

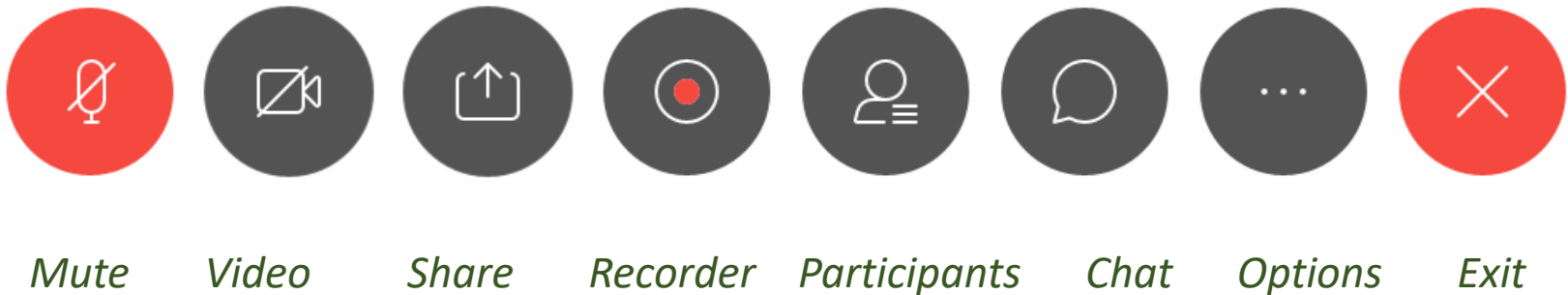
Distributed Energy Resources (DER) Connections Review

EB-2019-0207
Working Group

February 16, 2021

Introduction

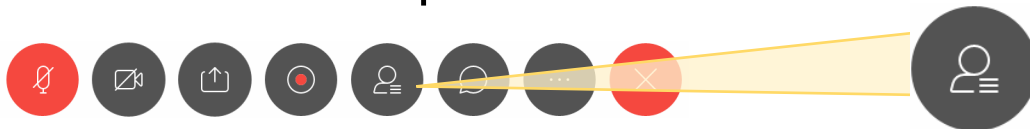
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Introduction

- Webex has a “raise your hand” feature that notifies the host that you would like to speak
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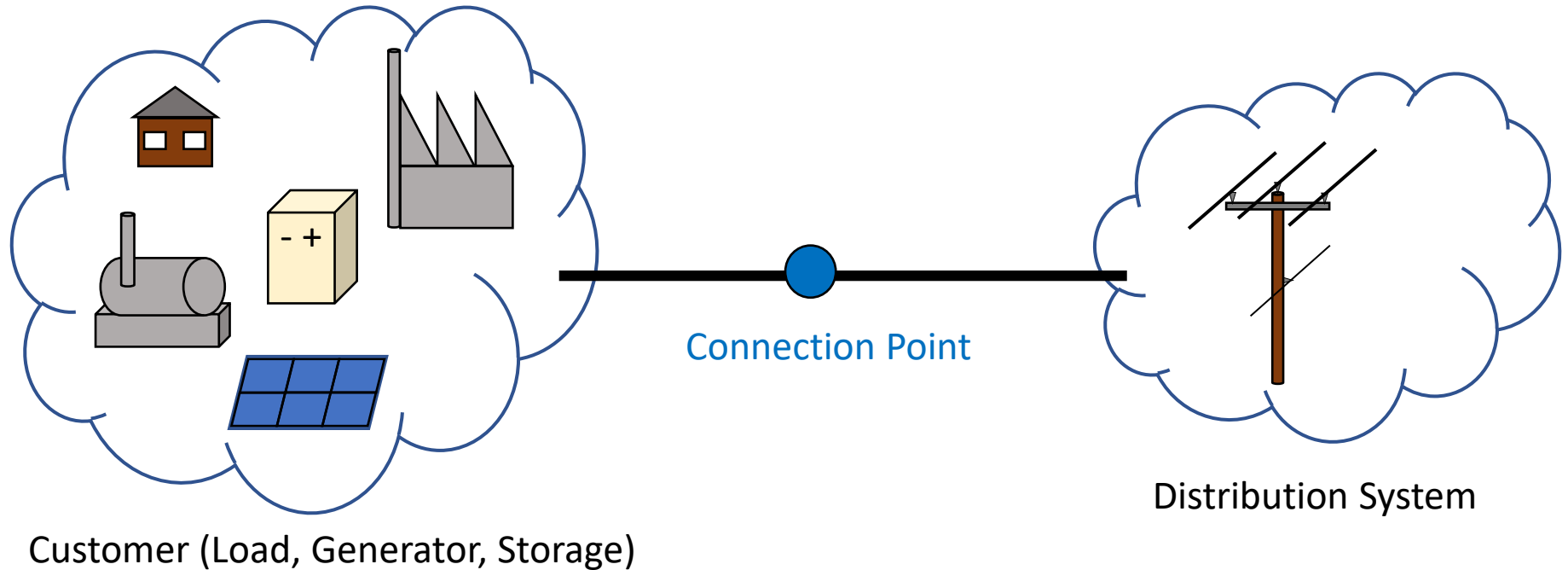


