



# End-to-End Connection Process and Timeline

## Part II

June 22, 2010

# Welcome

We appreciate you taking the time today to join us as we deliver the next in a series of webinars to help you with various aspects of the connection process.

Our aim is to provide regular, timely and meaningful information to help bring your projects to fruition.

# May 18<sup>th</sup> Webinar Reviewed:

1. End to end connection process (Part I) which included:
  - High Level Process Steps to Connect
  - Connection Impact Assessment (CIA); including Distance Limitation impacts
  - Initial Cost Estimate
  - Connection Cost Estimate (CCE)
  - Connection Cost Agreement (CCA)
2. HST Impacts
3. List of Station Capacity and List of Applications

# Agenda

1. Review end to end connection process (Part II)
  - Engineering, Procurement and Construction
  - Cost Detail Report Example
  - Confirmation of Verification Evidence Report (C.O.V.E.R.)
  - Distribution Connection Agreement
  - Connection Requirements
  - Post Connection Activities
  - Total Approximate Connection Timeline
2. Next Steps
3. Updates from last webinar

# Date Definitions

- Energization Date:
  - Date project becomes a load customer
  - Also known as Load Date
- In-service Date:
  - Date project is approved to generate electricity onto the grid
  - Also known as Ready for Service Date
- Commercial Operation Date (COD):
  - Recognized by the OPA as the contract initiation date

# Engineering, Procurement and Construction

- Project In-Service Date is negotiated at the project kick-off meeting
  - Kick-off meeting will take place no later than 45 days after the Connection Cost Agreement (CCA) has been executed

# Engineering, Procurement and Construction

## Kickoff Meeting

- The assigned Project Manager (PM) and the proponent will:
  - Determine/Finalize In-Service date
  - Discuss scope of work
  - Discuss timelines for generator deliverables

# Engineering, Procurement and Construction

## Kickoff Meeting

- The assigned Project Manager (PM) and the proponent will:
  - Review high-level project schedule (created by PM)
  - Answer any outstanding questions the proponent may have with regards to processes, deliverables and/or timelines
  - Discuss/provide relevant Hydro One templates and metering standards

# Engineering, Procurement and Construction

- Proponent must submit information to the distributor for detailed design review and approval
  - Single Line Diagram (SLD)
  - Commissioning Schedule
  - Revenue metering configuration
    - Generation output must be measured net of station service as per FIT Standard Definitions version 1.3.0.  
March 9, 2010

# Connection Requirements

- Generator provides the revenue metering single line diagram six months before generator is connected
- Generator builds metering installation to Hydro One retail meter standards
  - If the metering installation is not located at the Point of Common Coupling (PCC), then the generator must provide appropriate loss calculations

# Connection Requirements

- Hydro One installs meter and tests the meter at generator's cost
- Generator must have all necessary Electrical Safety Authority (ESA) approvals in order to be connected
- Generator returns executed Distribution Connection Agreement (DCA) with electronic funds transfer (EFT) form and any letter of re-direction of payment if necessary
  - DCA must be executed before generator connects as a load customer

# Connection Requirements

- Generator establishes COD via a declaration to both Hydro One and the OPA, per the FIT program rules
- Force Majeure:
  - Generator must prove to the OPA that the distributor could not connect the project by the COD due to issues beyond the generator's control in order to avoid paying liquidated damages

# Cost Detail Report

- Cost detail report is provided to the proponent by the Project Manager (PM) on a regular basis in order to determine and track the actual connection costs as of a specific date

## **Report Includes:**

- Graph of planned/estimated cost against up-to-date actual costs incurred on the project
- Forecast to completion cost

# Cost Detail Report

## Report Includes (cont'd):

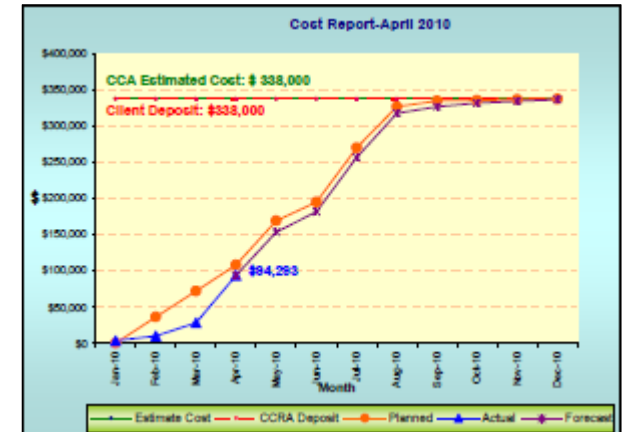
- Details on status of the project:
  - Timing
  - Scope changes
  - Scheduling
  - Outstanding project issues
- Report will be provided by the PM to the proponent on a monthly basis
- The report that outlines costs for a certain month will be sent out by the end of the following month

