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Ontario Energy Board

Filing Requirements For
Electricity Distribution Rate Applications
- 2022 Edition for 2023 Rate Applications –
For Small Utilities

Chapter 5A

Small Utilities Distribution System Plan

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Appendix A

Chapter 5A Filing requirements for distribution system plans for electricity distribution cost of service rate applications for small utilities[1]

5.0 Introduction

These Chapter 5A filing requirements set out the relevant information required by the Ontario Energy Board (OEB) in accordance with the renewed regulatory framework (RRF) for electricity[2] and the Handbook for Utility Rate Applications (Handbook) to assess distributor applications involving planned expenditures on distribution systems and general plant. A Small Utility's Distribution System Plan (DSP) consolidates the documentation related to a distributor's asset management process and capital expenditure plan, as described in the Handbook.[3]

Good distributor planning is an essential prerequisite to the performance-based rate-setting approaches established under the Handbook, and necessary to ensure that the four performance outcomes the OEB has established for electricity distributors, namely Customer Focus, Operational Effectiveness, Public Policy Responsiveness, and Financial Performance[4], are being achieved.

5.0.1 Application and Scope

These filing requirements apply to licensed, rate regulated small electricity distribution utilities in Ontario when filing DSPs in accordance with the frequency set out by the OEB in section 5.1.3 of these requirements.

5.0.2 The OEB's Evaluation of DSPs

DSP filings must address whether a distributor has achieved and will continue to achieve the four performance outcomes the OEB has established for electricity distributors. Section 5.4.2 explains the specific criteria the OEB will use to evaluate whether a DSP, and in particular the material[5] projects/programs proposed for cost recovery in a DSP, addresses these four outcomes.[6]

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[1] Small utilities are defined as those with less than 30,000 customers
[2] The renewed regulatory framework for electricity is a comprehensive, performance-based approach to regulation that is based on the achievement of outcomes that ensure that Ontario's electricity system provides value for money for customers. See *Report of the OEB – A Renewed Regulatory Framework for Electricity Distributors: A Performance-Based Approach*. (the *RRF Report*); p. 2.
[3] Handbook for Utility Rate Applications, p.13
[4] Ibid, pp. 2-3
[5] An investment is "material" if the materiality threshold set out in Chapter 2A of the *Filing Requirements for Electricity Transmission and Distribution Applications* is met.
[6] Handbook for Utility Rate Applications, pp. 9-22

5.1 General & Administrative Matters

These filing requirements provide a standardized approach to a distributor's filings of asset management and capital expenditure plan information in support of a rate application. Distributors are expected to include and clearly identify in their filings the information set out in these filing requirements, and to use the terminology and formats set out in these filing requirements.

5.1.1 Purpose of Filing a Distribution System Plan

To implement the policy objectives of the RRF as set out in the Handbook, all filing requirements related to DSPs have been consolidated in Chapter 5A of the OEB's Filing Requirements for Electricity Distribution Rate Applications.

Filing a DSP with an application to the OEB will provide information to the OEB and interested stakeholders including, but not necessarily limited to, a distributor's approach to evaluating its performance, management of its assets, and capital investment plans.

5.1.2 Investment Categories

A distributor's investment projects and programs must be grouped for filing purposes into one of the four investment categories listed below.

Table 1 – Investment Categories & Example Drivers and Projects/Programs

	Example Drivers	Example Projects / Programs
system access	Customer service requests	– New customer connections – Modifications to existing customer connections – Expansions for customer connections or property development
	Other 3rd party infrastructure development requirements	– System modifications for property or infrastructure development (e.g., relocating pole lines for road widening)
	Mandated service obligations (DSC; Cond. of Serv.; etc.)	– Metering – Long term load transfer
system renewal	Assets/asset systems at end of service life due to: – Failure – Failure risk – Substandard performance – High performance risk – Functional obsolescence	– Programs to refurbish/replace assets or asset systems; e.g.,: batteries; cable (by type); cable splices; civil works; conductor; elbows & inserts; insulators; poles (by type); physical plant; relays; switchgear; transformers (by type); other equipment (by type)

