

Welcome to *Renew* – a quarterly publication of the Ontario Waterpower Association (OWA). Over the past few issues, emphasis has been placed on the need for a cogent strategic policy approach within the renewables envelope for waterpower. Be it with respect to transmission planning, increasing the participation of Aboriginal communities or simply ensuring that access to investment opportunities remain open, the absence of a clear direction forward for waterpower has undoubtedly compromised the potential contribution of our sector – at a time when the very attributes of waterpower are most needed. The OWA is not alone in this call for action. The most recent Market Surveillance Panel Report provided another perspective on the need for improved strategic direction as follows:

“...the Panel observes that the expiration of the rebate mechanism in general has created market-driven incentives and is therefore potentially efficiency-improving. However, the increased frequency of water spill does reinforce some of the Panel’s longstanding concerns about the overall efficiency of the current market design.”

A high volume of water available contributes to lower generation costs to Ontario consumers because of the relatively low incremental cost of these water resources. The market should encourage water resources to be dispatched ahead of fossil generators or imports from neighbouring U.S. jurisdictions where marginal resources are typically fossil generators. Spilling water in order to keep fossil generators online or to import from the U.S. has the effect of dampening broader market efficiency.”

And so, as we take a collective breath after the launch of the Feed-in-Tariff Program and prepare for the next *Continued.* ►



Opening of the Almonte Lower Falls Generating Station, Mississippi Mills, Ontario.

Almonte Lower Falls Generating Station

On August 27th, Mississippi River Power Corporation (MRPC) hosted the official opening ceremony of their Almonte Lower Falls Generating Station.

The 4.6 MW facility first came on line on April 9, 2010. This new station is a tremendous asset to the town of Mississippi Mills and is a major achievement for MRPC. The project was the culmination of 10 years of studies, planning, public consultation, design work and construction.

It was in late 2000 that MRPC’s Board of Directors decided that the time was right to explore the possibility of expanding the existing facility in Almonte.

Welcome continued.

Integrated Power System Plan, we have an opportunity to become more tactical in our policy and operational decisions and make incremental improvements that move us closer to our long term objectives. ■

Though the project took 10 years from commissioning to fruition, the benefits of this long-term investment will be reaped by the town Mississippi Mills for several decades to come. ■

New Association Members

Conval Equipment
www.convalequipment.com

Mavel
www.mavel.cz

Sisco Power Generation

2158509 Ontario Ltd.

McCuaig Insurance Ltd.
www.mccuaiginsurance.com

Weir Power
www.weirpowerindustrial.com

PCL Constructors Canada Inc.
www.pcl.com

Peter Kiewit Infrastructure Co.
www.kiewit.com

Ontario Waterpower Association presents the

10th Annual power of water conference



October 18-19, 2010
Westin Harbour Castle, Toronto, Ontario

Deadline for registration, October 1, 2010

Featured Keynote Speakers

- The Honourable Brad Duguid, Minister of Energy
- The Honourable Linda Jeffrey, Minister of Natural Resources
- Chief Isadore Day, Serpent River First Nations
- Jason Chee-Aloy, Managing Director, Power Advisory LLC

Plenary Discussions and Additional Features

- Leaders Arm Chair Discussion – *The role of pumped storage in Ontario's supply mix*
- Regulator's Roundtable

Two-Day Trade Show

Educational Workshops

Two-day concurrent educational seminars focused on topics such as:

- Dam Safety
- Public Safety Around Dams
- Aboriginal Capacity Building
- Workforce Challenges
- Class EA and *Endangered Species Act* Integration
- Development of New Transmission

Plus Several Networking Opportunities



Robert G. Lake Generating Station

June 17th marked the grand opening of the Trent Rapids Power Project, now known as the Robert G. Lake Generating Station, located between Lock 22 and Lock 23 on the Trent Severn Waterway in Peterborough, ON. Peterborough Utilities Inc. (PUI) named the generating station after Robert Lake, who retired from the Peterborough Utilities group of companies in 2006.



Peterborough Mayor Paul Ayotte addresses the attendees of the official opening ceremony of the Robert G. Lake GS. The facility is jointly owned by PUI and Shaman Development Corporation (Gemini Power).

Several local dignitaries spoke at the event including Peterborough Mayor Paul Ayotte who made the following observations regarding the several community benefits of this project.

"It is the citizens of this community who are going to benefit in the long run. These companies have put a lot of money into the City of Peterborough over the last 10 years. This project represents a real and long lasting economic benefit for this community."