# Cost Detail Report Example

## Engineering & Construction Services

Project Management

Project Name: ABC Wind Farm				April 2010 Monthly Cost Report			
Proponent: XYZ Limited Partnership				LDC (if Applicable): N/A			
ID#: 000	IP#: 11111	AR#: 22222	Feeder/Circuit: M1	Consultant: Consultants Inc.			
Hydro One Ready for Service:	15-Aug-10	Voltage:	44 kV	Prepared By:	Project Manager		
Permission to Generate Date:	30-Aug-10	TS/DS:	ABC TS	Document Date:	23-Apr-10		
CCA In-Service Date:	30-Aug-10	Brief Project Description: 10.0 MW Wind Generation					
<b>Threats / Risks / Emerging Issues / Potential Scope Changes:</b>				<b>Action Plan:</b>			
1 Proponents freewave radio installation on their site is scheduled to be completed by July 30, 2010.				Proponent is in discussions with multiple contractors to achieve a completion date of July 1, 2010 or sooner.			
2 Initial outage request denied.				New outage request to be scheduled for a later date.			
3 Proponent has requested to decrease generation capacity to 5.0 MW.				CIA rework may be required. Project Manager to follow up with Hydro One Asset Management (Generation Connections)			
<b>Current Month Status:</b>				<b>Next Month Plan:</b>			
1 Bill of Materials received				Material to be ordered			
2 Engineering is ongoing				Engineering drawings package to be issued			
3 Feeder co-ordination study in-progress.				To be available by 24-May-10			
	<b>Key Milestone Dates</b>	<b>Status</b>	<b>Remarks</b>	<b>Project Budget Summary</b>			
<b>Initial Planning</b>	11-Jan-10	Complete		<b>Item</b>	<b>Value</b>		
<b>Engineering</b>	17-May-10	In-progress	Complete drawings package to be issued	Actual Cost: \$	\$	94,293.00	
<b>Material Status</b>	14-Jun-10	In-progress	Material to be delivered to site.	CCA Estimated Cost: \$	\$	338,000.00	
<b>Provincial Lines</b>	24-May-10	In-progress	Feeder study ongoing.	Client Approved Budget (Client Deposit): \$	\$	338,000.00	
<b>Construction</b>	8-Dec-09	N/A	Awaiting Drawings/Materials	Project % Complete	28%		
<b>Commissioning</b>	15-Jul-10	N/A		Estimate to Completion (ETC): \$	\$	243,000.00	
<b>In-Service</b>	30-Aug-10	On-track		Estimate at Completion (EAC): \$	\$	337,000.00	
<b>Closing</b>	22-Nov-10	N/A					
<b>Others</b>							



**Important Notes/Comments:**  
 All quantitative figures displayed in this report, include costs incurred up to month's end. All qualitative information displayed is as of the document date.  
 All costs displayed exclude GST

Hydro One Ready for Service: The date when all the Hydro One work is projected to be complete.

Permission to Generate Date: The date when the Ontario Grid Control Centre is allowing the generator to generate.



# C.O.V.E.R.

## **Confirmation of Verification Evidence Report**

A process where generators test their own equipment

- COVER must be completed 1 month prior to the in-service date
- Generator submits to the distributor a protection philosophy for approval
- COVER document ensures the protection proposed is adequate and viable

# C.O.V.E.R.

## Confirmation of Verification Evidence Report

- Generator completes the COVER template, which specifies:
  - ✓ What the generator will test?
  - ✓ The generator's equipment
- Hydro One approves the proposal
- Testing is then performed by the generator

# C.O.V.E.R.

## **Confirmation of Verification Evidence Report**

- COVER is completed by the generator and submitted to Hydro One
- Hydro One approves the COVER
  - ✓ Approved by the assigned COVER Coordinator to the project

# Distribution Connection Agreement (DCA)

- As per the Distribution System Code (DSC) a “Connection Agreement” is an agreement entered into between a distributor and a customer connected to its distribution system

# Distribution Connection Agreement (DCA)

- DCA defines the conditions of the connection and obligations of the generator and Hydro One with respect to delivery of electricity to or from that connection
  - One-time event which must be completed before Hydro One connects the proposed facility
  - Must be signed prior to being connected as a load and no later than 30 days before the in-service date

# Distribution Connection Agreement (DCA)

- Outlines the technical and operating requirements
- Documents asset ownership
- Provides an outline of the roles and responsibilities of each party
- Lists all the pertinent contact information for the generator and Hydro One (schedule F)

# Reconciliation of Project Connection Costs

- Occurs after the project has gone in-service and all relevant project costs have been posted to the project
- Project Manager determines if there is a difference between the payments made by the generator and the actual connection cost

# Reconciliation of Project Connection Costs

- If there is a difference between the payments made by the generator and the actual connection costs then:
  - a refund is issued to the generator
- **or**
  - an invoice is sent to collect the remainder of the funds required to close the project
- Completed within 180 days after project has been placed in-service

# Post Connection Activities

- OPA provides a letter of direction for Hydro One to:
  - Pay the generator at a specified contract price
  - Effective on a commercial operation date
  - For a specified contract term
- The generator name on the OPA letter of direction must be **exactly the same name** as that on the
  - Hydro One account for the generator **and**
  - Distribution Connection Agreement **and**
  - EFT form

