

SPEAKING NOTES FOR  
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AT THE  
  
CERI 2008 ELECTRICITY CONFERENCE  
  
OCTOBER 28, 2008  
  
CALGARY, ALBERTA

THE ROLE OF THE  
ALBERTA UTILITIES COMMISSION  
&  
ELECTRICITY REGULATION IN A CARBON-  
CONSTRAINED ALBERTA

**INTRODUCTION**

- **I'd like to address two things this morning. First, I will briefly outline what the relatively new Alberta Utilities Commission, or AUC, is all about, where we fit into the overall regulatory scheme for the electricity sector in Alberta, and what our priorities are. I'm going to do that because that's what my invitation letter to speak here today asked me to do.**
- **But then, I'd also like to spend a bit of time exploring some of the challenges and opportunities we all face in an increasingly carbon-constrained environment – and**

I'd like to do this from the perspective of the role of regulation generally, rather than the role of the AUC specifically.

## **ROLE OF THE ALBERTA UTILITIES COMISSION**

- **As many of you may know, the AUC was formed when the Alberta government separated the utility regulation functions of the Energy and Utilities Board from their energy regulatory functions, thereby creating the new Alberta Utilities Commission and Energy Resources Conservation Board.**
- **For those of you whose memory goes back some years, we are not just a recreation of the old Public Utilities Board, with its traditional utility functions.**
- **We are no longer dealing with vertically integrated and end to end electricity and natural gas companies, and of course telecom became federal years ago. In electricity, we have a variety of roles.**
- **We regulate local distribution rates and the regulated rate option for customers who do not want to participate in the competitive retail market.**
- **In the transmission sector, we regulate need, placement of transmission lines, and transmission rates.**
- **In the generation sector, we do not regulate rates. In Alberta, the competitive generation market determines electricity prices.**
- **We also now have responsibility to consider changes to the ISO rules that govern this sector. These rules generally regulate the competitive electricity generation market, while ensuring the reliability of the system. Further, through an adjudicative function we regulate where the MSA brings cases inconsistent with the fair, efficient and openly competitive operation of the electricity market, or cases of anti-competitive conduct generally, as well as breaches of rules, regulations and legislation.**
- **Note an important separation of functions: rule-making/ISO/AUC/legislature; investigation and fines (MSA); adjudication (AUC).**
- **This is a complex and diverse mandate that I have tried to sum up in a very few words. But as I said during a speech I made at the Calgary Chamber of Commerce very shortly after I took this job, there is one theme that runs through everything we do.**
- **That is the need for us to step back and remind ourselves that in our society competitive market forces are assumed to provide us and the economy with the**

benefits of strong incentives for innovation and investment to produce the prices, services and quality customers demand.

- When these forces don't, that's not enough alone to engage us but it is where governments step in. They step in to regulate where the market either cannot be competitive (such as traditional public utilities business) or when the market produces outcomes that are not considered to be in the public interest even when it is operating competitively.
- Governments also step in different ways – through economic, technical and non-market policy regulation. This in either an *ex-ante* (before the fact, rule based, as with ISO rules) or *ex-poste* form (after the fact or principle-based, competition guidelines are an example).
- There are three basic types of regulation. Economic regulation (prices, market structure, etc.) – takes the place of competition or regulates it. Technical regulation – where regulation steps in to ensure there is the necessary cooperation to make competition work (most common in network industries). Non-market policy regulation – not to emulate or take the place of competition but to ensure outcomes that competitive markets, on their own, would not produce (for our purpose today environmental is the most relevant).
- Where we come in is when governments step in to create independent regulators such as the AUC. They provide the independence necessary to assure investors and the public generally that decisions affecting their rights are made free from short-term political pressures and to insulate politicians from the tough decisions that regulators often have to make.
- So that is what guides us as we approach each and every case before us at the AUC. We ask ourselves first, what is it that competitive markets can't or aren't doing that needs us to step in and, second, what is the government policy in the relevant legislation that informs us on how we should step in and what we should accomplish? .... All the while ensuring that fundamental rights are respected and taken into account.
- As we move forward, our priorities are to ensure we have a well articulated set of principles in place, to examine new approaches from the way things have been done in the past and, where possible, to look at more efficiency and streamlining in the processes we use to arrive at our decisions.
- That's why we have initiated three reviews, one in the facilities area, one in the utility rates area and one in the markets area (which we define as the rules review and adjudicative functions).
- In the markets area we have established processes for rule review and for adjudicative proceedings, recognizing the critical difference between the two. We

**have heard our first cases and will be issuing decisions in due course, and are taking great care to ensure we establish a solid foundation for the future.**