	Example Drivers	Example Projects / Programs
system service	Expected changes in load that will constrain the ability of the system to provide consistent service delivery	– Property acquisition – Capacity upgrade (by type); e.g., phases; circuits; conductor; voltage; transformation; regulation – Line extensions
	System operational objectives: – Safety – Reliability – Power quality – System efficiency – Other performance/functionality	– Protection & control upgrade; e.g., reclosers; tap changer controls/relays; transfer trip – Automation (new/upgrades) by device type/function – Supervisory control and data acquisition (SCADA) – Distribution loss reduction
general plant[1]	– System capital investment support – System maintenance support – Business operations efficiency – Non-system physical plant	– Land acquisition – Structures & depreciable improvements – Equipment and tools – Supplies – Finance/admin/billing software & systems – Rolling stock – Intangibles (e.g., land rights; capital contributions to other utilities)

Note: 1. Includes only 1900 series accounts.

- ***System access*** investments are modifications (including asset relocation) to a distributor's distribution system that a distributor is obligated to perform to provide a customer (including a generator customer) or group of customers with access to electricity services via the distribution system.
- ***System renewal*** investments involve replacing and/or refurbishing system assets to extend the original service life of the assets and thereby maintain the ability of the distributor's distribution system to provide customers with electricity services.
- ***System service*** investments are modifications to a distributor's distribution system to ensure the distribution system continues to meet distributor operational objectives while addressing anticipated future customer electricity service requirements.
- ***General plant*** investments are modifications, replacements or additions to a distributor's assets that are not part of its distribution system including land and buildings, tools and equipment, rolling stock and electronic devices and software used to support day to day business and operations activities.

A project or program involving two or more drivers associated with different categories should be placed in the category corresponding to the trigger driver. For example, a project triggered by the need to replace end of service life components in a distribution station should be considered a system renewal investment, even if in anticipation of future system requirements (a system service driver) the project includes assets rated for a

higher voltage and/or capable of handling reverse flows. Note, however (as detailed in section 5.4.2), information on all drivers of a given project or program must be used to justify the need for, and quantum of proposed capital investments.

5.1.3 Timing of Filing

All distributors are required to file a DSP when filing a cost of service application under a Price Cap Incentive Rate-setting (IR) or a Custom IR application (collectively referred to as rebasing applications). Distributors proposing to use the Annual IR Index method are not required to file a DSP when filing an application.

The OEB may also require a DSP to be filed in relation to a leave to construct, an Incremental Capital Module or a Z-factor application.

5.2 Distribution System Plans

Distributors are encouraged to organize the required information using the section and subsection headings indicated from here onwards.

The DSP's duration is a minimum of ten years in total, comprising of an historical period and a forecast period. The historical period is the first five years of the DSP duration, consisting of five historical years, ending with the bridge year. For distributors that have not filed a DSP within the past five years, the historical period is from the test year of a distributor's last cost or service application to the bridge year. The forecast period is the last five years of the DSP duration, consisting of five forecast years, beginning with the test year.

5.2.1 Distribution System Plan Overview

The distributor must provide a high-level overview of the information filed in the DSP, which should include capital investment highlights and changes since the last DSP. Utilities are encouraged not to repeat details contained in the DSP, but rather provide a broad overview. A distributor should list out the objectives it plans to achieve through this DSP. This DSP will be used to inform and potentially support any requests for incremental capital module (ICM) funding during the 5-year DSP term.

5.2.2 Coordinated Planning with Third Parties

A distributor must demonstrate that it has met the OEB's expectations in relation to coordinating infrastructure planning with customers (e.g., large customers, subdivisions developers, and municipalities), the transmitter (e.g., Regional Infrastructure Planning), other distributors, the Independent Electricity System Operator (IESO) (e.g., Integrated Regional Resource Planning) or other third parties where appropriate. A distributor should

explain whether the consultation(s) affected the distributor's DSP as filed and if so, a brief explanation as to how. For consultations that affect the DSP, a distributor should provide an overview of the consultation, relevant material used in the consultation, and where a final deliverable is available, attach a copy of the final deliverable.[7]

Renewable Energy Generation (REG)

A distributor is expected to coordinate with the IESO in relation to REG investments and confirm if there are no REG investments in the region.

