



## **Distributed Energy Resources**

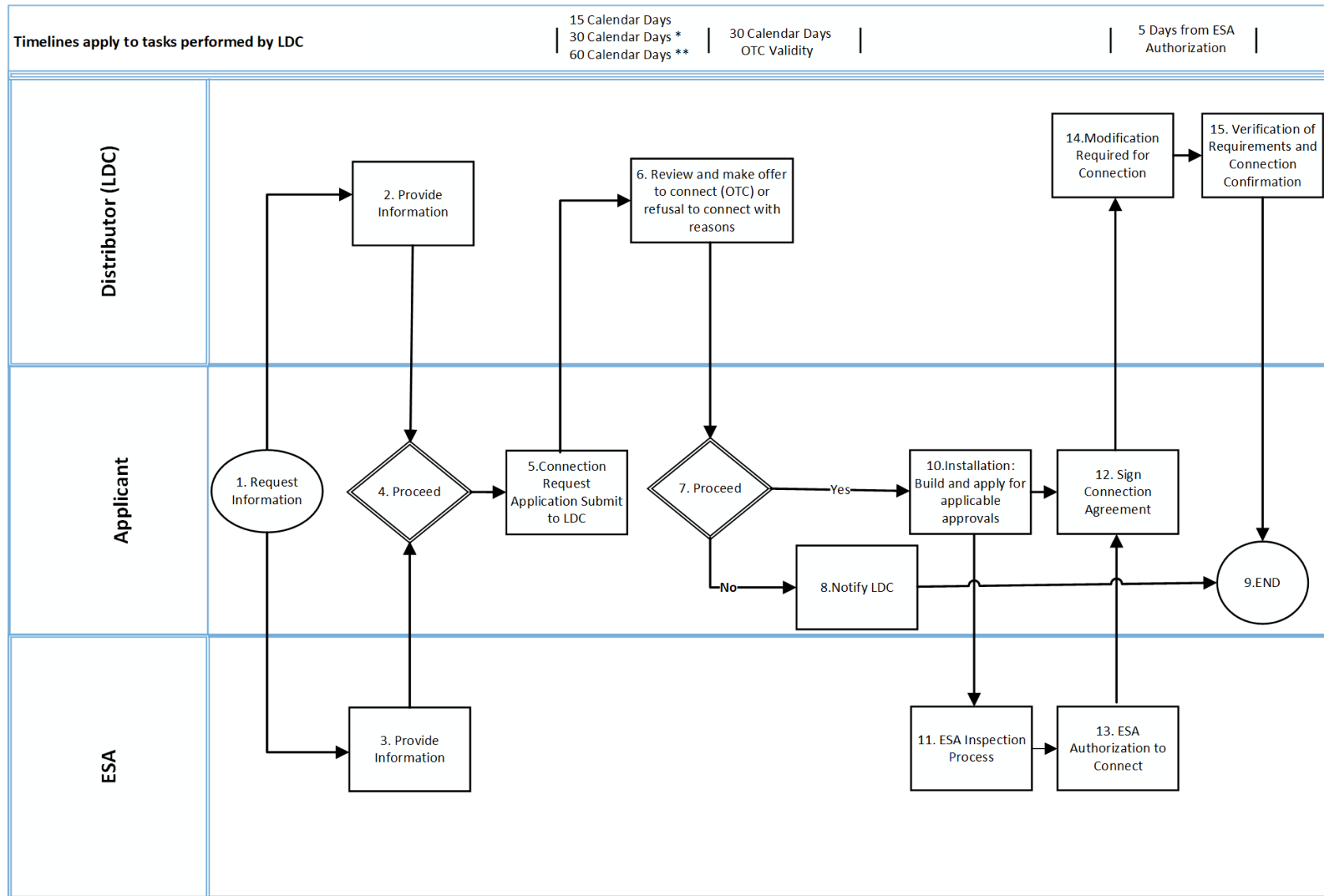
### **Connection Processes**

## 1.1. Processes

### 1.1.1. Micro Embedded Generation Facility

Micro-embedded generation facilities are equal to or less than 10 kW and are considered to pose a relatively low connection risk to the distribution system compared to larger generation facilities. The process flowchart is outlined below in *Figure 2: Flowchart of Timelines and Responsibilities for Micro Embedded Generation Facility Connection*. The distributor (in accordance with Section 6.2.6 of the DSC) and applicant are expected to follow the process steps outlined below.