- **The facilities area review recognizes that a lot more goes into the approval and construction of new facilities today than twenty or even ten years ago. Projects of the past used to be primarily all about financing and engineering. Now, with the demand for more consultation and attention to a number of potential impacts, the projects of today have become engineering, financing, social, economic and environmental projects. In fact, the Alberta Utilities Commission Act specifically instructs us to consider social, economic and environmental impacts.**

- **The facilities mandate and facilities review is important, as we move into a time of increased focus on carbon emissions. Much of Alberta’s generation capacity is fuelled by fossil fuel-fired plants. As these plants age and need to be replaced there is little doubt that a portion of our future portfolio mix will include fossil fuels. And as I will highlight later, the drive to add renewable power to our system sometimes creates a special need for additional transmission infrastructure.**
- **We now expect applicants for facilities approvals to come to us with evidence regarding social, economic and environmental considerations that reflect the new reality.**
- **In addition to substantive issues our facilities review is also addressing process issues to deal with an increasing focus on transmission expansion. Our processes must be fair, open and transparent. We must better explain our process in plain language, we must take additional steps to ensure people become more comfortable with hearings procedures, and we must be perceived by interveners as listening to them not just to hear their positions but to understand the concerns underlying those positions.**
- **The public must have confidence in the independence and impartiality of the AUC.**
- **Our new mandate, the bench strength we have added with a number of new Commissioners and Acting Commissioners, as well as our reviews of how we can better do our business in general, all leave us well positioned to deal with the challenges and opportunities that are evolving in this new era of carbon constraints.**

### **CHALLENGES AND OPPORTUNITIES**

- **So what are these challenges and opportunities? There’s undoubtedly a long list that gets more and more specific as you drill down, but in my mind you can probably group them into three categories:
 
  - **First, complexity and uncertainty in decarbonizing our generation infrastructure,**
  - **Second, development of renewables,**
  - **And third, the end user or customer.****
- **Before I address each of these I would like to make three points.**
- **First, each of these can be considered as both challenge and the opportunity. So indulge me if I blur the lines.**
- **Second, I don’t come with a solution or even a proposed direction for some of these challenges. They will come to us from others who examine the issues, undertake the consultations, set the policies and amend the legislation as needed**

- I have, however, outlined an analytical framework for analysis and I will try to apply it as I explore these challenges and opportunities.
- And of course it is conferences such as this one, and our other collaborative efforts that collectively, will help to ensure that we move forward together towards productive and efficient outcomes.
- Third, if there is an underlying theme or message I would want you to take away, it is a positive one. All sectors of Alberta's electricity market have the creativity and the drive necessary to address the challenges that carbon constraint poses to us. Electricity will likely be a big part of the energy future here in Alberta, so collectively we will all be called upon to make this work for Alberta.

### **Complexity/Uncertainty in Decarbonizing Electricity Infrastructure**

- As we are talking about carbon constrains and carbon regulation it might be useful to first take a moment to put our Alberta situation into perspective.
- One reality in Alberta is that Alberta has an abundant supply of coal, in fact containing twice the energy of our conventional crude oil, natural gas and bitumen.
- And that supply of coal has largely fuelled our electricity generation to date. Many of our coal plants were built as far back as the 1960s and now constitute an aging infrastructure. As investment is considered for new facilities, companies must incorporate not only existing regulations but also anticipate the outcome of still-evolving policy direction.
- So, what does that mean... as our conference program points out ... “The era of carbon regulation is upon us.” For me, being a relative newcomer to the Electricity table I asked the question, as a regulator, how do we apply CO2 standards, targets, regulations to individual generation plants...if at all?
- Here's an example of the answer I got about federal framework standards from 2012 to 2018 and beyond....
- *The key is to break up the time bounds in the context of when built...if built after 2004 and before 2011, it is a supercritical-based clean fuel standard for coal-fired electricity, with a two percent annually increasing target, but this target starts in year four...and if built in this period and built to be capture ready, the standard is suspended until 2018...but the two percent still applies.*
- *For a coal fired facility built after 2012, the clean fuel standard is based upon natural gas...and then in 2018, this same facility would have a clean fuel standard set based at*

*CCS...the facility built to capture-ready in 2012 does not have the clean fuel standard for natural gas apply to it, but in 2018 the CCS-based standard applies.*