If there are REG investments proposed in the DSP, a distributor should demonstrate that it has coordinated with the IESO, other distributors, and/or transmitters, as applicable, and that the investments proposed are consistent with a Regional Infrastructure Plan. This coordination is demonstrated by a comment letter provided by the IESO.

5.2.3 Performance Measurement for Continuous Improvement

Distribution System Plan

Distributors are expected to summarize objectives for continuous improvement (e.g., reliability improvement, number of replaced assets, and other desired outcomes) the distributor set out to address in its last DSP and to discuss whether these objectives have been achieved or not. For objectives not achieved, a distributor should explain how it affects this DSP and, if applicable, improvements a distributor has implemented to achieve the objectives set out in this DSP Section 5.2.1.

Service Quality and Reliability

Chapter 7 of the OEB's *Distribution System Code* outlines the OEB's expectations regarding Service Quality Requirements (SQR) for Electricity Distributors. A distributor is required to provide the reported SQRs for the last five historical years. A distributor should also provide explanations for material changes in service quality and reliability, and whether and how the DSP addresses these issues. The OEB expects any five-year declining trends in reliability for SAIDI and SAIFI to be explained. If a distributor has

[7] This could include but not limited to Integrated Regional Resource Planning, Regional Infrastructure Planning, Renewable Energy Generation Planning, Municipal Plans, and Connection & Cost Recovery Agreements

reliability targets established in a previously filed DSP, as described below, any under-performance should also be explained.

A completed Appendix 2-G, documenting both the Service Quality and Service Reliability indicators, must be filed. A distributor must confirm that data is consistent with the scorecard or must explain any inconsistencies.

A summary of performance for the historical period using the methods and measures (metrics/targets) identified and described above, and how this performance has trended over the period. This summary must include historical period data on[8]:

- All interruptions
- All interruptions excluding loss of supply
- All interruptions excluding Major Events and loss of supply for the following:
    - The distribution system average interruption frequency index (SAIFI)
    - System average interruption duration index (SAIDI)[9]

  The applicant should also provide a summary of Major Events that occurred since the last Cost of Service (CoS) filing.

  For each cause of interruption, a distributor should, for the last five historical years, report the following data:

- Number of interruptions that occurred as a result of the cause of interruption
- Number of customer interruptions that occurred as a result of the cause of interruption
- Number of customer-hours of interruptions that occurred as a result of the cause of interruption

Distributor Specific Reliability Targets

As established in the *Report of the OEB: Electricity Distribution System Reliability Measures and Expectations*[10], distributors' SAIDI and SAIFI performance is expected to meet the performance target set out in the Scorecard. A distributor who wishes to establish performance expectations based on something other than historical performance should provide evidence of its capital and operational plan and other factors

[8] Note: The information in this section were originally from Chapter 2.2.2.8.
[9] The data should be calculated as stipulated in section 2.1.4.2 of the OEB's Reporting and Record Keeping Requirements.
[10] EB-2014-0189, issued August 25, 2015

that justify the reliability performance it plans to deliver. Distributors should also provide a summary of any feedback from their customers regarding the reliability of the LDC's distribution system.

Distributors who wish to use SAIDI and SAIFI performance benchmarks that are different than the historical average must provide evidence to support the reasonableness of such benchmarks.

5.3 Asset Management Process

A distributor must use an asset management process to plan, prioritize, and optimize expenditures. The purpose of the information requirements set out in this section is to provide the OEB and stakeholders with an understanding of the distributor's asset management process, and the links between the process and the expenditure decisions that comprise the distributor's capital investment plan.

5.3.1 Planning Process

The distributor must provide an overview of its planning process that has informed the preparation of the distributor's five-year capital expenditure plan (a flowchart accompanied by explanatory text may be helpful).

A distributor should provide a summary of any important changes to the distributor's asset management process (e.g., enhanced asset data quality or scope, improved analytic tools, process refinements, etc.) since the last DSP filing.