1. In the Participants window that opens on the right side of your screen, please clicking on the hand symbol  next to your name



- Please remember to identify yourself and organization when speaking

Scope Recap



- Working group to focus on the connection point of a generation or energy storage DER to a distribution system.

Proposed Agenda

2. Tranche 2: Priorities Review (Roadmap)
3. Tranche 2: Proposed Recommendations
4. Tranche 3:
5. Next steps and Action Items

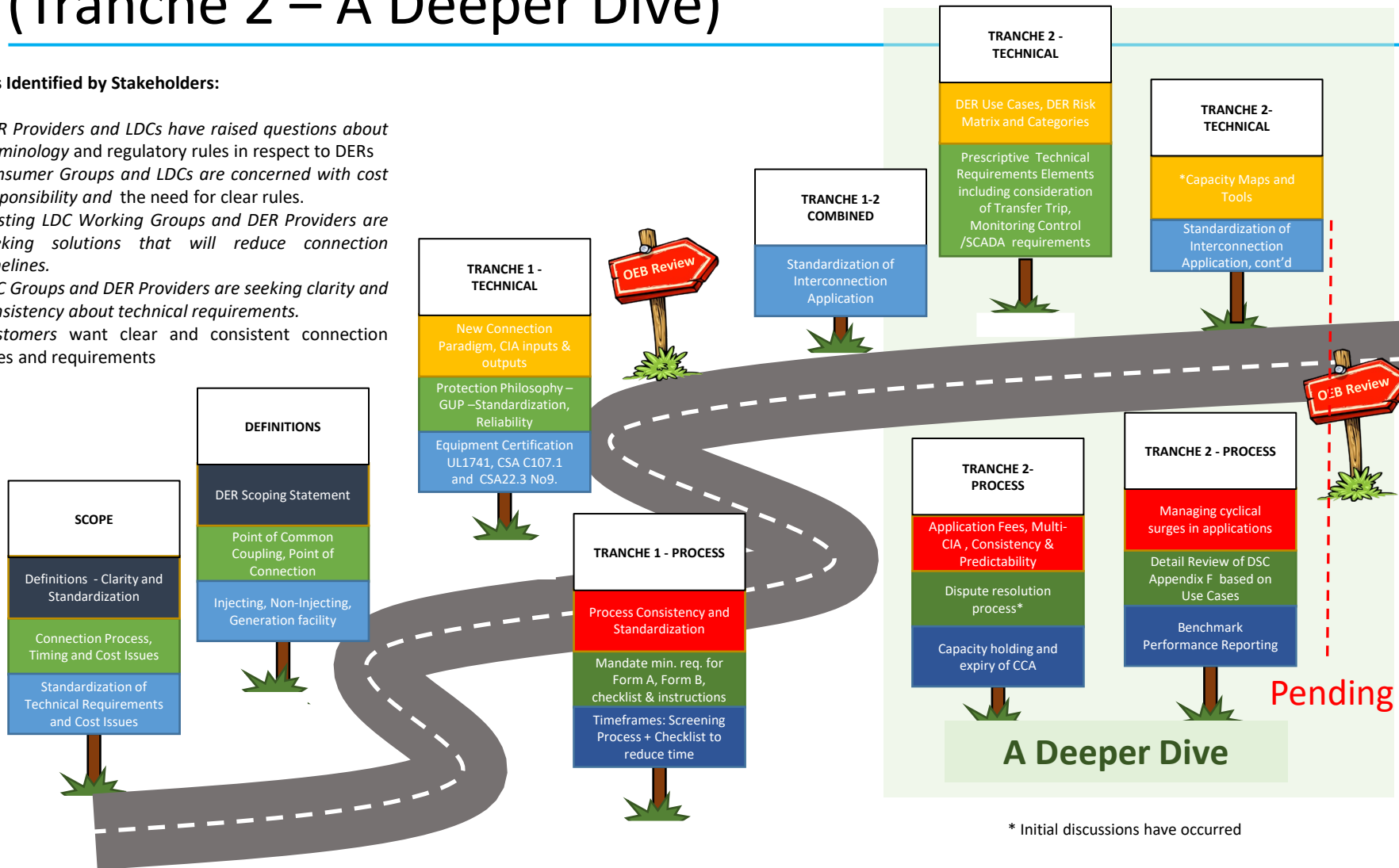
Any new agenda items for today?

