeed, given the significance of the issues facing us. The storm of uncertainty is upon us.

As always, a good first step in determining what to do about the future is to learn from our past. As I said, it was only a decade ago that our industry faced a similar need to build. In hindsight the industry didn't handle it well at all. It was not a job well done. In fact, if you look at the amount of money lost by the industry and the amount of shareowner equity wiped out during that period, it would rank as one of the biggest financial messes ever. The most important question of course is "why didn't we have more foresight back then... and can we have more foresight this time?"

I think the industry lost sight of a lot of basics in that period. Risk/reward ratios were thrown out of the window.

Building to the Boom. It sounds exciting. It sounds challenging. It is! But, a lesson learned from a decade ago is that "boom" in our industry is a lot different than "boom" in demand in others. We are the steady-eddy industry. Common sense can't get lost. A decade ago the industry was building three to four times annual demand growth. At one point there were enough announced plant projects to equate to 25% of all the installed capacity in the USA – what were we thinking?

We also got carried away with technology. Natural gas plants were coming of age. You could build them quicker, smaller, less expensively and with less environmental footprint than any other fuel at the time. The builders forgot one problem – you need low cost fuel to run them. The fuel turned out to be expensive. Availability became questionable. In an industry known to want stability, volatile fuel prices became an unmanageable and an unwanted.

And of course back then everyone had visions of sugarplums when it came to pricing. Many price forecasts had pricing with at least 3 figures in them. For today's markets (I wish) the reality is consumers and industry can only take price hikes in small doses.

Each of us has our learnings from the last "boom". Some will apply as we look forward. Some won't. But, shame on our industry if we make the same mistakes again.

Certainly as we sit here in beautiful Banff in March 2007, the challenges for our industry are in many ways. Back then it was a feeding frenzy.

I've heard the oil & gas sector talk about the storm facing them in terms of falling prices, royalty reviews, rising costs, and looming environmental penalties. Our portion of the energy industry is also facing its storm of issues. The "boom" is there. Capacity is needed. It will happen. But, these storm factors could make it quite a bumpy and sickening journey.

However, if led properly, and dealt with well, we can smooth the waters somewhat.

Let me touch briefly on our storm factors. I doubt any of them will be new to you. But, it's important I think to lay them out, put them in context, and think of them as a totality – and how that can impact our decision-making today.

First, regulators are probably less inclined to give free reign to the industry, and rightly so. They'll ask for more studies, more reviews, and more public consultations. Planning horizons need to consider these factors. That could exacerbate short-term supply issues, but I don't see much relief here. The last time our industry struggled, it cost many governments an election. This time around, officials are awake and on watch. And rightly so.

With regards to pricing, realism abounds today... at least for now. If anything, forward price curves may be erring on the downside. That's good discipline. But, they also make it more difficult to justify expensive new plants facing environmental cost uncertainty. All of us are grappling with this issue. The returns in our industry aren't great. For most of us maintaining returns above our cost of capital is an everyday struggle. That doesn't leave much room for risk. So, getting the price perspective right is pretty crucial. Right now it's my belief that negative perspectives on pricing are more of an impediment on new projects, than a driver of them. Hopefully that will change and actually be encouraged by policy makers.

Our technology options are more complex, and more varied. Each is seen by some special interest group as either a road to environmental Armageddon, or the only **possible** option to save our environment. Three years ago all I heard about was the bright future for IGCC plants. Today the potential for retro-fitting technology must be seen as an equal option. The landscape is changing quickly – adding fury to our storm.

No fuel option is without its problems today.

If you see nuclear as an option, and I believe it must be on the table in many jurisdictions, the obstacles are huge and well laid-out. I doubt if there are many in this room that see it having an impact much before 2020 or even 2025.

If you see renewables as an option – and again I see them as a must – it's doubtful we'll find many people in this room who would see them being greater than 10% of our supply equation by 2025.

If you see hydro as an option, you also clearly see the physical limitations on it.

Natural gas remains a big unknown. Will there be an adequate supply? At what price? Will the price volatility abate? Will LNG happen in sufficient quantities to make a difference? Today, most of us are feeling that uncertainty. It's a tough situation to be in if you want to make natural gas your fuel of choice for your electricity fleet.

And what about coal? For most of North America it remains the lowest cost, most assured, more abundant form of carbon. Not using it as a fuel will cause as many issues as using it. Simply put, our suppliers, our industry, and our policy makers, are going to have to work together to develop the technologies we need to be able to use coal without damaging the overall environment more than any other fuel will. So, which technology would you bet on, and when? There is one common link to all the fuels – today, a new megawatt of capacity is a lot more expensive than it was. Another driver of our storm.

On top of the technology storm is yet another challenge - the environment. That is quickly moving from its position as a looming challenge to one right on our doorstep today. Over

the last six months, I have met with more Federal and Provincial elected officials on this issue than I have over the past 5 years. I've already commented on last weeks Alberta Provincial and Federal initiatives.

Everyone related to our industry is clearly feeling this pinch.