## DER Connections: Micro-embedded Generation Facility≤10kW



\* If at existing connection and site assessment needed

\*\*If not located at existing customer connection

Figure 2: Flowchart of Timelines and Responsibilities for Micro Embedded Generation Facility Connection

Step 1 The applicant proposing the installation of a micro-embedded generation facility with a non-exporting connection contacts the distributor and the Electrical Safety Authority (ESA) to gather connection and process information.

Step 2 The distributor makes the information available to the applicant in a timely manner. The information package will include the description of the connection process approvals needed by the distributor for connection; technical requirements including metering; contractual requirements (Micro-Embedded Generation Facility Connection Agreement); and application forms.

Step 3 ESA provides information on Electrical Safety Requirements

Step 4 The applicant reviews relevant information from the distributor and the ESA on the project, and prepares:

- an installation plan, including the size/type of generation facility (i. e. load displacement/net metering/isolated from distribution system/grid connection); and
- a project plan.

Step 5 The applicant submits application to the distributor to review

Step 6 The distributor makes an offer to connect the approved DER or provides its refusal to connect with reasons within 15 calendar days

The distributor's review of an Application submitted for the connection of a micro-embedded generation facility at the existing customer connection will include:

- typical requirement for new meter only;
- check for service upgrade requirement;
- check for significant amount of other generation on feeder;
- response to the applicant with an offer to connect or refusal
- response to applicant with requirements specific to the connection (typically requirements for metering) and costs, timing to implement, etc.

Step 7 The applicant decides whether to proceed with the connection process.

Step 8. The applicant notifies the distributor that it has decided not to proceed with the connection application.

Step 9. The applicant ends the process.

Step 10 The applicant must indicate its intention to connect within the 30-day validity period of the offer to connect. The applicant must work closely with the distributor, the ESA and any other organizations from which work, inspections, approvals, or licenses are required to prevent delays.

The activities will be planned in coordination with project milestones, and it is up to the applicant to initiate actions at the required times.

Step 11 Where required by the ESA, the applicant must file a notification to receive an ESA Authorization to Connect

Step 12 The applicant reviews and signs the Connection Agreement

Step 13 ESA provides an Authorization to Connect when the installation meets all the applicable requirements of the Ontario Electrical Safety Code as determined by ESA.

Step 14 The distributor completes any work required to facilitate the connection to the distribution system

Step 15 The distributor works with the applicant to complete the connection including any testing and verification requirements

- 1.1.2. For an existing customer connection where a site assessment is not required, the distributor will make an offer to connect within 15 days of receiving a completed application or provide reasons for refusing to connect.
- 1.1.3. The distributor will not charge to prepare the offer to connect outlined in section 5.3.2 above.
- 1.1.4. For new projects where a site assessment is required, the distributor will make the offer to connect within 60 days of receiving a completed application or provide reasons for its refusal.
- 1.1.5. In all cases, the offer will be open for 30 days after it is provided after which it may be revoked by the distributor.
- 1.1.6. If a site assessment is needed, the distributor may charge a \$500 connection deposit for preparing the offer to connect, which shall be payable in the form of cash, cheque, electronic funds transfer, letter of credit from a bank, or surety bond.
- 1.1.7. If the distributor refuses the connection after a site visit, it will return the deposit within 30 days.
- 1.1.8. If the DER applicant does not accept the offer or withdraws its application, the distributor will keep the deposit.
- 1.1.9. If actual connection costs are less than the deposit, the distributor will refund the difference when the connection is completed and in service.
- 1.1.10. Interest shall accrue monthly on connection deposits made by way of cash or cash equivalents commencing on receipt of the total deposit required by the distributor. The interest rate shall be at the Prime Business Rate as published on the Bank of Canada website less 2 percent, updated quarterly. Refunds, in whole or part, of deposits made in cash or cash equivalents will include interest on the refunded amount from the date of receipt.