Roadmap

DER Connections Review Strategic Plan Roadmap (Tranche 2 – A Deeper Dive)

Issues Identified by Stakeholders:

- ✓ DER Providers and LDCs have raised questions about terminology and regulatory rules in respect to DERs
- ✓ Consumer Groups and LDCs are concerned with cost responsibility and the need for clear rules.
- ✓ Existing LDC Working Groups and DER Providers are seeking solutions that will reduce connection timelines.
- ✓ LDC Groups and DER Providers are seeking clarity and consistency about technical requirements.
- ✓ Customers want clear and consistent connection rules and requirements



Standardization and Timing Improvements

Focus areas for process optimization

Subgroup

Process

Process

Process

Technical

Process/Technical

Technical

Technical

Technical

Process

Process/Technical

Process

Process

Process

Process Front End

- Remove exemption for Load Displacement Generation
- Screening Process / Application completeness check
- Master Study Agreements
- Risk Framework
- Standardization of Connection Forms
- Feeder Tools

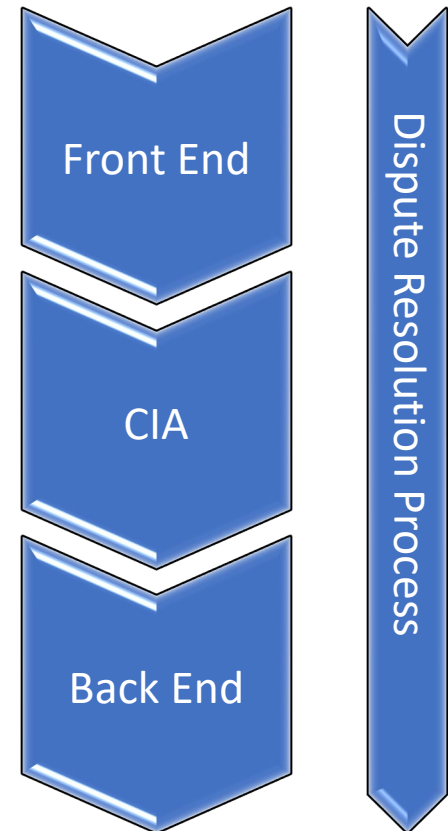
CIA Process

- Technical Requirements
- Concurrent processing for Dual and Multi-CIA
- Sample SLDs

Process Back End

- Capacity Allocation Term Length
- Connection Cost Agreements and Build Flowcharts

Dispute Resolution Process



Non-Exporting Screen DSC 6.2.1 – LDG

(Process Subgroup)

The Working Group sees value in completing a Connection Impact Assessment for Load Displacement Generation (LDG) facility due to short circuit implications. Further screens and simplified assessment process can be tailored via the standardized CIA Form.

Recommendations draft

- The Working Group recommends removing the reference to Load Displacement Generation Facilities in section 6.2.1 of the DSC.
- In addition, the applicability of all requirements in Section 6.2 of the DSC to LDGs should be reviewed, as LDGs may need to be treated differently compared to embedded facilities in certain respects.
- LDCs may still adjust the level of scrutiny in the CIA based on the individual project.
- The Working Group recommends further improvement and clarity be provided in the definitions for LDG and Emergency Backup Generation (EBG) facilities.