If you are a politician, every voter poll shows the environment is their #1 issue. And, voters all want the same thing. Do something to show me the environment will be better in the future. And by the way, don't you dare cost me a lot of money, especially all at once. Special interest groups have their own agendas. And, they almost always only involve one half of the balance sheet equation.

Generators and politicians have to deal with both sides.

If you are a regulator, generators are yapping at you to speed up your approval processes, clearly set the rules, and to get on with building transmission. At the same time, your elected bosses generally aren't always ready to provide you with all the public policy decisions needed to frame these decisions.

If you are one of the big turbine and boiler suppliers, you are trying to manage resources between huge demands in Asia for current components and their potential for future environmental retrofits with North American demand today for new environmentally friendly front-end technologies.

If you are a Director on a Board of an electrical generator, you are under pressure to grow, but not to take too many risks – remember the last boom – just as future risks are more numerous and unknown than ever.

And if you are management, you should be here at IPPSA trying to steal all the good ideas you can.

So what are the implications for generators? I think they are significant indeed. Certainly big enough to make us all pause. Unfortunately the demands for more power are equally

pressing. Balancing these two forces without getting off track like the industry did less than a decade ago, won't be easy.

For example, would you build a new coal plant without some form of government support for an untested or more expensive technology? Even a super critical pulverized coal. Today that plant can cost 50% more than it did 5 years ago. It will also last 40 plus years. Will governments allow it to run for that long, or force it into constant and costly retrofits to achieve ever increasingly aggressive emission standards? If so, the plant may never be profitable and should not be built. These are the types of tough calls facing all of us.

They highlight the storm of uncertainty. The choices we make are critical. Decisions to ensure new supply before 2015 are needed today. How can one possibly see through this storm and chart a course to clearer conditions ahead. My plea to policy makers in this regard has been consistent for many years now. The solution to this 'chicken and egg' situation is actually quite clear. Decide on the public policy rules and then industry will respond. Without that, the reserve margins will slowly continue to move to unacceptable levels.

There is clearly some hope of that here on the horizon. The announcement last week by the Province of Alberta is a step in the right direction. I'll be surprised if the Federal environmental policies are not clearer in the next few weeks. But, there's more public policy needed – not the least of which is to move new transmission forward. But, I'm hopeful the log jam is starting to break.

As an industry, we must also do our part, particularly as we look beyond 2015. We need to keep all fuels in our portfolio. We must aggressively start to invest in new coal technologies. Our industry is not, and really never has been, a Research & Development hothouse. Our suppliers control much of the research. They'll need help from us and governments if we are to aggressively move forward in this arena. We need to be drivers here, not spectators.

And what about the age of our fleets. Much of it is old. Much of it could be replaced in the 2015-2025 period with newer, more efficient equipment. But, there is a big price to pay for

that. The financial cycle that drives our industry is largely dependent on keeping these plants going as long as possible. It's at the end of their life that plants generate the real cash necessary to pay for their replacements. If that end of life is shortened, where will the cash come from? If prices aren't allowed to rise to offset this revenue loss, the only solution could be a return to a regulatory climate. Now that's the last thing I want to see. At the same time, I doubt very much if I'd find one person in this room, or one company, government body, or 'NGO'.... Who wouldn't say that they wanted to improve our environment, and that they were willing to step up to the challenge and the costs. But, the goals we set and the pace we set to achieve them have huge social costs associated with them. It is a cost that companies might not be able to bear. It is a cost that society itself must decide how much it is willing to pay and when. The processes to do that are either truly open markets through public policy decisions with certainty to their time frames and content, or through a regulated industry regime.

I certainly do not want to see the regulatory process take-over by default. But, unless environmental targets are set with the economic consequence well analyzed, and unless they recognize the basic financial equations this industry needs to work, and unless our industry has confidence it will be allowed to recover those costs; then a regulatory framework becomes the solution of last resort.

So, what does all this mean for the generation company of the future? Here's my list:

- It will be helpful to be in multiple fuels not only to ensure supply, but also to ensure changing environmental targets can be more easily achieved with a mix of costs and technologies.
- We will have to more carefully manage the age distribution of our fleets while carefully managing cash flow to ensure sufficient cash exists to rebuild our fleets over time.
- We will have to participate in, and contribute to P3 type consortium when it comes to CO2 sequestration, and perhaps even in new technologies.

We must take a 10, 20, or even 30 year view of results to be achieved and of the ways to get them. Wishing the industry to change quickly won't do a thing.

I've spent a lot of time today talking about storms of uncertainty. Any meteorologist will tell you that in a big storm, the key to getting through it is preparation. We now need to heed the advice of the weatherman. With that knowledge, that discipline, that focus, we can and will deliver safe reliable electricity to our customers and generate positive results for our shareholders. That, ladies and gentlemen, is the kind of "perfect storm" that I, I'm sure you, and others in our industry want to find ourselves in.

I don't doubt we'll succeed. There is no other choice for us, for public policy makers, or for our customers. The alternate is "lights out". But, it is going to take a lot of collective actions starting right now to get there. The theme of this year's conference is the right one. A boom of some type is there. The industry must build. Hopefully this year's conference will serve as a catalyst to get us all going and get us through this storm of uncertainty.