

**The Evolving Ontario Energy Market
Inter-relationships of the Players and
the Gas and Electricity Markets**

OEA Conference
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Notes for Remarks by
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THANKS VERY MUCH. I AM PLEASED TO BE HERE TODAY AND TO BE PART OF THIS PANEL.

OVER THE NEXT FEW MINUTES, I WANT TO LOOK AT SOME OF THE ISSUES WE WILL FACE IN THE COMING YEARS IN ORDER TO MAINTAIN RELIABILITY OF ONTARIO'S ELECTRICITY SYSTEM. AS THE TITLE OF THIS PANEL INDICATES, THERE IS A NEED FOR THOSE OF US ON THIS PANEL AND OTHERS TO WORK TOGETHER TO ADDRESS THESE ISSUES AND I WILL TALK ABOUT SOME OF THE COORDINATION REQUIRED TO MEET THE MANY CHALLENGES WE HAVE ... INCLUDING PERHAPS THE MOST SIGNIFICANT CHALLENGE THIS INDUSTRY HAS FACED ... THE PHASE OUT OF MORE THAN 7,000 MW OF COAL FIRED GENERATION.

LAST YEAR WHEN I APPEARED HERE ON A SIMILAR PANEL I POINTED OUT A NUMBER OF INTERDEPENDENCIES BETWEEN GAS AND ELECTRICITY SUPPLY AND DELIVERY AND THE NEED FOR US TO WORK TOGETHER. I'M HAPPY TO SAY THAT SUCH WORK IS MOVING AHEAD ON A NUMBER OF

FRONTS. IN THE IESO WE FORMED A WORKING GROUP ALONG WITH UNION GAS, ENBRIDGE GAS DISTRIBUTION AND TRANSCANADA PIPELINES; ONE OF THE OBJECTIVES BEING TO DEVELOP AN EXPLICIT COORDINATION PROCESS TO FACILITATE INFORMATION EXCHANGES AND RESOLUTION OF OPERATIONAL ISSUES. EDUCATION, KNOWLEDGE DISSEMINATION AND TRAINING ARE OTHER KEY OBJECTIVES. WE ARE ALSO PARTICIPATING IN WORK BEING LED BY THE OEB AND AS MEMBERS OF THE IRC, WE ARE LINKED INTO THE NAESB GAS AND ELECTRIC INTERDEPENDENCY WORK. THAT BEING SAID, MY MAJOR CONCERNS AS AN OPERATOR IN THE ELECTRICITY DOMAIN REGARDING THE ONTARIO AND BROADER NORTH AMERICAN DASH TO GAS ARE STILL THE SAME – PRICE, SUPPLY AND INFRASTRUCTURE.

BEFORE WE LOOK AHEAD, LET ME SPEND A FEW MINUTES RECAPPING THE RECORD BREAKING SUMMER THAT WE HAVE JUST GONE THROUGH ... A SUMMER THAT WAS THE HOTTEST AND DRIEST SUMMER IN DECADES. AND PERHAPS A PORTENT FOR THINGS TO COME.

THE RECORDS SET THIS SUMMER INCLUDE:

- A NEW HOURLY ONTARIO PEAK DEMAND
- A NEW HOURLY MARKET DEMAND
- AND A NEW DAILY ENERGY DEMAND

HEADING INTO THIS SUMMER, WE HAD TOPPED THE 25,000 MW HOURLY MARK IN 19 HOURS IN ONTARIO. YET THIS SUMMER ALONE THERE HAVE BEEN 53 HOURS WHEN THE PRIMARY DEMAND EXCEEDED 25,000 MW.

TO COMPOUND THE SITUATION, THE DROUGHT CONDITIONS LIMITED AVAILABLE HYDROELECTRIC ENERGY; THERE WERE INTERTIE LIMITS WITH

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OUR NEIGHBOURS, AS WELL AS A LARGE NUMBER OF FAILED INTERTIE TRANSACTIONS. BY THE WAY REGARDING HYDRO, THIS SUMMER HAS ALSO BROUGHT INTO QUESTION THE CAPACITY VALUE WE SHOULD GIVE TO LIMITED STORAGE HYDRO. WINTER PEAKS WHICH WE HAVE HISTORICALLY PLANNED FOR MAY LAST ONLY AN HOUR OR SO. NOW, WE ARE HAVING OUR PEAKS IN SUMMER, THE REQUIREMENTS ARE TO SUSTAIN OPERATION OVER 10 HOURS OR SO. THOSE AIR CONDITIONERS RUN ALL DAY.