Construction on this 8.0 MW and \$32 million, hydroelectric generating station started in April 2008. The facility started to feed electricity into the grid in December 2009. ■



FORUM ON HYDROPOWER

Canadian Hydropower in the North American Context

October 26
Westin Ottawa

2010

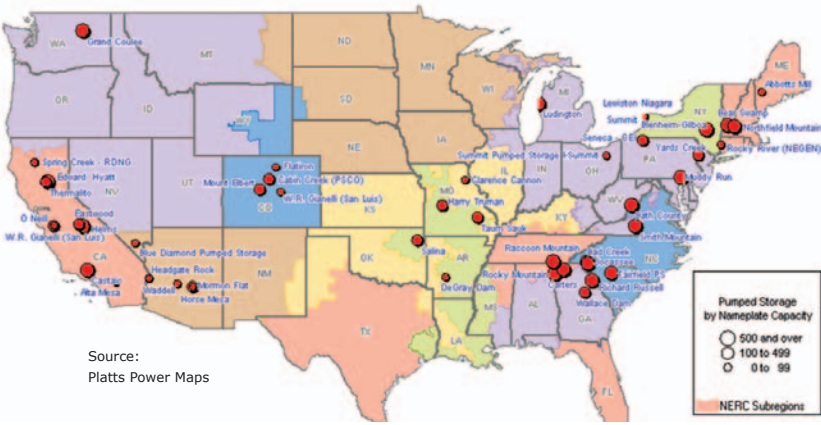
COMMUNITY power2010 2nd Annual Community Power Conference

Power to the People

Early Registration Discount until September 30, 2010

presented by

November 15-16, 2010
Metro Toronto Convention Centre
For conference details visit www.cpconference.ca
or call 1-866-573-6732



Map: Operating U.S. Pumped Storage Plants

Pumped Storage – The Next Wave of Waterpower

Ontario remains far behind in its use of the proven technology of pumped storage. With a single facility in operation, OPG’s 174 MW Sir Adam Beck Pump Generating Station, the province pales in comparison to our southern neighbours who, as illustrated above, rely on more than 20,000 MW of these assets to meet energy and system reliability objectives. The irony is that Ontario’s pumped storage station was one of the first to be put in service in North America. We were pioneers in the technology, showing others the path that we have yet to follow.

Pumped storage generation is more valuable to the electricity system for the benefits it provides beyond the production of energy on demand. It has the largest capacity

and most cost-effective means of grid storage today. Though other technologies are emerging, across the continent and around the world, jurisdictions that rely on baseload nuclear generation and those moving to integrate intermittent renewable resources such as wind and solar, have relied on and are turning to proven pumped storage as a critical part of their supply mix.

A recent inventory of Ontario’s technical pumped storage potential suggests that there is in excess of 10,000 MW available. Notwithstanding that there will be practical limitations to both realizing this potential and the extent to which it will serve the province’s system requirements, there is certainly significant room for growth and expansion. Most importantly, several

serious investors are looking to Ontario and have project proposals ready to take forward should the appropriate policy and economic climate be established. With the next Integrated Power System Plan upon us, we must take the path we helped to create. ■

Benefits of Pumped Storage

- Increased power system stability and security
- Increased operational efficiency of transmission grids and other generation resources
- The provision of operating reserve, frequency and voltage regulation, ramping and black start capability

Mitigate, Monitor and Report – The Template Agreement for Waterpower Facilities

This June, OWA hosted a full-day workshop focused on the *Endangered Species Act* (ESA) implementation and the template agreements for waterpower projects. The well-attended workshops built upon the success of previous educational sessions hosted by the OWA.

The audience was comprised of proponents, practitioners and representatives from the Ministry of Natural Resources (MNR).



Colin Hoag, Policy Advisor, OWA, presenting at the ESA workshop hosted by OWA.

Presentations included *An Introduction to the ESA and its Implementation – Agreements for Waterpower* (MNR), *An Analysis of the Intersection of Waterpower Facilities and Listed Species* (OWA), *Template Agreement for Waterpower Facilities* (Scott Stoll, Aird & Berlis LLP), and *Mitigation, Monitoring and Reporting Approaches* (Dan Gibson, Natural Resource Solutions).

The workshop concluded with a group exercise of various case studies, which required participants to put themselves in a self-screening mindset of determining whether their facility

was impacted and what measures should be taken in negotiating agreements.