Draft Definitions (TBD)

(Process Subgroup)

The Working Group members agreed that the current Distribution System Code definitions for Load Displacement Generation (LDG) and Emergency Backup Generation (EBG) Facilities lack clarity, and it is recommended that new definitions for Load Displacement Generation Facility and Emergency Backup Generation Facility be adopted to improve clarity for the connection process

The group noted that whereas distributors still need to be informed of the connection of EBGs within a load customer's facility and an EBG must still meet certain design requirements to avoid paralleling with grid, EBG should be treated differently from LDG as an EBG is designed to only operate when grid supply is not available.

Load Displacement Generation Facility

Load displacement generation facility is the term used to describe a generation facility connected to the customer side of the point of common coupling (PCC) that is owned by an electricity customer and is used to supply part or all of the customer's electricity needs.

Emergency Backup Generation Facility

An emergency backup generation (EBG) facility is a standby power system that is installed on a customer site with the sole purpose being to **provide electrical power** if the primary or grid power has been interrupted or is unavailable. When connected in parallel with the distribution system, an EBG must have a transfer switch that isolates it from the distribution system within 100 milliseconds.

Non-Exporting Screen DSC 6.2.1 – LDG

(Process Subgroup)

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Draft Recommendations

The Working Group recommends removing the reference to Load Displacement Generation Facilities in section 6.2.1 of the DSC.

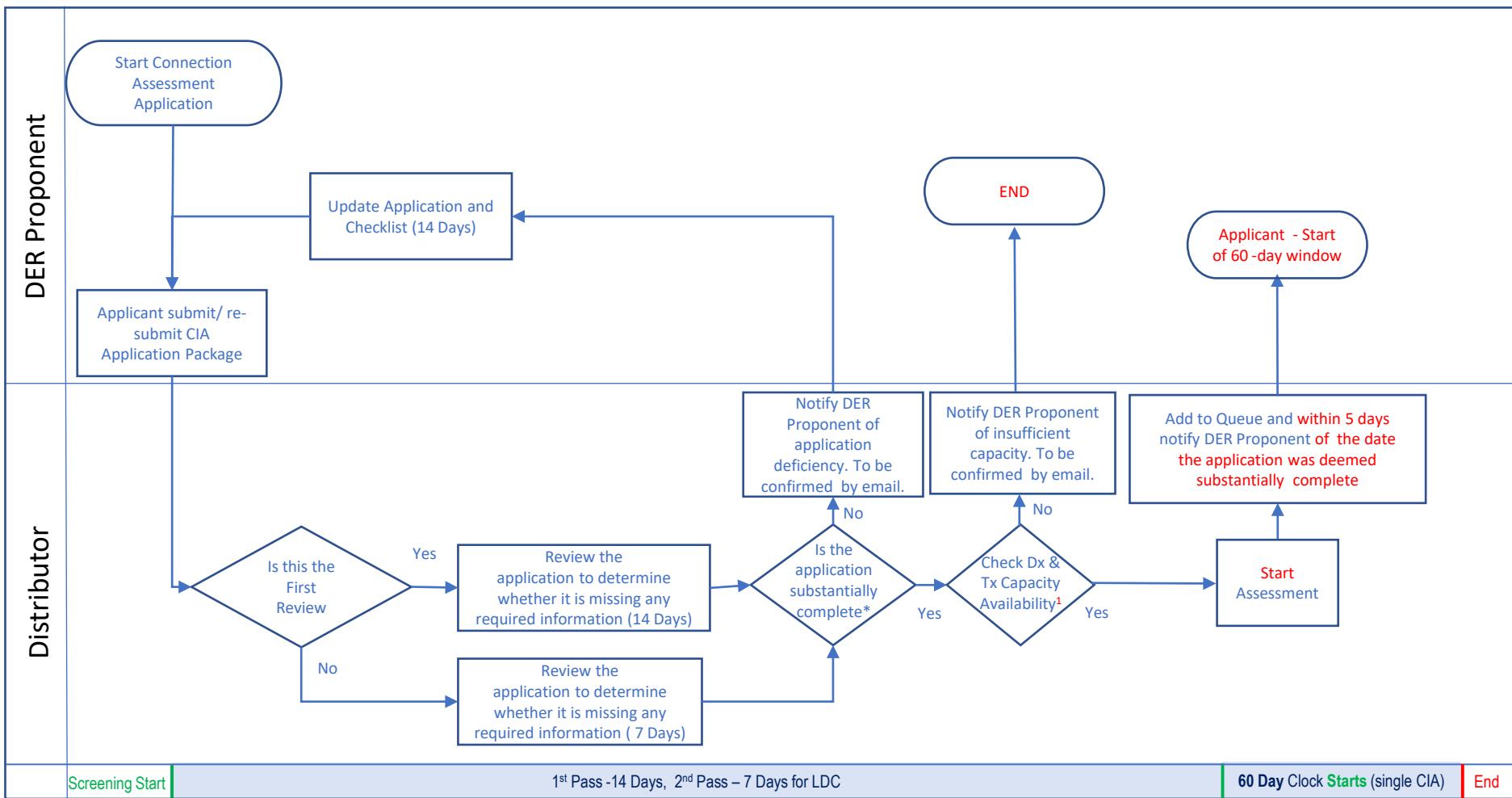
- In addition, the applicability of all requirements in Section 6.2 of the DSC to LDGs should be reviewed, as LDGs may need to be treated differently compared to embedded facilities in certain respects.
- Distributors may still adjust the level of scrutiny in the CIA based on the individual project.
- The Working Group recommends further improvement and clarity be provided in the definitions for LDG and Emergency Backup Generation (EBG) facilities.