GIVEN THE TREMENDOUS STRAIN ON THE SYSTEM THIS SUMMER, WE WERE FORCED INTO 12 DAYS OF PUBLIC APPEALS ASKING CUSTOMERS TO CUT BACK ON THEIR ELECTRICITY CONSUMPTION AND TWO CONSECUTIVE DAYS OF FIVE PER CENT VOLTAGE REDUCTIONS PLUS LOCAL REDUCTIONS IN THE TORONTO AREA. TOO CLOSE FOR COMFORT.

AND WHILE SUPPLY WAS NEVER INTERRUPTED THIS SUMMER I WOULD SUGGEST TO YOU THAT ONTARIO BUSINESSES, INDUSTRIES AND RESIDENTS ARE NOT BEING PROVIDED THE LEVEL OF ASSURANCE THEY EXPECT FOR A RELIABLE SUPPLY OF POWER WHEN THERE ARE FREQUENT POWER WARNINGS, VOLTAGE REDUCTIONS OR ROUTINE RELIANCE ON EMERGENCY CONTROL ACTIONS TO MEET OUR POWER NEEDS. ALL OF THAT OCCURRED THIS SUMMER.

YES WE MADE IT THROUGH THE SUMMER, BUT MY CONCERN IS THAT MORE OF THIS MAY LIE AHEAD FOR US OVER THE NEXT THREE OR FOUR YEARS.

WE HAVE MAJOR RELIABILITY ISSUES FACING US IN THE SHORT TERM BOTH IN TERMS OF SYSTEM ADEQUACY AND SOME LOCAL AREAS

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INCLUDING TORONTO. WE NEED TO ADDRESS AT LEAST SOME OF THOSE IN THE NEXT NINE MONTHS SO THAT WE DON'T GO THROUGH ANOTHER SUMMER LIKE THIS ONE.

AS WE LOOK OVER THE NEXT FEW YEARS, THERE IS NO QUESTION THAT FROM TIME TO TIME WE WILL CONTINUE TO RELY ON IMPORTS FROM NEIGHBOURING JURISDICTIONS TO MEET DEMANDS IN ONTARIO ... PARTICULARLY DURING PERIODS OF HIGH DEMAND. JUST AS WE ARE GOING TO DEPEND ON NEW SUPPLY FACILITIES, PREDOMINANTLY GAS-FIRED MEETING SCHEDULE AND RELIABILITY EXPECTATIONS.

BY THE END OF AUGUST, THIS YEAR THERE HAVE BEEN 440 HOURS – OR EIGHT PER CENT OF THE TIME – WHERE THE ONTARIO DEMAND PLUS OPERATING RESERVE REQUIREMENTS EXCEEDED THE AVAILABLE DOMESTIC GENERATION. WE NEED TO IMPLEMENT SOME FORM OF DAY-AHEAD MARKET IN SHORT ORDER, NOT ONLY TO MATCH GAS COMMITMENTS BUT ALSO TO PREVENT THE LEVEL OF FAILED IMPORT TRANSACTIONS IN REAL TIME. AND WE NEED THIS BEFORE NEXT SUMMER.

FAILED INTERIE TRANSACTIONS CONTRIBUTED TO OUR SUPPLY WOES THIS SUMMER. AUGUST 3RD WAS ONE EXAMPLE WHERE THE FAILURE OF 676 MW OF INTERTIE TRANSACTIONS IN REAL TIME WAS A FACTOR IN THE NEED FOR A FIVE PER CENT VOLTAGE REDUCTION THAT AFTERNOON. WE NEED TO LOCK THESE TRANSACTIONS DOWN.