Following the ESA workshop, letters were mailed to all potentially affected facility owners by the OWA. These letters outlined if an owner’s facilities were potentially affected and which species of concern may be present. This analysis was based on information obtained from MNR’s Natural Heritage Information Centre, the development of Best Management Practices, Water Management Planning, species experts and consultation with owners and operators of waterpower facilities. ■

It seems that there isn’t a day that goes by without some media coverage of Ontario’s Green Energy agenda, both positive and negative. Almost exclusively, however, attention has been focused on the new entrants to the renewables game – wind and solar, while waterpower, our first energy source, simply continues to provide reliable, responsive electricity – as it has for more than a century. It is time again that waterpower become our first choice amongst energy alternatives. Here are three reasons why:

1. Value

Increasingly the issue of “price” is being raised in the public consciousness. It’s ironic that most people still refer to their “hydro” bills at a time when the real hydro – waterpower – remains the most economic renewable energy alternative. As outlined in the originally filed Integrated Power System Plan, waterpower should be considered a preferred renewable energy source:

“Hydroelectricity is seen generally to have a lower unit energy cost than wind resources. The economic advantage of hydroelectric over wind is in fact greater than this comparison alone would suggest, because of the higher capacity value of hydroelectric. That is, for given installed capacity of hydroelectric and wind resources, the hydroelectric resources make a much larger contribution to meeting the annual peak in system demand, thereby substantially avoiding the need (and costs) for other resources that would otherwise be needed to meet system adequacy requirements.”

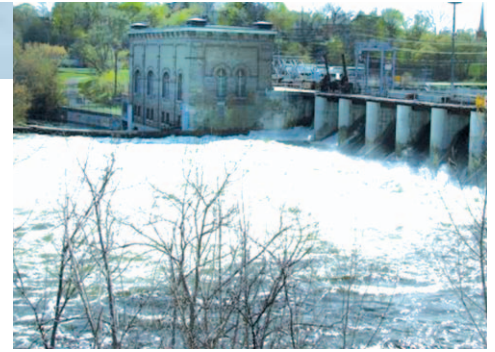
On this basis, alone, there is an argument to be made for making waterpower our first choice.

2. Flexibility

Perhaps as important as the issue of price is the reality that all electrons are not created equally. Each form of generation in our diverse supply mix performs a specific role. Amongst renewables, waterpower is the flexibility in the system, not only in terms of responding to hourly, daily and seasonal changes in demand but, increasingly, providing a buffer to fluctuating sources of supply. The attributes of waterpower in this regard will only become more important as the province moves to reduce its dependence on fossil generation and integrate additional sources of other renewables. Waterpower truly provides benefit to the integrity of our entire electricity system, above and beyond the actual energy generated.

3. Reliability

Finally, waterpower is durable and reliable. The vast majority of our 200 existing facilities have been operating for decades and many for more than a century. Put simply, waterpower is an asset that lasts generations. Decisions with respect to facilities nearing the end of their useful life do not have to be made every 20 or 30 years. The Feed-in-Tariff contracts for waterpower are for 40 years and the recent Hydroelectric Contract Initiative offers contracts for existing facilities for another 20 years. Properly maintained and with routine



refurbishment and upgrading, a waterpower facility can last virtually forever. And with energy utilization rates far in excess of any other renewable technology, waterpower’s reliability is unparalleled.

What would placing waterpower first amongst renewables look like? For starters, it would mean that procurement under the Feed-in-Tariff program would be premised on allocating limited existing distribution and transmission capacity using a more rational approach that recognizes the economic and energy differences between alternative sources. It would extend to influence decisions with respect to when and where to expand distribution and transmission infrastructure. It would mean open access to Crown land opportunities to allow investors to take a planned and practical approach to new development, including specific targets for new waterpower in megawatts and megawatt hours. The potential results? Improved ability of the grid to operate and absorb other renewable energy resources. Increased direct revenues to the government and the creation of economic activity across the province and in the north in particular. And the re-emergence of a once vibrant home-grown industry and the re-establishment of Ontario as a manufacturing and technological leader. Waterpower was the energy engine upon which the prosperity of this province was originally built. It was our first choice more than a hundred years ago. It should be our first choice now. ■

Paul Norris

President, Ontario Waterpower Association

Upcoming Events

10th Annual Power of Water Conference

October 18-19, 2010
www.owa.ca

Canadian Dam Association 2010 Annual Conference

October 2-7, 2010
Niagara Falls, ON
www.cda.ca

APPrO 2010

November 16-17, Metro Toronto Convention Centre, Toronto, ON
www.appro.org

Canadian Hydropower Association Forum on Hydropower 2010

October 26, 2010
Westin Hotel, Ottawa, ON
www.canhydropower.org

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