Status: *The Small Group has reviewed the DSC Section 6.2 and made recommendations about applicability and noted that Section 6.2.18 A should not apply.*

Screening Process/Application Completeness Check (*Process Subgroup*)

- Tranche 2 Recommendation
 - Implement the Screening Process Flow Chart
- Tranche 1 Recommendation
 - OEB should ***make available*** a Screening Process and work toward mandating its use.
 - The group agreed that a substantially complete application is one that contains information sufficient to allow a distributor to carryout its connection assessment activities.
 - Develop process flow charts with responsibilities, steps, and timing

Screening Process



*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.

Master Study Agreement between Hydro One and Local LDC *(Process Subgroup)*

- A Study Agreement (SA) is prepared and executed for each Connection Impact Assessment (CIA) submitted by a local LDC to Hydro One.
- Securing the required signing authority within the LDC can possibly delay the CIA submission to the transmitter and the
- The group discussed the possibility of a Master Study Agreement being prepared and executed between Hydro One and an LDC outlining all the necessary terms and conditions and potentially assigning or delegating the signing authority required.
- The group agreed that the implementation of a master agreement is not feasible at this time.

Draft Recommendation:

- LDCs should move internally to delegate signing authority on study agreements, as deemed appropriate.

Risk Framework *(Technical Subgroup)*

The risk framework has the potential to inform and influence the DER connection process. Whereas it is not expected to replace the connection impact assessment (CIA), the framework could result in

- Signaling early indications of cost and complexity of the connection,
- A new process gateway¹ replacing DSC size categories, and/or
- Map to specific technical requirements.

Tranche 2 will include preparation of a risk template that can be customized by an LDC to meet the needs of their system.

Recommendation draft:

- Continuing the work from Tranche 2, validate the risk grouping categories for reasonableness. Explore if the risk groupings can be used as a replacement for the existing DSC size categories.

1. For Tranche 2 continue current gateway to process flows: micro (no CIA), small and medium (LDC and Transmitter CIAs), and large (LDC and Transmitter CIAs and IESO SIA).

Next steps in Risk Framework development

- Further work on feeder risks in parallel with the following
- Validate the risk grouping categories for reasonableness
 - Small group to coordinate
 - LDCs volunteer
 - Populate the risk framework for their system
 - For completed CIAs for real projects
 - Put the inputs through the risk framework
 - Compare results from the framework to results of the CIA
- Explore if the risk groupings can be used as a replacement for the existing DSC size categories
 - TBD

Standardization of Connection Forms (*Content*)

(*Technical Subgroup*)

Draft Recommendation:

- Provide the templates and proceed with implementing form use
 - Preliminary Consultation Application (definition consistency)
 - Preliminary Consultation Report (minor change)
 - Connection Impact Assessment Application (Form B) as developed by the HONI/LDC groups

Tranche 1 Recommendation:

OEB would mandate minimum requirements for the Preliminary Consultation Application, Preliminary Consultation Report, and the Connection Impact Assessment Application, and provide as guidance a template form that utilities may use¹. Utilities wishing to use an alternate form must file the alternative form with the OEB so that the OEB can, from time to time, monitor and evaluate its effectiveness for the goals of a consistent, transparent, and efficient process.