LET ME TALK FOR A MOMENT ABOUT THE GOVERNMENT'S PLAN TO PHASE OUT COAL FIRED GENERATION IN THIS PROVINCE. RELIABILITY IS

THE NUMBER ONE PRIORITY FOR THE IESO AND WHEN WE LOOK AT ANYTHING – INCLUDING THE COAL PHASE-OUT – OUR FIRST CONCERN IS FROM THE PERSPECTIVE OF HOW IT WILL IMPACT ON RELIABILITY.

THE PLANNED COAL PHASE OUT REQUIRES A HIGH DEGREE OF CHANGE IN A SHORT PERIOD OF TIME. THERE ARE A LARGE NUMBER OF NEW RESOURCE ADDITIONS REQUIRED - GENERATION, TRANSMISSION AND DEMAND SIDE PARTICULARLY IN THE GREATER TORONTO AREA. THE REFURBISHMENT OF THE TWO BRUCE UNITS IS NEEDED AND THERE IS A REQUIREMENT FOR A LARGE NUMBER OF TRANSMISSION INFRASTRUCTURE ADDITIONS.

MUCH OF THE DISPLACED COAL GENERATION WILL ALSO BE REPLACED BY GAS AND THAT IN ITSELF PRESENTS SOME CHALLENGES INCLUDING THE VOLATILITY OF GAS PRICES. NATURAL GAS PRICES WILL INCREASINGLY INFLUENCE THE MARKET CLEARING PRICE AS WE LEAN MORE AND MORE ON GAS TO MEET MUCH OF ONTARIO'S ELECTRICITY NEEDS. THIS HAS BEEN EVIDENT THIS SUMMER WITH LARGE SWINGS FROM LOW OVERNIGHT CLEARING PRICES IN THE ELECTRICITY SPOT MARKET TO PRICES OF \$140 OR MORE DURING DAYTIME WHEN GAS HAS OFTEN BEEN AT THE MARGIN.

THE COMPLETION OF ALL THE GAS FIRED GENERATION PROJECTS IN ONTARIO WOULD MORE THAN DOUBLE THE PRESENT ANNUAL VOLUME OF GAS CONSUMED IN ONTARIO TO PRODUCE ELECTRICITY. APPROXIMATELY 20 PER CENT OF ALL THE GAS CONSUMED IN ONTARIO WOULD THEN BE DEVOTED TO ELECTRICITY GENERATION.

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WE WILL NEED TO ENSURE THAT GAS IS AVAILABLE FOR GENERATION BY COORDINATING ELECTRICITY MARKETS WITH GAS MARKETS THAT TYPICALLY MAKE THEIR TRADING ARRANGEMENTS A DAY AHEAD. WITHOUT A DAY-AHEAD COMMITMENT TO GAS GENERATORS, THE IESO MAY NEED TO APPROACH THE REAL TIME DISPATCH OF GAS FIRED GENERATION AS POTENTIALLY ENERGY LIMITED RESOURCE. IN ADDITION TO DAY-AHEAD ARRANGEMENTS, AS I HAVE NOTED GAS AND ELECTRICITY SYSTEM OPERATORS HAVE COME TOGETHER AND ESTABLISHED A WORKING GROUP TO IDENTIFY AND RESOLVE MARKET COORDINATION ISSUES. AND THE OEB WILL BE ALSO MONITORING OUR PROGRESS ON THESE MATTERS.

AS WE MOVE THROUGH THE OFF-COAL TRANSITION, THE IESO WILL MONITOR TRANSITION PLANS, IDENTIFY RISKS AND WORK TO ADJUST SCHEDULES TO MAINTAIN RELIABILITY. THIS WILL INVOLVE WORKING CLOSELY WITH THE PARTIES AND ENTITIES WHO ALL HAVE A MAJOR ROLE TO PLAY IN THE TRANSITION INCLUDING HYDRO ONE, OPG, OTHER GENERATORS, THE OPA AND OF COURSE, THE ONTARIO GOVERNMENT. WHENEVER THERE IS A CHANGE IN SCHEDULE OR DELIVERY, THERE WILL BE A DIFFERENT SYSTEM CONFIGURATION TO STUDY.

IT IS PARTICULARLY IMPORTANT THAT THE IESO AND THE OPA CONTINUE TO COORDINATE THEIR PLANS AND ACTIVITIES. TO THAT END WE HAVE AND WILL CONTINUE TO WORK CLOSELY ACROSS A NUMBER OF FUNCTIONS FROM OPERATIONS TO COMMUNICATIONS TO PLANNING.