- 1.1.11. A DER applicant must notify the distributor that it has satisfied all applicable service conditions and received all necessary approvals including confirmation of issuance of the authorization to connect from the ESA.
- 1.1.12. The applicant must enter into a Connection Agreement and pay the required connection costs, including costs for any necessary new or modified metering.
- 1.1.13. Once these conditions have been satisfied, the distributor shall connect the DER applicant's micro-embedded generation facility to its distribution system within 5 business days, or at such later date as agreed to by the DER applicant and the distributor.
- 1.1.14. The distributor must meet the five-day requirement for connection 90 percent of the time on a yearly basis.

## 1.2. Processes for Small, Mid-Sized, and Large Embedded Generation Facility Projects

The processes for small, mid-sized, and large embedded generation facilities are similar with the difference primarily being the number of impact assessments that may be applicable. Unlike the micro-embedded generation facility process, the connection process for small, mid-sized, and large embedded generation facilities includes a common screening process on application intake.

## 1.3. Screening Process for Small, Mid-sized, and Large Embedded Generation Facility Projects

CIA applications are subject to a review for completeness, i.e. a screening process. The screening process is intended to provide feedback to the applicant early in the process on any deficiencies in their submission that would prevent a distributor from proceeding with a review. Upon submission of an application, the distributor confirms if the application is substantially complete. A substantially complete application is a submission in which there is sufficient information provided for the distributor to process the application and complete the CIA. To aid an applicant in determining the information requirements that a distributor would typically deem as being sufficient information, a sample application package has been provided in the Appendix C(vii).

The sample application package includes:

- Completed application
- Single line diagram sample
- Protection philosophy sample
- Submission checklist

In order to facilitate timely processing of applications, payment<sup>3</sup> for the applicable studies should be included with the submission when possible. The fees for required studies and assessments should be identified on the distributor's website and in the Preliminary Consultation Report.

If the application is incomplete, the distributor will return the incomplete part of the application package to the applicant with a deficiency notification identifying the error and omissions in the application. Upon receipt of a deficiency notification, an applicant should review and correct the application and resubmit the revised application within 14 days. If the application is not returned in 14 days, the application may lose its position in the processing queue.

Upon receipt of a revised CIA application, the distributor must review the application within 7 days to determine if there is sufficient information for the distributor to process the application. If there is sufficient information, the submission is deemed substantially complete and the distributor will reconfirm that the distribution and transmission capacity that was available at the PCR stage is still available. Please note that capacity is not reserved until the CIA is completed. If capacity is available, the application is added to the processing queue and the distributor will proceed with a CIA. This begins the 60-day window for the distributor to return the completed CIA to the DER applicant.

The process flowchart for determining the status of an application using the screening process is outlined in *Figure 3: Flowchart for Screening Process to Check that an Application is Substantially*

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<sup>3</sup> Distributors are to identify required study cost in the Preliminary Consultation Report.

*Complete.* The corresponding procedure steps for the distributor and applicant to follow are outlined below the flowchart.