Process

A distributor should provide the processes used to identify, select, prioritize (including reprioritizing investments over the five-year term), and pace the execution of investments over the term of the DSP. A distributor should be able to demonstrate that it has considered the correlation between its capital plan and customers' needs. A distributor should also demonstrate that is has considered the potential risks of proceeding/not proceeding with individual capital expenditures (e.g., the risk/benefit of a reactive service transformer replacement program instead of proactively replacing service transformers).

A distributor should consider, where applicable, assessing the use of non-distribution alternatives, cost-effective implementation of distribution improvements affecting reliability and meeting customer needs at acceptable costs to customers, other innovative technologies, and consideration of distribution rate funded Conservation and Demand Management (CDM) programs.

Data

A distributor should identify, describe, and provide a summary of the data used in the processes above to identify, select, prioritize, and pace the execution of investments over the term of the DSP (e.g., asset condition by major asset type and reliability information).

5.3.2 Overview of Assets Managed

Assessment of DSPs requires a comprehensive understanding of all aspects of the assets managed by a distributor. Distributors may vary in terms of the level of detail that it chooses to record for its distribution assets but the expectation is that in assessing the condition of major assets (e.g., station transformers and poles), solely using asset age is not sufficient.

A distributor should provide an overview of its distribution service area (e.g., system configuration; urban/rural; temperate/extreme weather; underground/overhead; fast/slow economic growth) pertinent for supporting its capital expenditures over the forecast period. A distributor should provide asset information (e.g., asset capacity and utilization; asset condition; asset risks; and asset demographics), by major asset type, that may help explain the specific need of the capital expenditures and demonstrate that a distributor has considered all economical alternatives. There should also be a statement as to whether or not the distributor has had any transmission or high voltage assets (> 50kV) deemed previously by the OEB as distribution assets, and whether or not there are any such assets that the distributor is asking the OEB to deem as distribution assets in the present application.

A distributor should also provide a description of whether the distributor is a host distributor (i.e., distributing electricity to another distributor's network at distribution-level voltages) and/or an embedded distributor (i.e., receiving electricity at distribution-level voltages from any host distributor(s)). The distributor must identify any embedded and/or host distributor(s). Partially embedded status (i.e., where part of the distributor's network is served by one or more host distributors but where the utility is also connected to the high voltage transmission network) must be clearly identified, including the percentage of load that is supplied through the host distributor(s). If the distributor is a host distributor, the distributor should identify whether there is a separate Embedded Distributor customer class or if any embedded distributors are included in other customer classes (such as GS > 50 kW).

5.3.3 Asset Lifecycle Optimization Policies and Practices

An understanding of a distributor's asset lifecycle optimization policies and practices will support the regulatory assessment of system renewal investments and decisions to refurbish rather than replace system assets. Information provided should be sufficient to show the trade-off between spending on new capital (i.e., replacement) and life-extending refurbishment. A distributor should also be able to demonstrate that it has carried out system O&M activities to sustain an asset to the end of its service life (can include references to the Distribution System Code).

A distributor should explain the processes and tools it uses to forecast, prioritize, and optimize system renewal spending and how a distributor intends to operate within budget envelopes. For prioritizing capital expenditures, a distributor should help the reviewer understand the approaches a distributor uses to balance a customer's need for reliability and capital expenditure costs. A distributor should also demonstrate that it has considered the potential risks of proceeding/not proceeding with individual capital expenditures.

A distributor should provide a summary of any important changes to the distributor's asset life optimization policies and processes since the last DSP filing.

5.3.4 System Capability Assessment for Renewable Energy Generation

If a distributor has costs to accommodate and connect renewable generation facilities that will be the responsibility of the distributor under the DSC, and are therefore eligible for recovery through the provincial cost recovery mechanism set out in section 79.1 of the *Ontario Energy Board Act, 1998*, then a distributor should refer to Appendix A.

5.3.5 Rate-Funded Activities to Defer Distribution Infrastructure

The OEB has established Conservation and Demand Management Requirement Guidelines for Electricity Distributors (the CDM Guidelines)[11] that allow electricity distributors to seek distribution rate funding for CDM programs and other initiatives for the purposes of avoiding or deferring infrastructure investments. These CDM Guidelines are being updated, and the new version will be effective for applications for 2023 rates.