- Clear?
- So, what do we have provincially, I asked?
- **New coal-fired plants in Alberta require provincial compliance to BATEA standards, Best Available Technology Economically Achievable. Alberta was also the first jurisdiction in Canada to set legislated targets to reduce GHG emissions from specified large emitters. This legislation requires new plants to phase in a 12 percent reduction in emissions intensity, after the establishment of a three year baseline. beginning with a two percent reduction in the fourth year and ramping up from there.**
- Ok, that's better, I understand that.
- Are there others, municipal zoning bylaws for instance?
- **The point is, if you hearken back to the comments I made just a few minutes ago about how the considerations involved in the construction of new facilities now include many more components, the same is true for the decarbonizing of our generation infrastructure.**
- **Entirely new layers have been added to the regulation of electricity generation and transmission in Alberta, building from local to provincial to national to international complexities.**
- **And nobody is entirely certain at this point how the rules of the game will change as these different levels of complexities interact and influence each other.**
- **To name just a few... the upcoming IPCC, International Panel on Climate Change, conference in Copenhagen next year with its focus on the urgent need for a new climate change protocol, the move by some jurisdictions to specify low carbon fuel content and these implications for Alberta, our own evolving standards and strategies, the current world economic downturn....These all layered upon each other and to not advance in lockstep. Neither are they "symmetrical" across provincial or national boundaries and so their uneven application can create distortions in larger geographical markets than a province.**
- **Complexity and uncertainty translates into risk. Energy companies know that a key challenge for them now is to stay abreast not only of emerging market rules and trends, but also of emerging environmental regulatory trends.**
- **All of this is an example of non-market policy regulation and, as I just alluded to, to work, needs to be applied symmetrically to all market participants.**

- For us as a regulator, we need to understand how we are to take these standards into account in our approval processes.
- We need to know where our responsibility as a regulator to consider the effects of generation plants on the environment starts, and where it stops....and when it is responsibility of others. We really need to avoid overlap and multiple processes.

### Renewables

- One challenge for the electricity sector in Alberta is to how we can incorporate the addition of renewable and alternative sources of energy into our system.
- When you mention renewables in Alberta it's wind that leaps to most people's minds, although this category also includes many other sources as well.
- There's no doubt that Alberta is one of the best places in the world to harness this renewable low-carbon resource.
- So why not just do it?
- Well we actually have, to a good extent.
- Alberta has about 1,600 megawatts of generation capacity from renewable sources. That's already about 13 percent of our total. And, already a leader in wind generation with about 500 megawatts (four percent) connected, there is the potential for another 3,500 from estimated investment coming in the next decade.
- Right now the AUC has an application before it for a 240kV line from Pincher Creek to Lethbridge to connect wind power in southern Alberta to the provincial grid. We have already concluded the pre-hearing and are scheduled to begin the hearing the first of this December. We have also just wrapped up a joint federal-provincial hearing in Fairview for a run-of-river hydro application known as the Glacier or Dunvegan project.
- Theoretically wind power can come on line far quicker than other sources such as nuclear, or without the extensive technology "lag" of CCS, but it does not come as easily as many people would believe. It comes with its own unique set of challenges.
- These challenges, in turn, come from two limitations.
- First, the best sources of renewables, particularly wind and hydro, tend to be found far from load and so will generally require fairly extensive new transmission lines to integrate significant amounts into our capacity. The challenges posed by this relate

to the cost and the encouragement of new transmission investment, plus the important issues raised for potentially affected landowners along these lines.

- **Second, wind (and to some extent run-of-river- hydro) is both intermittent and unreliable. It is difficult to predict and often peaks at times when we need it the least. This means it requires additional reserves, is typically not baseload, creates additional price volatility, reinforces the need for interconnections, and tends to increase the need for reliance on imports.**
- **The “front end” of these challenges falls to others outside the AUC and I expect you will hear more discussion around them in the session later this morning. At the end of the day, however, approval of these facilities falls to us. And after hearing all the evidence, the balancing of private rights with the public need will determine the outcome, including whether to approve and, if so, under what conditions. This is non-market policy regulation.**

### End User/Customer

- **The final area I wanted to touch on just briefly, as both a challenge and an opportunity is that of the end user or customer.**
- **A carbon constrained world means a higher price on carbon. A higher price for carbon in a primarily fossil-fuel base economy can translate into higher prices for the end user.**
- **One of the challenges the electricity sector must address is how we can best interact with the final user. Albertans have made it clear that although they expect industry to reduce their greenhouse gas emissions, they also want to do their part.**
- **As increased price signals for carbon filter through to end users in the form of higher costs there will be more customer demand as to how they can compensate, how they can either use less electricity, or use it smarter.**
- **What opportunities are there for us to allow Albertans to manage their use of energy better?**
  - **Less (conservation)**
  - **Cheaper (efficiency)**
  - **Greener**

### Smart Grid

- **Now I know that talk of the smart grid as “just around the corner” has been with us for some time.**

- **Smart grid means different things to different people, but essentially it uses two way communications and existing technology to upgrade the electric power grid so that it can operate more efficiently and reliably as well as support additional services and tools for customers.**