# Connection Impact Assessment: Screening Process

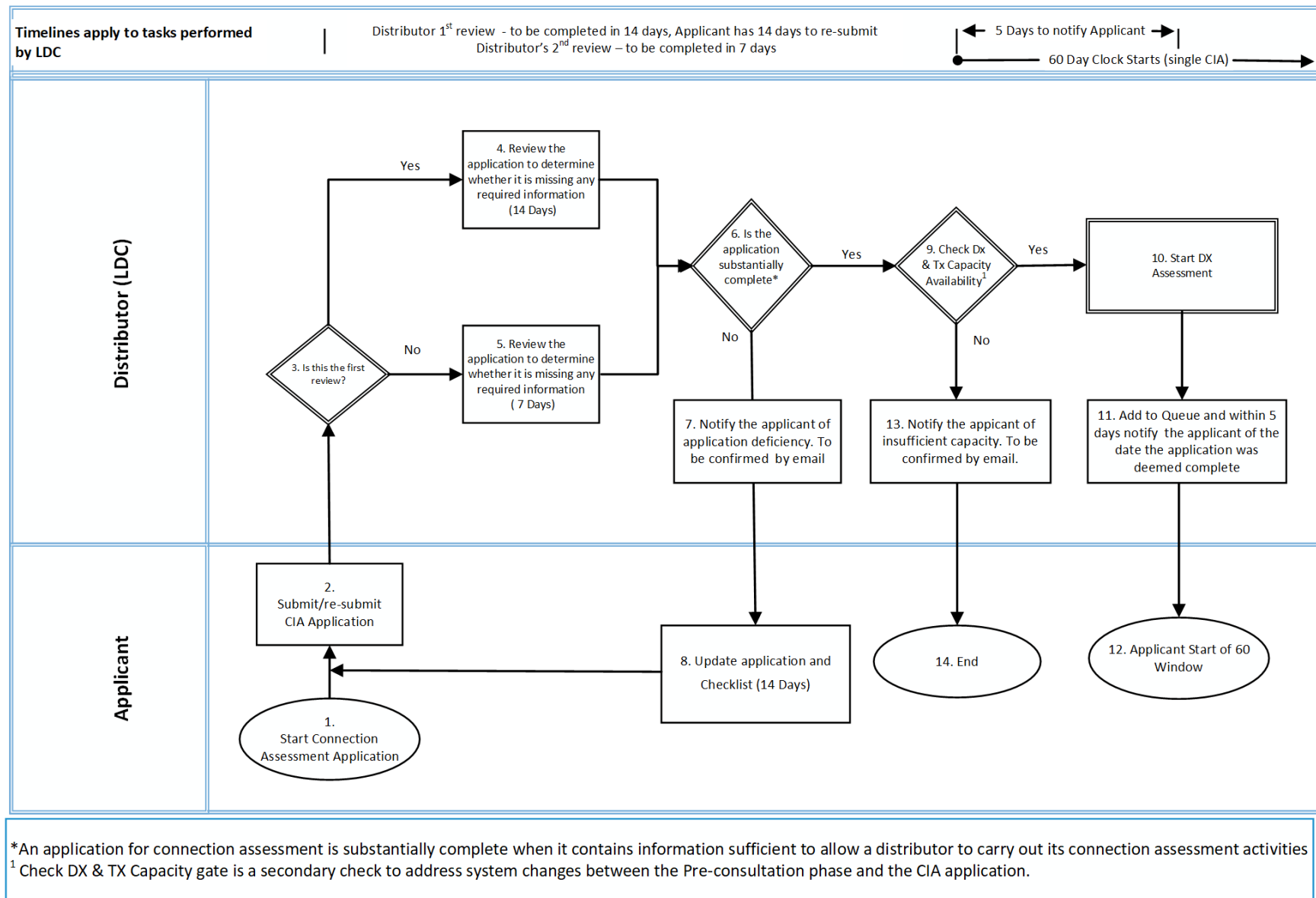


Figure 3: Flowchart for Screening Process to Check that an Application is Substantially Complete

Step 1. The applicant initiates the CIA Application and gathers the current application form and Distributor's application requirements.

Step 2. The applicant submits the completed CIA Application package, including completed application form, payment for required studies, attachments, and application checklist.

Step 3. The distributor determines if this is the initial submission or a revised application submission.

Step 4. For initial submissions, the Distributor reviews the application for completeness within 14 calendar days.

Step 5. For revised application submissions, the Distributor reviews the application for completeness within 7 calendar days.

Step 6. For the completeness check outlined in steps 4 and 5 above, the distributor will review the application to determine if there is sufficient information provided by the applicant to process the submission. Once the distributor determines that the submission provides the necessary information to commence a CIA study, the application is deemed substantially completed.

Step 7. For submissions that are not substantially complete, the distributor will notify the applicant of the application deficiencies via email or letter if the applicant's email is not provided. The deficiency notification shall identify any errors and omissions in the application that would prevent the distributor from proceeding with the CIA. The notification shall outline the available remedies required to have the application deemed substantially complete.

Step 8. On receipt of a deficiency notification, an applicant should review and revise the application to address the deficiencies and resubmit the application. The process allows 14 days for the applicant to resubmit a revised application. If the applicant does not return the revised application within 14 days, the distributor may remove the application from the processing queue. If the application is removed from the queue, it may be treated as a new application once it is resubmitted.