# Post Connection Activities

- Hydro One bills the generator for electricity withdrawn from the distribution system at OEB approved rates
  - Billing is issued on a billing cycle basis
  - Each billing cycle is approximately 30 days long but does not align with the calendar month

# Post Connection Activities

- Hydro One will:
  - deposit the payment into the generator's bank account
  - send a generation statement electronically to the generator
- Hydro One:
  - pays the generator based on calendar month
  - issues payment 21 business days after the end of the calendar month

# Total Approximate Connection Time

- ✓ **60 days:** Proponent applies for CIA  
(120 days if multiple LDC's involved)
- ✓ **6 months:** Application for CCE, Submit Notice to Proceed to OPA, Application for CCA
- ✓ **8 – 12 months:** Construction of Project
- ✓ **3 – 6 months:** Reconciliation of project connection costs between estimated and actual costs completed by the LDC
- The above approximate timeline applies to small and medium sized projects
- Projects >10MW have additional requirements which will take more time to fulfill

# Next Steps

- Economic Connection Test (ECT)
  - Starting August 3, 2010
  - To be completed by the Ontario Power Authority
  - Is a process for prioritizing transmission expansion
  - The OPA will identify economically justifiable transmission expansion projects which are required to accommodate FIT program applicants; will coordinate with distribution expansion plans

# Update from last Webinar

- **Technical Working Group (TWG) on Feeder Distance Issues**
- Five industry associations were asked to send delegates:
  - CanWEA, CanSIA, APAO (Agri-Energy Producers Association of Ontario), OWA and OSEA
- The Working Group has met five times since the beginning of April
- Final meeting was June 10th, 2010
- The Working Group will release a report of findings July 2010

# TWG on Feeder Distance Issues

## Structure of Final Report

- 3 to 4 page Executive Summary
- Table of Contents will include:
  - Introduction
  - Voltage Performance Criteria
    - Fundamental Nature of the Problem
    - Impact of distance and DG size
  - Power Distance Limitations
  - Potential Solutions
  - Conclusions

# TWG on Feeder Distance Issues

## Structure of Final Report (Cont'd)

- Appendices:
  - will contain the relevant detailed submissions from the Working Group Members

## Timeline

- Draft circulated to Members by June 24th
- Feedback from members and edits due by July 5th
- Final report ready for external distribution by mid July

# Connection Impact Assessment (CIA) Turnaround Time

- DSC requires a distributor provide an assessment of the impact of the proposed generation on the system within 60 days
- 60 days starts once Hydro One deems the CIA application to be complete
  - not the same as the OPA scheduled CIA application window

# CIA Turnaround Time

- An application is deemed complete once Hydro One verifies the CIA application package
  1. has all required information included

**and**

  2. technically complete and accurate

# CIA Turnaround Time

- A complete application package consists of the following:
  - ✓ Signed Form B
    - Stamped by a licensed Professional Engineer
  - ✓ Distribution Operating Map (DOM)
  - ✓ Single Line Diagram (SLD)
    - Stamped by a licensed Professional Engineer
  - ✓ Signed CIA Study Agreement
  - ✓ Correct CIA payment

# CIA Turnaround Time

Exceptions for Non-CAE project only:

- A completed CIA application will be put on-hold if there is a “pending complete” application(s) from another generator(s) who:
  1. Applied to the same distribution station

**and**

  2. Were allotted an earlier application window by the OPA

# CIA Turnaround Time – Same Station Applications

<b>SAMPLE TIMELINE*</b>	<b>Project One</b>	<b>Project Two</b>
Application window scheduled by the OPA – receive electronic package	May 31	June 1
Up to 5 business days – Hydro One to advise proponent of application issues. Must receive original documents within this timeframe.	June 7 – information missing or inaccurate: 48hrs start	June 8 – electronic package and original documents received. Deemed complete and accurate, project placed on HOLD
48 Hrs – proponent responds to missing or incomplete information request	June 9	June 9 – no information required, still on HOLD
48 Hrs – Hydro One to check received information to ensure accuracy and completeness	June 11	June 11 – Continue to be on HOLD
CIA Initiated once package deemed accurate and complete	June 11, 10:00am	June 11, 10:30am Proceed – CIA initiated in sequence

**\* Table for illustration purposes only, for cases where there is a dependency on other same station applications**

# CIA Turnaround Time

- If a project requires multiple Local Distribution Companies (LDC) to be involved Hydro One must
  - work in conjunction with the other involved LDC(s)
  - incorporate the assessment the LDC is required to produce into a combined CIA report for the project
- Maximum CIA turnaround will be extended to 120 calendar days after a complete CIA application package has been received

# Important Contact Information

## **Hydro One**

Web: [www.HydroOne.com](http://www.HydroOne.com)

E-mail: [DXGenerationConnections@HydroOne.com](mailto:DXGenerationConnections@HydroOne.com)

Phone: 1-877-447-4412 (Option #2)

## **Ontario Power Authority**

Web: [www.powerauthority.on.ca](http://www.powerauthority.on.ca)

Phone: 1-888-387-3403

Next Webinar – Fall 2010

Questions