- **Development of the smart grid faces a number of challenges because we are essentially looking at a whole new kind of electricity infrastructure. First, an effective smart grid will have to incorporate high levels of what is termed distributed intelligence, essentially imbedded computers, allowing them to become smart interactive resources. Second, there must be standardized communications protocols with high operability levels through an advanced metering infrastructure. And third, there must be integration at multiple levels – the distribution, our management systems, grid operation and planning.**
- **In addition to some of the obvious advantages on a large scale, the smart grid also has its biggest advantage as a key to demand side management. It has the potential to drive efficiency to new levels, and efficiency is one of the best ways we can control our carbon emissions.**
- **There is one example described in a video clip I recently saw that perhaps best sums up its potential. My smart thermostat notices that tomorrow is going to be a particularly hot day and it also sees that there will be high winds early in the morning. Looking ahead to the next day's price forecast, it readjusts the air conditioning regime in my downtown office building to pre-cool the building earlier at a lower price... and at home it also readjusts the time my plug-in hybrid car will draw power to recharge. The next day it also re-calculates my home account to reflect the fact that my solar generation puts me in a credit position today.**
- **Far-fetched? Certainly not in the cards for a while but consider two things.**
- **First, many consider that the introduction and acceptance of plug-in hybrid vehicles will be a key factor in accelerating the development of the smart grid. One month ago Vancouver became, I believe, the first major Canadian city to amend its bylaws to allow these zero emission vehicles on its streets.**
- **Second, one of the important pieces of the smart grid is an Advanced Metering Infrastructure, or AMI. And Alberta is starting down this road. The AUC is participating in an Energy Department initiative that will set the framework for the technology and informational considerations for AMI in Alberta.**
- **This is a longer-term project that will need to face the challenge of re-programming existing systems to accommodate an exponential increase in data.**
- **AMI will enable utilities to better understand their operations and enable customers to better understand their consumption. AMI could enable new rate plans to be downloaded into meters, providing retailers with opportunity to better customize plans. The dynamic information regarding energy usage provided to customers could assist them in choosing behaviours that support energy conservation, efficiency, and demand-response programs.**

- **So, when you apply the analytical framework I outlined, what kind of regulation is needed – technical? Probably, but then what is the market failure that needs to be remedied? Are there regulatory barriers to this development or is regulation needed to impose this? Or is there a combination of regulatory approaches needed?**
- **The key, for me, is to ask, “What is it that markets are not doing – and why not?” Simply jumping in without asking this question can cause damage and delay achievement of the desired outcome.**

### **Micro-Generation**

- **One way to allow customers access to greener choices is to make them directly accessible as generation options from their home or business. A renewable and alternative energy opportunity that the AUC has been involved with is giving Albertans more choice in reducing their carbon footprint through the new micro-generation regulations recently set out by Alberta Energy.**
- **Micro-generation is one megawatt or less, connected to the grid, with the generator intended to meet that customer’s needs. These micro-generation units must come from sources such as solar panels, wind, small-scale hydro, biomass, cogeneration and fuel cells.**
- **The government’s Department of Energy developed this program and the AUC was charged with the implementation of the micro-generation regulation.**
- **Our focus was to develop processes to simplify approvals and interconnection agreements for customers and service providers.**
- **I’m pleased that we have done just that. Through an extensive consultation process, we have now completed a simple one-page application form and a guidelines document that takes Albertans step by step through the process required to generate their own environmentally friendly electricity.**
- **The other attractive incentive about the micro-generation program is that going green in this case might literally pay off – customers will receive financial credit for any unused power they send back into the grid.**
- **Once, again, applying the analytical framework, this is technical regulation. It sets standards so customers can participate in the market through self-supply.**

## CONCLUSION

- **As a final comment, when you are discussing all the issues surrounding carbon regulation or alternative energy sources, consider whether and for what purpose government intervention is needed.**
- **That is the framework I have tried to bring to my remarks today.**
- **Is it needed because there is no possibility of the market providing a solution?**
- **Is it needed because the competitive market does not produce the outcomes we will accept as a society...or is it needed to achieve a type of cooperation amongst market participants to achieve competition?**
- **Also consider whether regulation that exists today should be changed or even removed. Should regulation be *ex-ante* or *ex-poste*? And what kind of regulatory authority should perform each function? Should it be technical committees, legislation, independent quasi-judicial bodies?**
- **It is not enough to say “the government should”...without understanding the most effective and efficient way of doing so, to maximize reliance on market forces to assist in serving the public interest.**
- **Ladies and gentlemen, that concludes my remarks today.**
- **As a last comment on this topic I would simply like to like reinforce a thought I made early in my remarks. That is, the electricity sector in Alberta, despite facing some challenges in addressing carbon constraints, is well equipped to be an effective part of the solutions needed to reduce our carbon footprint. In Alberta, we have the benefit of the opportunity not just for regulation, but also for competition, to play a role.**
- **Before I step down, I would once again thank CERI very much for their invitation and to all of you in the audience for your kind attention.**
- **Please enjoy the remainder of the conference.**