Step 9. For submissions that are deemed substantially complete, the distributor will reconfirm<sup>4</sup> transmission and distribution capacity availability.

Step 10. If capacity is confirmed to be available, the distributor proceeds with the assessment.

Step 11. The distributor will add the application to the processing queue in the order in which they are deemed substantially complete and within 5 days notify the applicant of the date the application was deemed substantially complete.

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<sup>4</sup> This is a secondary check to address the possibility of system changes between the Preliminary Consultation phase and the CIA application.

Step 12. The date the submission is deemed substantially complete starts the timed-day window for the distributor to send the completed connection impact assessment to the applicant and proceed with the connection agreement.

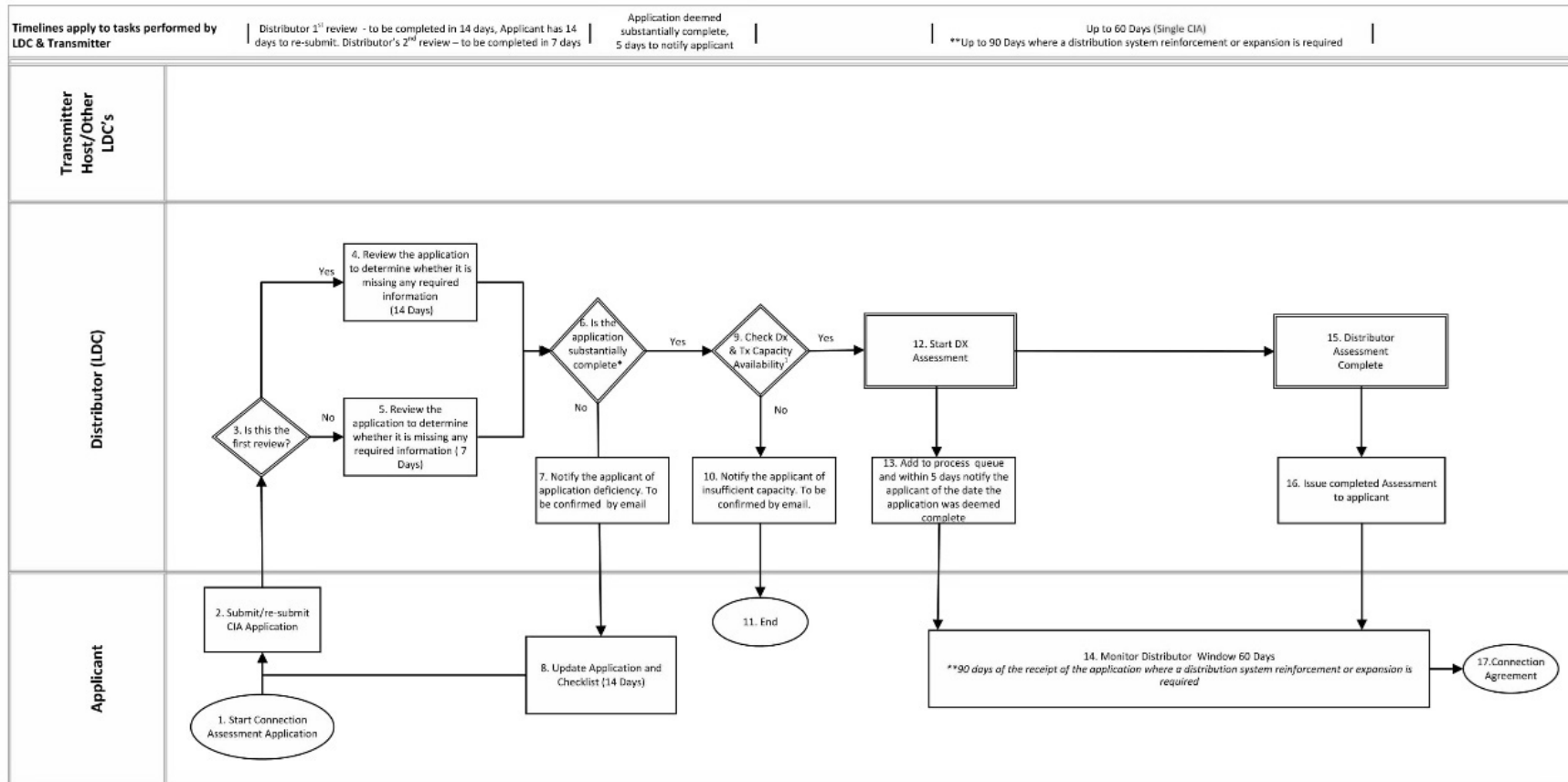
Step 13. If available capacity is not confirmed, the distributor will notify the applicant via email that capacity is not available to support the connection

