

1 **WORK EXECUTION STRATEGY**

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3 **1.0 BACKGROUND**

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5 Hydro One has been successful in completing its Distribution Sustaining and  
6 Development Capital programs. Hydro One is facing (given the growing Dx Capital  
7 programs) continuing pressure to do more work, and to do work more efficiently.

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9 Hydro One Distribution has updated its Work Execution Strategy to increase work  
10 execution capacity and provide flexibility to accommodate additional changes in future  
11 years. This addresses the significant increases in planned transmission and distribution  
12 work programs over the coming years and the current business changes such as the  
13 scarcity of specialized materials and equipment and qualified personnel to undertake the  
14 work. Execution of Hydro One's distribution work program must be considered jointly  
15 with transmission, as the resources are part of an integrated workforce. As shown in the  
16 EB-2008-0272 application, the transmission capital program is also forecast to grow  
17 significantly.

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19 **2.0 FACTORS IMPACTING FUTURE WORK PROGRAMS**

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21 Distribution system projects and programs are becoming increasingly complex to plan  
22 and execute due to an increase in the total volume of work required, increasing  
23 complexity of the distribution system function and design, and limitations on developing  
24 internal and external resources.

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26 **2.1 Increasing Work Volumes**

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28 Hydro One Distribution's OM&A and Capital work programs are growing to address the  
29 anticipated increase in distributed generation connections to our distribution system and

1 the need to develop a Smart Grid, both of which improve the capability to serve our  
2 customers and support the government's *Green Energy & Green Economy Act (2009)*.  
3 The rapid increase in distributed wind, solar and small hydroelectric generation  
4 installations have resulted in the need to complete a large number of connection designs.  
5 Changing from a small number of very large generation facilities to a much larger  
6 number of smaller generation facilities requires significant changes to the transmission  
7 and distribution system to ensure its safe operation, protection and control.

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9 In addition, the Distribution business' OM&A and Capital work programs are increasing  
10 to satisfy changing PCB compliance requirements in a timely and orderly manner.

## 11 12 **2.2 Material and Equipment Availability**

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14 Materials and equipment incorporated into distribution projects and programs account for  
15 approximately 40% of the total cost of the work. Rapid growth in work programs at  
16 utilities across North America, and the changing nature of the distribution business to  
17 enable distributed generation and Smart Grid technology, has resulted in an increased  
18 demand for specialized materials and equipment needed to build electrical generation,  
19 transmission, and distribution facilities. A critical shortage for distribution work  
20 programs is specialized electrical utility equipment. The limited number of suppliers and  
21 increasing demand has resulted in longer lead times for this equipment.

## 22 23 **2.3 Work Execution Capacity Challenges**

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25 Distribution system work programs are completed on a project or program basis by  
26 Hydro One resources, by external resources or in combination. The work execution  
27 challenges include:

1 Internal Work Capacity – Specialized staff such as Protection and Control (“P&C”)  
2 engineers, P&C field technicians and linemen have been more difficult to recruit than in  
3 the past, due to competing needs from other organizations in Ontario, and across North  
4 America, in response to expanding infrastructure programs. These critical staff are part  
5 of an integrated workforce for both the transmission and distribution work programs.

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7 External Work Capacity – A greater volume of distribution work will be required to be  
8 contracted out. Where work is very integrated with existing facilities, it is always  
9 managed by Hydro One staff with support from outsourced specialist engineering or  
10 construction services when needed. Some greenfield projects can be outsourced using a  
11 “turnkey” approach, where the design and construction are done by an external firm. All  
12 categories of external resources and services are becoming harder to contract as North  
13 American demand increasingly exceeds available supply.

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15 **3.0 IMPLEMENTATION OF WORK EXECUTION STRATEGY FOR**  
16 **2010-2011 WORK PROGRAM**

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18 Hydro One Distribution continues to proactively pursue labour cost efficiencies (via  
19 appropriate overall compensation, outsourcing, use of multi skilled staff) while managing  
20 the resourcing requirements of an increasing work program and given the potential for  
21 significant retirements in its existing workforce.

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23 Hydro One Distribution has taken a number of actions to increase the volume of work the  
24 Company can complete in future years. Hydro One Distribution is implementing fully  
25 integrated work planning methods that balance and optimize the use of internal and  
26 external resources, costs, customer needs and material availability. The key initiatives  
27 are summarized below.

1     **3.1     Increased Work Bundling**

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3     Many individual work programs are being bundled together so that work of different  
4     types can be executed at common geographic locations at the same time. One example is  
5     generation connections and targeted distribution system enhancements to be bundled at  
6     high connection volume locations. Completing more bundled work at common locations  
7     enables sustainment work and development work to be planned and executed in an  
8     integrated manner under a common work plan. This approach will utilize resources more  
9     efficiently and increase the total volume of work that can be executed.

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11     **3.2     Standardized Designs**

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13     An increased use of standardized and modular designs are being used to streamline the  
14     design process, allowing faster, more consistent, and lower cost work execution. This  
15     will reduce the demands on specialist engineering resources, improve installation and  
16     maintenance efficiency, and drive lower costs and optimize inventory management of  
17     standardized materials.

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19     Standardized designs are already in use for distribution lines and stations. New designs  
20     currently under development include standardized generation connection designs.

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22     **3.3     Multi-year Work Programs**

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24     Moving from annual work releases to multi-year releases for programs enables long term  
25     vendor relationships to be contracted and work to be bundled and scheduled more  
26     effectively. Multi-year programs also enable resources to be scheduled beyond the  
27     current year so that specific materials, equipment, and resources can be allocated over the  
28     entire duration of the program.

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1 **3.4 Resource Modeling**

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3 By applying resource models to all planned work, Hydro One Distribution can now  
4 identify, well in advance, any developing gaps between the supply and demand for key  
5 resources in both transmission and distribution work programs. This information is being  
6 used to create staffing plans that are directly tied to the specific needs of the long-term  
7 work program and to identify in advance, work that will be outsourced.

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9 **3.5 Contracting Out**

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11 Contracting strategies to augment internal Hydro One personnel are being expanded in  
12 several areas: external “turnkey” contracts, for greenfield development projects,  
13 procurement of external engineering resources for generation connection design, and  
14 maximizing use of Hiring Hall resources. This will allow more internal resources to be  
15 available to execute core sustainment work and, will enable sharing of best practices  
16 between internal and external work execution groups.

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18 **3.6 Targeted Internal Resource Increases**

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20 Internal groups with accountability for work program execution are increasing their  
21 critical resources to accommodate the growing work program and to offset growing staff  
22 demographic attrition. Plans are underway to increase critical staff, particularly those  
23 that are required for both transmission and distribution work, and include:

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- 25 • Recruiting at optimal rates to absorb new staff
  - 26 • Apprenticeship programs increased to maximum legislated levels
  - 27 • Rebalancing of work to shift general tasks from highly skilled resources to more  
28 general labour

1 **3.7 University Training Programs**

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3 Specialized power system training programs have been developed with Waterloo,  
4 Western, McMaster and Ryerson Universities to increase the supply of suitably trained  
5 specialist engineering staff in future years.

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7 **4.0 SUMMARY**

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9 There are many factors changing the volume and characteristics of the future work  
10 program as well as in key enablers for successful completion. The efficiencies described  
11 above in work bundling, multi-year programs, and resource modeling initiatives will be  
12 facilitated by the Cornerstone project.

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14 Hydro One Distribution has developed a comprehensive strategy to maximize the  
15 decision making processes and the Company's execution capacity. Hydro One  
16 Distribution's new work execution strategy meets our customer's needs and improves  
17 overall system performance.