AS YOU KNOW, THE OPA HAS BEEN TASKED WITH DEVELOPING AN INTEGRATED SYSTEM PLAN AIMED AT ENSURING THAT ADEQUATE DEMAND AND SUPPLY SIDE RESOURCES ARE PUT IN PLACE TO MEET

ONTARIO'S ELECTRICITY NEEDS IN THE LONGER TERM. GIVEN THE RESPONSIBILITIES WE HAVE FOR MAINTAINING THE CURRENT AND SHORT TERM RELIABILITY NEEDS OF THE PROVINCE, WE CLEARLY HAVE AN INTEREST IN ENSURING THAT AN APPROPRIATE SUPPLY MIX IS DEVELOPED THAT WILL BE ABLE TO MEET ONTARIO'S RELIABILITY NEEDS IN REAL TIME. WE HAVE SENT OUR INITIAL SUBMISSION TO THE OPA AND AMONGST OTHER THINGS, THIS HIGHLIGHTS SOME OF THE OPERATIONAL BENEFITS AND CHALLENGES RELATED TO THE PROPORTION OF GAS IN THE MIX; PARTICULARLY IF THE FLEXIBILITIES OF COAL-FIRED GENERATORS IS NOT PART OF THE LONGER TERM PLAN. WITH ITS ON-SITE FUEL STORAGE, LOAD FOLLOWING CAPABILITY, ABILITY TO PROVIDE DEEP MANEUVERING, AGC AND VOLTAGE SUPPORT, COAL HAS BEEN THE WORKHORSE OF THE SYSTEM.

THIS IS ONE EXAMPLE OF WHERE THE IESO AND OPA NEED TO WORK TOGETHER TO ENSURE THAT OUR SHORT AND MEDIUM TERM PLANS ARE ALIGNED CLOSELY WITH THE LONGER TERM PLANS AND RESPONSIBILITIES OF THE OPA.

WHILE A NUMBER OF THE CHALLENGES THAT I HAVE OUTLINED ARE IN THE SHORT TERM, IT IS IMPORTANT TO RECOGNIZE THAT OUR REACTION TO THE SHORT TERM ISSUES CAN TAKE THE LONG TERM IN A DIFFERENT DIRECTION.

THE PROVINCIAL GOVERNMENT HAS SET THIS SECTOR ON A COURSE THAT ALLOWS FOR THE MARKET TO CONTINUE TO EVOLVE AND PROVIDE BENEFITS TO ALL ONTARIANS. AS AN INDUSTRY, IT IS IMPORTANT THAT WE WORK TOGETHER TO KEEP THIS SECTOR ON COURSE, DEVELOP THE SAFEGUARDS NECESSARY, CAREFULLY STAGE THE EVOLUTION AND

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ELIMINATE THE NEED FOR FURTHER GOVERNMENT INTERVENTION IN THE SHORT TERM.

AT THE IESO WE ARE COMMITTED TO WORKING WITH STAKEHOLDERS AND OTHER ENTITIES IN THIS INDUSTRY, INCLUDING THE OPA, HYDRO ONE AND UNION GAS, WHO ARE ALL REPRESENTED ON THIS PANEL, TO MAKE SURE THAT WE CONTINUE TO MOVE IN THE RIGHT DIRECTION.

AS A FINAL NOTE THE DEVASTATION CAUSED BY KATRINA HAS FOCUSED FURTHER ATTENTION ON THE UPSTREAM INFRASTRUCTURE OF GAS SUPPLY, PARTICULARLY WHERE SUCH INFRASTRUCTURE CONSTITUTES A SIGNIFICANT CONCENTRATION. I NOTE THAT IN FLORIDA AN ENERGY EMERGENCY ALERT LEVEL 2 WAS DECLARED BY FRCC DIRECTLY DUE TO CONCERNS OVER LOSS OF DELIVERY CAPABILITY.

THIS BUSINESS SHOULD BE A MUST FOR CAREER-MINDED GRADUATES – YOU GET 20 YEARS EXPERIENCE IN 6 MONTHS. FUN TIMES – HAVE FUN.