Step 14. If there is no capacity available, the process concludes.

#### 1.4. Small Embedded Generation Facility

The screening process ends when the application is deemed to be substantially complete. i.e., there is enough information to begin processing the CIA. The process flowchart is outlined in Figure 4: Flowchart of Timelines and Responsibilities for Small Embedded Generation Facility Connection. The corresponding procedure steps for the distributor and applicant are outlined below the flowchart.

## Connection Impact Assessment Process for Small Embedded Generation Facility



\*An application for connection assessment is substantially complete when it contains information sufficient to allow a distributor to carry out its connection assessment activities

1. Check DX & TX Capacity gate is a secondary check to address system changes between the Pre-consultation phase and the CIA application.

Figure 4: Flowchart of Timelines and Responsibilities for Small Embedded Generation Facility Connections

Step 1. The applicant initiates the CIA process and gathers the current CIA application form and distributor's application requirements from the distributor.

Step 2. The applicant submits the completed CIA Application package, including completed application form, payment for required studies, attachments, and application checklist.

Step 3. The distributor determines if this is the initial submission or a revised application submission.

Step 4. For initial submissions, the distributor reviews the application for completeness within 14 calendar days.

Step 5. For revised application submissions, the distributor reviews the application for completeness within 7 calendar days.

Step 6. For the completeness check outlined in steps 4 and 5 above, the distributor will review the application to determine if there is sufficient information provided by the applicant to process the submission. Once the distributor determines that the submission provides the necessary information to commence a CIA study, the application is deemed substantially completed.

Step 7. For submissions that are not substantially complete, the distributor will notify the applicant of the application deficiencies via email or letter if the applicant's email is not provided. The deficiency notification shall identify any errors and omissions in the application that would prevent the distributor from proceeding with the CIA. The notification shall outline the available remedies required to have the application deemed substantially complete.

Step 8. On receipt of a deficiency notification, the applicant should review and revise the application to address the deficiencies and resubmit the application. The process allows 14 days for the applicant to resubmit a revised application. If the applicant does not return the revised application within 14 days, the distributor may remove the application from the processing queue. If the application is removed from the queue, it may be treated as a new application once it is resubmitted.

Step 9. For submissions that are deemed substantially complete, the distributor will reconfirm<sup>5</sup> transmission and distribution capacity availability.

Step 10. The distributor will notify the DER applicant via email if there is no capacity available to support the connection.

Step 11. If there is no capacity available, the process concludes. .

Step 12. If capacity is confirmed to be available, the distributor proceeds with the assessment

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<sup>5</sup> This is a secondary check to address the possibility of system changes between the Preliminary Consultation phase and the CIA application.

Step 13. The distributor will add applications to the processing queue in the order in which they are deemed substantially complete and within 5 days will notify the DER applicant of the date the application was deemed substantially complete.

Step 14. The date the submission is deemed substantially complete starts the 60-day or 90-day window set out in Step 16, below.

Step 15. The distributor completes the CIA

Step 16. The distributor will provide with its CIA assessment a detailed cost estimate of the proposed connection and an offer to connect within:

- i. 60 days of the receipt of the substantially complete application where no distribution system reinforcement or expansion is required; or
- ii. 90 days of the receipt of the substantially complete application where a distribution system reinforcement or expansion is required

Step 17 The process moves onto the connection agreement phase.