Any application for CDM funding to defer infrastructure must include a consideration of the projected effects to the distribution system on a long-term basis and the forecast expenditures. Distributors must explain the proposed program in the context of the distributor's DSP or explain any changes to its system plans that are pertinent to the

[11] EB-2014-0278, updated on August 11, 2016.

program. Distributors may apply to the OEB for funding through distribution rates for CDM projects as specified in the CDM Guidelines.

5.4 Capital Expenditure Plan

The capital expenditure plan should set out and comprehensively justify a distributor's proposed expenditures on its distribution system and general plant over a five-year planning period, including investment and asset-related operating and maintenance expenditures.

A distributor's DSP details the system investment decisions developed on the basis of information derived from its planning process. It is critical that investments be justified in whole or in part by reference to specific aspects of that process. As noted in section 5.2 above, a DSP must include information on the historical and forecast period.

5.4.1 Capital Expenditure Summary

The purpose of the information filed under this section is to provide a snapshot of a distributor's capital expenditures over a 10 year period, including five historical years and five forecast years. Despite the multi-purpose character a project or program may have, for summary purposes the entire cost of individual projects or programs are to be allocated to one of the four investment categories on the basis of the primary (i.e. initial or trigger) driver of the investment. For material projects/programs, a distributor must estimate and allocate costs to the relevant investment categories when providing information to justify the investment, as this assists in understanding the relationship between the costs and benefits attributable to each driver underlying the investment. In any event, the categorization of an individual project or program for the purposes of these filing requirements should not in any way affect the proper apportionment of project costs as per the DSC.

The distributor must provide completed appendices 2-AA and 2-AB along with the following information about a distributor's capital expenditures:

- An analysis of a distributor's capital expenditure performance for the DSP's historical period. This should include an explanation of variances by investment or category, including that of actuals versus the OEB-approved amounts for the applicant's last OEB-approved CoS or Custom IR application and DSP. A distributor should particularly explain variances in a given year that are much higher or lower than the historical trend.

- An analysis of a distributor's capital expenditures for the DSP's forecast period. For capital investments that have a project life cycle greater than one year, the

proposed accounting treatment, including the treatment of the cost of funds for construction work-in-progress.

- An analysis of capital expenditures in the DSP's forecast period as compared to the historical period.

System O&M costs are also shown to reflect the potential impact, if any, of capital expenditures on routine system O&M. A distributor is expected to consider the reduction in O&M costs when planning capital investments. A description of the impacts of capital expenditures on O&M must be given for each year, or a statement that the capital plans did not impact O&M costs. A distributor must consider the trade-offs between capital and O&M when assessing alternative options to a capital investment.

A statement should be provided that there are no expenditures for non-distribution activities in the applicant's budget.

5.4.2 Justifying Capital Expenditures

As indicated in Chapter 1, the onus is on a distributor to provide the data, information and analyses necessary to support the capital-related costs upon which the distributor's rate proposal is based. Filings must enable the OEB to assess whether and how a distributor's DSP delivers value to customers, including by controlling costs in relation to its proposed investments through appropriate optimization, prioritization and pacing of capital-related expenditures. A distributor should also keep pace with technological changes and integrate cost-effective innovative investments and traditional planning needs such as load growth, asset condition and reliability.

A distributor must not only provide information to justify each individual investment, but also the total amount of its proposed capital expenditures. A distributor should provide context on how its overall capital expenditures over the next five-years, as a whole, will achieve the distributor's objectives. Particularly, a distributor should comment on lumpy investment years and rate impacts of capital investments in the long-term.

5.4.2.1 Material Investments

The focus of this section is on projects/programs that meet the materiality threshold set out in Chapter 2A of the *Filing Requirements for Electricity Distribution Rate Applications*. However, distributors are encouraged in all instances to consider the applicability of these requirements to ensure that all investments proposed for recovery in rates, including those deemed by the applicant to be distinct for any other reason (e.g., unique characteristics; marked divergence from previous trend) are supported by evidence that enables the OEB's assessment according to the evaluation criteria set out below. The

level of detail filed by a distributor to support a given investment project/program should be proportional to the materiality of the investment. The following are guidelines on the information to be provided for any material investment.

