

# Transmission OM&A and Capital

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## 2011/2012 Transmission Rate Application Stakeholder Consultation

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# The System



**Transmission Stations**  
281

**Transmission Lines**  
500kV - 3784km  
230kV - 13824km  
115kV - 10953km

**Underground Cable**  
230kV - 46km  
115kV - 221km

# Transmission OM&A and Capital Investment Drivers

## Investment Drivers:

- public and employee safety
- maintain transmission reliability
- compliance with regulatory requirements such as the Transmission System Code, Northeast Power Coordinating Council (NPCC), North American Electrical Reliability Corporation (NERC) and environmental requirements
- meeting system growth requirements
- Green Energy Act and Feed – in Tariff

# Transmission Program Expenditures

- Categories:
  - Sustaining
  - Development
  - Operations
  - Shared Services
  - Property Taxes



# Transmission OM&A Expenditures (\$ Millions)

Description	Historic			Bridge	Test	
	2007	2008	2009	2010	2011	2012
Sustaining	206	187	213	226	246	254
Development	8	9	14	17	18	19
Operations	54	52	53	65	66	68
Property Taxes & Rights	63	65	65	69	71	72
<b>Total</b>	<b>331</b>	<b>313</b>	<b>345</b>	<b>377</b>	<b>401</b>	<b>413</b>
Total % Change (Year to Year)		(5)%	10%	9%	6%	3%

# Transmission OM&A Sustaining

- Investments required to maintain existing transmission lines and stations facilities so that they will continue to function as originally designed.
- Stations
  - Maintain existing assets located within transmission stations including power system and telecommunication facilities.

## Lines

- Maintain overhead transmission lines and underground cables, including vegetation control on transmission lines rights-of-way.

## Engineering and Environmental Support

- Specialized and administrative support needed to assist with decision making processes in managing the transmission assets.

# Transmission OM&A – Sustaining Expenditures (\$ Millions)

Description	Historic			Bridge	Test	
	2007	2008	2009	2010	2011	2012
Stations	150	134	151	167	182	186
Lines	47	43	49	49	53	57
Engineering & Environmental	9	10	12	11	11	12
<b>Total</b>	<b>206</b>	<b>187</b>	<b>213</b>	<b>226</b>	<b>246</b>	<b>254</b>
Total % Change (Year to Year)		(9)%	14%	6%	9%	3%

# Transmission OM&A Development

- Development Activities
  - Fund research and development as well as the development of new standards.
  - Development work comprising of pre-engineering and approvals to respond to the Green Energy Act and Feed – in Tariff.

# Transmission OM&A Development Expenditures (\$ Millions)

Description	Historic			Bridge	Test	
	2007	2008	2009	2010	2011	2012
Standards & Technology	8	9	14	17	18	19
Total % Change (Year to Year)		12%	55%	21%	5%	5%
Major Projects in Deferral Account			2	33	34	42

# Transmission OM&A Operations

- Operators
  - Manage transmission assets in real time (24X7) including planning of transmission outages.
  - manage relationships with transmission-connected industrial customers, LDCs, and generators.
- Operations Support
  - maintenance of the computer tools and systems for the operations function.
- Environmental, Health and Safety
  - support environmental, health and safety activities to meet requirements (i.e. legal obligations, due diligence, corporate health and safety objectives).

# Transmission OM&A – Operations (\$ Millions)

Description	Historic			Bridge	Test	
	2007	2008	2009	2010	2011	2012
Operators	28	29	30	32	33	33
Operations Support	18	17	17	24	25	26
Environmental, Health and Safety	3	2	2	4	3	4
Generator & Customer Relations	4	4	4	5	5	5
<b>Total</b>	<b>54</b>	<b>52</b>	<b>53</b>	<b>65</b>	<b>66</b>	<b>68</b>
Total % Change (Year to Year)		(4)%	2%	23%	2%	3%

**PRELIMINARY**

# Transmission Capital Expenditures (\$ Millions)

Description	Historic			Bridge	Test	
	2007	2008	2009	2010	2011	2012
Sustaining	210	280	296	346	424	443
Development	273	311	516	692	729	708
Operations	5	23	20	26	44	57
<b>Total</b>	<b>488</b>	<b>614</b>	<b>832</b>	<b>1,064</b>	<b>1,197</b>	<b>1,208</b>
Total % Change (Year to Year)		26%	36%	28%	13%	1%

# Transmission Capital Sustaining

- Investments required to replace or refurbish components to ensure that the transmission system functions as originally designed.