### 1.5. Mid-sized / Large Embedded Generation Facility

Mid-sized and Large embedded generation facilities as classified in Table 1, are also subject to the screening process. Once they are deemed substantially complete, they will be assessed. The CIA process for the connecting distributor is essentially the same as for the small projects. If the connecting distributor is embedded in a host distributor, Mid-sized and Large embedded generation facilities must also have an assessment from the host distributor and a study from the upstream transmitter to assess the impact on the transmitter's system. Large projects also require a System Impact Study from the IESO to assess their impact on the IESO-administered grid. The flowchart in Figure 5 below shows the responsibilities of the various stakeholders and the expected task completion timeline. The distributor has responsibility for providing information to the upstream reviewers to ensure that the reviews occur as near to concurrently as is possible. In any case, the distributor is responsible for finishing its review within 60 days of the application being substantially complete for mid-sized embedded generation facilities and within 90 days of the application being substantially complete for large embedded generation facilities. Where a host distributor CIA is also required, these timelines will be increased by a further 15 days.

## Connection Impact Assessment Process for Mid-sized or Large Embedded Generation Facility

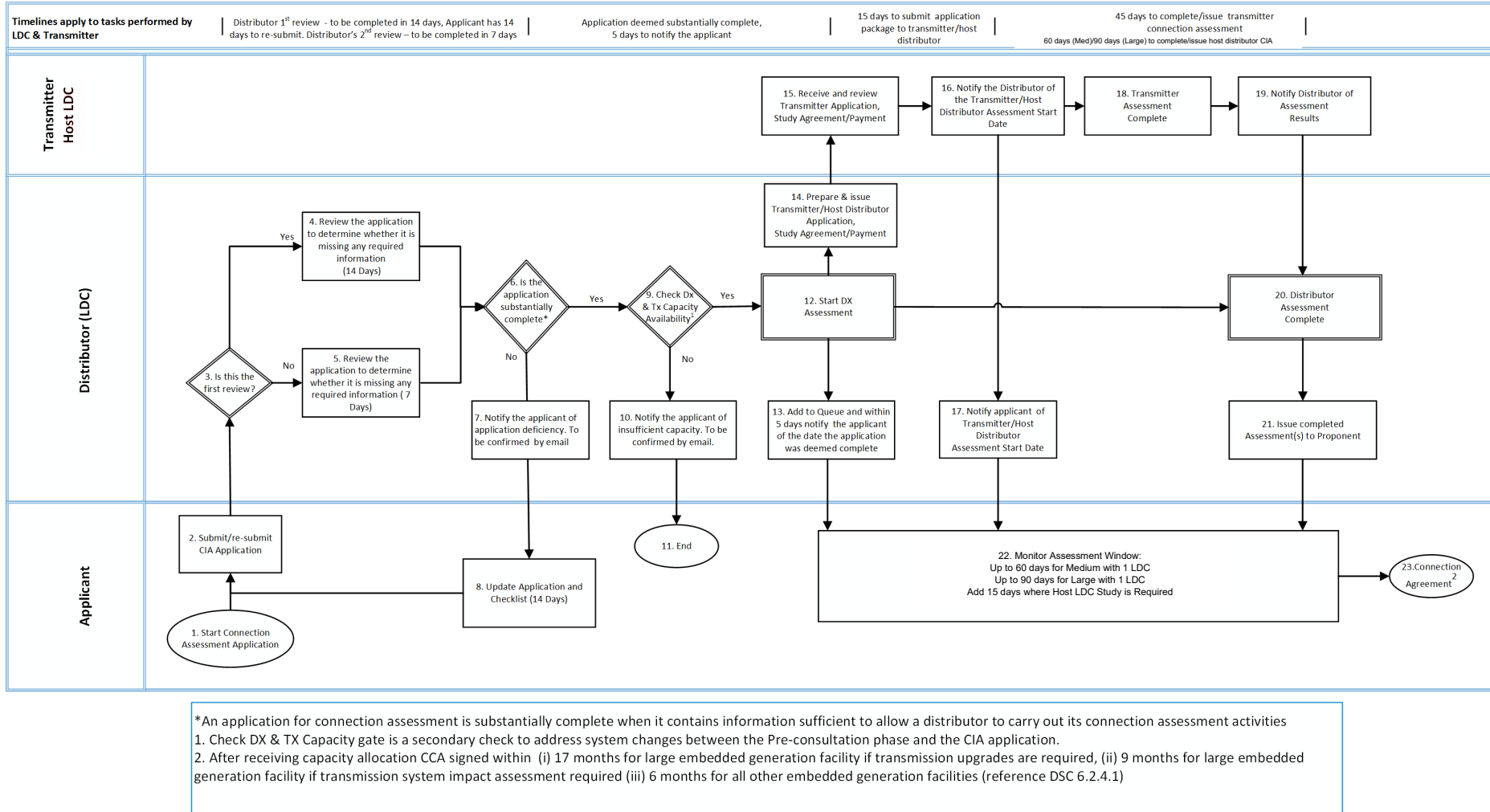


Figure 5: Flowchart for CIA process for Mid-sized and Large Embedded Generation Facility Connections

Step 1. The applicant initiates the CIA process and gathers the current CIA application form and distributor's application requirements from the distributor.

Step 2. The applicant submits the completed CIA Application package, including completed application form, payment for required studies, attachments, and application checklist.

Step 3. The distributor determines if this is the first submission or a revised application submission.

Step 4. For initial submissions, the distributor reviews the application for completeness within 14 calendar days.

Step 5. For revised application submissions, the distributor reviews the application for completeness within 7 calendar days.

Step 6. For the completeness check outlined in Steps 4 and Steps 5 above, the distributor will review the application to determine if there is sufficient information provided by the applicant to process the submission. Once the distributor determines that the submission provides the necessary information to commence a CIA study, the application is deemed substantially completed.

Step 7. For submissions that are not substantially complete, the distributor will notify the applicant of the application deficiencies via email or letter if the applicant's email is not provided. The deficiency notification shall identify any errors and omissions in the application that would prevent the distributor from proceeding with the CIA. The notification shall outline the available remedies required to have the application deemed substantially complete.