A. General Information on the project/program

A distributor needs to provide information about the investment, which includes the need, scope, key project timings (including key factors that affect timing), total expenditures (including capital contributions and the economic evaluation as per section 3.2 of the Distribution System Code, as applicable), comparative historical expenditures, investment priority, alternatives considered, and the cost benefit of the recommended alternative. As well, a description of the innovative nature of the investment, if applicable, should be included.

B. Evaluation criteria and information requirements for each project/program

The OEB evaluates material investments based on the outcomes set out in section 5.0.2. Efficiency, customer value, reliability, and safety are the primary criteria for evaluating any material investment.

A distributor should demonstrate the need for the investment, which generally should be related to a distributor's asset management process. There could also be instances where the need is to address safety, cyber security, grid innovation, environmental, statutory obligations, or regulatory obligations. A distributor should provide adequate support in justifying the need for investments that are not outcomes of the asset management process.

Justifying an investment can be demonstrated through evidence of accepted utility practices or cost-to-benefit analysis of alternatives. It is also helpful to show past costs for similar Investments and the outcomes the distributor observed to support the requested capital investments. Where a capital investment substantially exceeds the materiality threshold (e.g., CIS, GIS, new office building) the distributor should file a business case documenting the justifications for the expenditure, alternatives considered, benefits for customers (short/long term), and impact on distributor costs (short/long term).

A distributor should consider opportunities to defer or avoid future infrastructure through CDM, as described in the CDM Guidelines. To propose a CDM initiative funded through distribution rates, a distributor should provide the number of years the proposed CDM program would be in place and the number of years that the required infrastructure would be deferred, a cost-to-benefit analysis, and if advance technology has been incorporated.

Consistent with the OEB's objective of facilitating innovation in the electricity sector, innovative projects and programs may receive special consideration. Innovation has

broad meaning: it can relate to the use of a new technology, or new ways in which to use existing technologies. It could also include innovative business practices, including relationships with others to enhance services to customers and share costs.

The distributor should explain how the innovative project is expected to benefit its customers, such as improved reliability, enhanced customer services, conservation and demand management, efficient use of electricity, load management, greater efficiency through grid optimization, lower rates (long-term or short-term), enhanced customer choice, or any other benefit consistent with the OEB's mandate and policies. Projects that allow for testing before deploying at scale or provide valuable data and/or learnings are encouraged. Distributors can seek guidance through the OEB's Innovation Sandbox prior to proposing a project.

Appendix A

System Capability Assessment for Renewable Energy Generation

This appendix is applicable to distributors with costs to accommodate and connect renewable generation facilities that are eligible for recovery through the provincial cost recovery mechanism set out in section 79.1 of the *Ontario Energy Board Act, 1998*

A distributor's investments to accommodate and connect REG (including connection assets, expansions and/or renewable enabling improvements) are part of its DSP. This includes all costs to connect renewable generation facilities that will be the responsibility of the distributor under the DSC, and are therefore eligible for recovery through the provincial cost recovery mechanism set out in section 79.1 of the *Ontario Energy Board Act, 1998*. REG investments can be stand-alone or integrated into a project/program; and are to be categorized for the purposes of section 5.4 in the same way as any other investment.

A distributor should provide information on the capability of its distribution system to accommodate REG, including a summary of the distributor's load and renewable energy generation connection forecast by feeder/substation (where applicable); and information identifying specific network locations where constraints are expected to emerge due to forecast changes in load and/or connected renewable generation capacity.

In relation to renewable or other distributed energy generation connections, the information that must be considered by a distributor and documented in an application (where applicable) includes:

a) Applications from renewable generators over 10 kW for connection in the distributor's service area

b) The number and the capacity (in MW) of renewable generation connections anticipated over the forecast period based on existing connection applications, information available from the IESO and any other information the distributor has about the potential for renewable generation in its service area (where a distributor has a large service area, or two or more non-contiguous regions included in its service area, a regional breakdown must be provided)

c) The capacity (MW) of the distributor's distribution system to connect renewable energy generation located within the distributor's service area

d) Constraints related to the connection of renewable generation, either within the distributor's system or upstream system (host distributor and/or transmitter)

e) Constraints for an embedded distributor that may result from the connections