## Stations

- capital investments required to refurbish/replace existing power equipment assets located within transmission stations, and existing telecommunication assets, that have reached end of life.

## Lines

- capital investments required to refurbish/ replace existing assets associated with overhead and underground transmission lines that have reached end of life.

# Transmission Capital Sustaining Expenditures (\$ Millions)

Description	Historic			Bridge	Test	
	2007	2008	2009	2010	2011	2012
Stations	143	224	220	262	337	357
Lines	67	57	76	84	87	86
<b>Total</b>	<b>210</b>	<b>280</b>	<b>296</b>	<b>346</b>	<b>424</b>	<b>443</b>
Total % Change (Year to Year)		33%	6%	17%	23%	4%

# Transmission Capital Development

- Investments required to upgrade or enhance transmission system capabilities to:
  - Maintain performance of Hydro One's transmission system in alignment with Customer Delivery Point Performance ("CDPP") Standards.
  - Provide adequate capacity to reliably deliver electricity to local areas and customers.
  - Provide inter-area network transfer capability to enable electricity to be delivered from sources of supply to load centers.
  - Connect generating stations and load customers to the Hydro One transmission system.
  - Meet the Company's transmission license requirements.

# Transmission Capital – Development Expenditure (\$ Millions)

Description	Historic		Bridge	Test		
	2007	2008	2009	2010	2011	2012
Performance Enhancement & Risk Mitigation	3	3	19	32	28	12
Local Area Supply	98	91	94	100	148	98
Inter-Area Network	81	153	343	470	351	320
Smart Grid	0	0	0	13	2	1
Load Connection	54	47	54	56	91	82
Station Upgrades	0	0	0	9	86	157
P&C for Enablement	0	0	1	11	24	37
Generator Connection	38	18	5	0	0	0
<b>Net Total</b>	<b>273</b>	<b>311</b>	<b>516</b>	<b>692</b>	<b>729</b>	<b>708</b>
Total % Change (Year to Year)		14%	66%	34%	5%	(3%)

# Transmission Capital – Cash Flow of Top 5 Projects (\$ Millions)

Description	Bridge	Test		Target In-Service Date
	2010	2011	2012	
Bruce x Milton	191	186	85	Late 2012
Mississagi SVC	3	42	12	Late 2012
Rebuild Hearn TS	7	56	25	Mid 2012
Leaside x Bridgman	22	31	37	Mid 2013
Leaside / Manby Improvements	9	27	29	Late 2012

# Transmission Capital Operations

- Investments in infrastructure required to sustain the Central Transmission Operations function, which is operated from Hydro One's Ontario Grid Control Centre.
- Modifications and expansion of infrastructure to respond to added Operating requirements associated with expanded regulatory and system requirements.

# Transmission Capital – Operations Expenditures (\$ Millions)

Description	Historic			Bridge	Test	
	2007	2008	2009	2010	2011	2012
Operating and Control Facilities	2	17	11	18	23	18
Operating Infrastructure	3	6	9	7	22	39
<b>Total</b>	<b>5</b>	<b>23</b>	<b>20</b>	<b>26</b>	<b>44</b>	<b>57</b>
Total % Change (Year to Year)		360%	(13)%	30%	69%	29%



**DISCLOSURE NOTE:**

**FORWARD LOOKING STATEMENTS AND INFORMATION**

We have included forward-looking statements in this report that are subject to risks, uncertainties and assumptions. Such information represents our current views based on information as at the date of this report. Any statement contained in this document that is not current or historical is a forward-looking statement. We have based these forward-looking statements on historical experience, current conditions and various assumptions believed to be reasonable in the circumstances. Actual results could differ materially from those projected in the forward-looking statements. Because of these risks, uncertainties and assumptions, undue reliance should not be placed on these forward-looking statements. Except to the extent required by applicable securities laws and regulations, we undertake no obligation to update or revise any of these forward-looking statements, whether to reflect new information, future events or otherwise.