Step 8. On receipt of a deficiency notification, the applicant should review and revise the application to address the deficiencies and resubmit the application. The process allows 14 days for the applicant to resubmit a revised application. If the applicant does not return the revised application within 14 days, the distributor may remove the application from the processing queue. If the application is removed from the queue, it may be treated as a new application once it is resubmitted.

Step 9. For submissions that are deemed substantially complete, the distributor reconfirms<sup>6</sup> transmission and distribution capacity availability. Capacity is not reserved for the project until the CIA has been completed.

Step 10. The distributor notifies the applicant via email if there is no capacity availability to support the connection.

Step 11. If there is no capacity available, the process concludes.

Step 12. If capacity is confirmed to be available, the distributor proceeds with the assessment.

Step 13. The distributor adds the application to the processing queue and within 5 days notifies the DER applicant of the date the application was deemed substantially complete. The date the submission is deemed substantially complete starts the timed window for the distributor to return the completed CIA.

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<sup>6</sup> This is a secondary check to address the possibility of system changes between the Preliminary Consultation phase and the CIA application.

Step 14. The distributor prepares and issues an application to the transmitter for a CIA, a Study Agreement, and payment within 15 days of starting the assessment.

Step 15. The transmitter receives the application from the distributor along with the Study Agreement and payment. The Transmitter has 15 days to review the submission and notify the distributor

Step 16. The transmitter notifies the distributor of the Transmitter Assessment start date

Step 17. Distributor notifies the applicant of the Transmitter Assessment start date.

Step 18. The transmitter executes and completes the assessment within 45 days. Where possible the transmitter completes this study concurrently with the distributor Assessment.

Step 19. The transmitter notifies the distributor on the results of the assessment

Step 20. The distributor also completes its CIA

Step 21. The distributor will provide the completed CIA to the applicant within:

- i. 60 days of the receipt of the substantially complete application in the case of a proposal to connect a mid-sized DER; and
- ii. 90 days of the receipt of the substantially complete application in the case of a large DER.

The applicant can use the assessment start date notification to monitor the distributor's and transmitter's assessment progress against the applicable 60-day or 90-day assessment window. The assessment period is increased by 15 days where a host distributor assessment is also required.

Step 22. The process moves on to the connection agreement phase.