¹. Does not preclude the use of web-based versions of the PCA

Feeder tools *(Technical Subgroup)*

Many LDCs have feeders that are at capacity and can not accommodate the connection of a DER. These feeders would yield an automatic NO as a response to a preliminary consultation application because there is no capacity for additional projects. It would be beneficial for proponents to be able to quickly eliminate prospective projects that would be attached to those feeders. Most large customers know the designation of the feeder to which they are connected.

Some participants advocated for additional progress on capacity tools – see the main report for more details.

Recommendation draft:

- Require LDCs to publish a list of “restricted feeders” by name and feeder designation that they operated that are known to not have capacity to accommodate a DER connection. The list can be updated as necessary by system reconfiguration or expansions and shall be updated at least every 3 months. The LDC should identify their restricted feeders even if the constraint is caused by an upstream asset that they do not own.

Feeder tools cont'd *(Technical Subgroup)*

Residual Issues:

- A more dynamic approach would enable a more forward-looking view that considered projects in progress that will change the outcome of the assessment. This would enable the proponent to know when to come back for a reassessment.
- The broader solution is beyond the scope of DER Connections Tranche 2 and will need to be addressed through the broader DER OEB Consultation.

Standardization of Technical Requirements

(Technical Subgroup)

HONI expects that in Jan/Feb 2021 it will release all or part of its revised Technical Interconnection Requirements (TIR) with new requirements on transfer trip, SCADA, and non-exporting generation. It is anticipated that the revised requirements will offer improved clarity as to when they are required. It is hoped that clarity around requirements will lead to enhanced consistency of application.

Recommendation draft:

- Replace DSC Appendix F.2 in favour of a reference to CSA C22.3 No 9 and a list of other useful resources
 - Including the HONI TIR is a guideline (or upper bound) for good utility practice for connection of DERs.
- Request LDCs to specify where they would differ from the HONI TIR for their system and build a repository of examples of projects and resulting technical requirements for their system.
- Require LDCs to provide specific, binding technical requirements for a project as an output of the CIA.

Concurrent CIAs Process: Distributor, Host Distributor and Transmitter *(Process Subgroup)*

- CIA processing timeframes have been extended when the Distributors process multiple CIAs sequentially. There is an opportunity to optimize the CIA process cycle time by clarifying that CIAs are to be processed concurrently.
- It is important to convey that whenever possible the Distributor , Host Distributor and the Transmitter are to proceed with the CIA in a concurrent manner.
- This should result in significant process time savings.

Draft Recommendation:

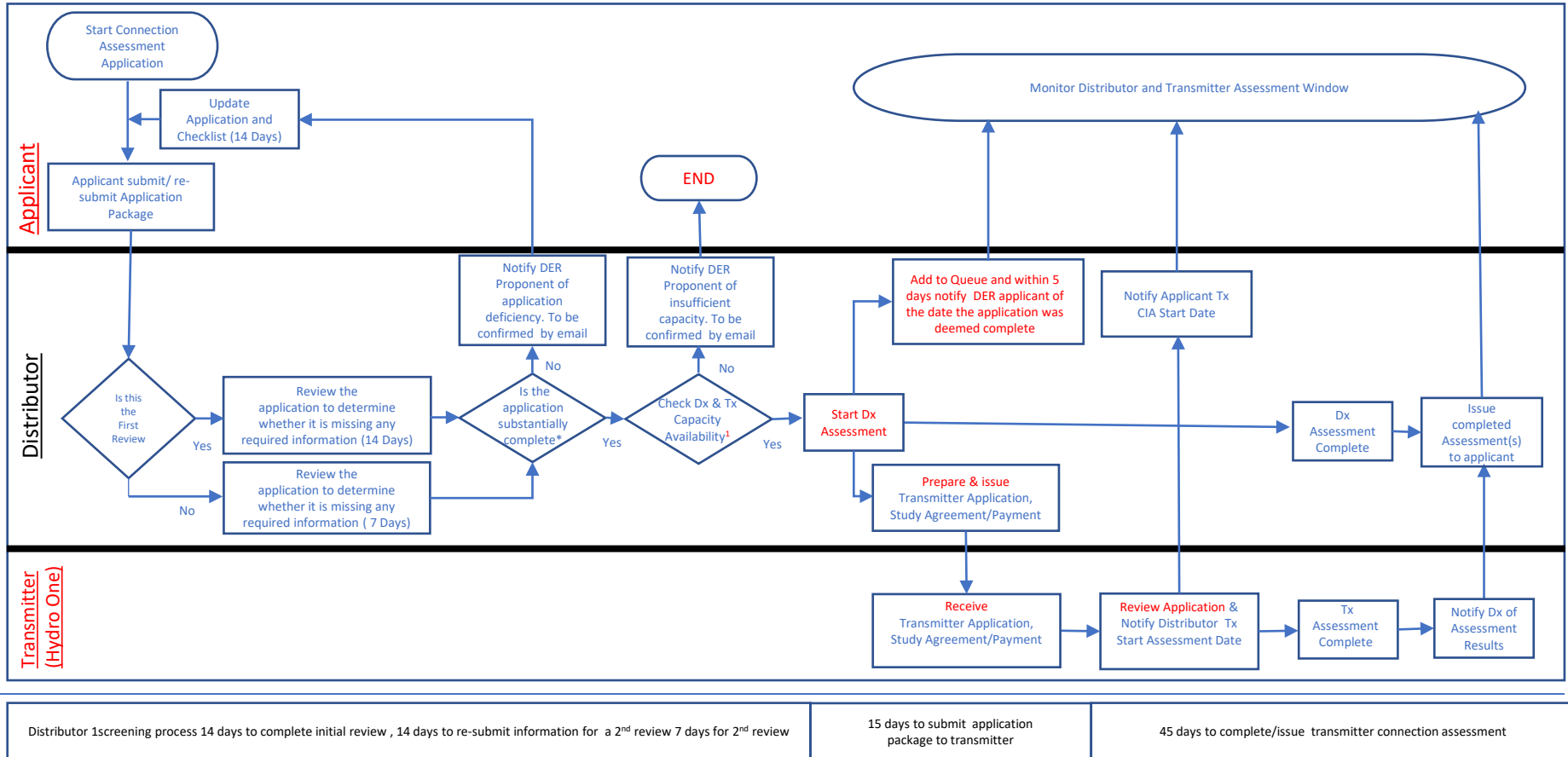
- Provide further clarity that the Distributor's, Host Distributor's and Transmitter's CIAs should be processed concurrently
- Implement standardized Connection Assessment Application and CIA (aka DTCA) – CCA/CCRA Processes' changes with recommendation to include the amended changes in the Distribution System Code (DSC)
- Distributors be required to file the application for a transmission CIA with the transmitter within 15 days of a CIA application being complete. The transmission CIA would include the study agreement, the DTCA application, and arrangements for payment to the transmitter. If there is a host LDC, an additional 10 days may be added to the time to advise notify both it and the transmitter.

Issues with results of CIAs or DTCAAs:

Recommendation draft:

- Some additional wording be added that makes it very clear the CIA/DTCA are valid for a specific time frame. In the rare case the issue(s) have not been resolved the LDC could extend CIA expiration date (or the transmitter the DTCA expiration date) if there is no pressure to release capacity allocated this CIA/DTCA.
- Proponents should have the option to make a non-refundable payment for the design work necessary to get a narrower estimate of the cost from the distributor or the transmitter. If the project goes ahead, the cost of this additional design work would reduce the CCA or CCRA.

DER Connection Application - Assessment Flow Chart Distributor –Transmitter (Hydro One) / Dual CIAs



*An application for connection assessment is substantially complete “when it contains information sufficient to allow a distributor to carry out its connection assessment activities.” O. Reg. 326/09, s. 2 (3)

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

Capacity Allocation

Queue (capacity) Squatting (“sitting in” capacity allocation) and Capacity Allocation Removal

Issues:

- Concerns expressed that the DSC allows proponents to prolong the in-service date, including that proponents could continue to hang onto their capacity allocation
- There is a need for clarity about “sitting in” capacity allocation and capacity allocation removal
- Capacity holding creates cost risk to the LDC and the proponent as it may result in an ineffective utilization of available capacity and ties up distributor resources

Draft Recommendations

- Draft recommendation to be determined by a complete review of section 6.2 and update where required
- Include code requirement to establish mutually agreed in-service date when entering into a CCA and the project must connect no later than 5 years for waterpower projects or 3 years for all other types of projects from the initial date of application for connection unless both parties have agreed to an extension
- If the proponent does not meet the proposed in-service date the LDC may revoke the capacity allocation at their discretion

Capacity Allocation

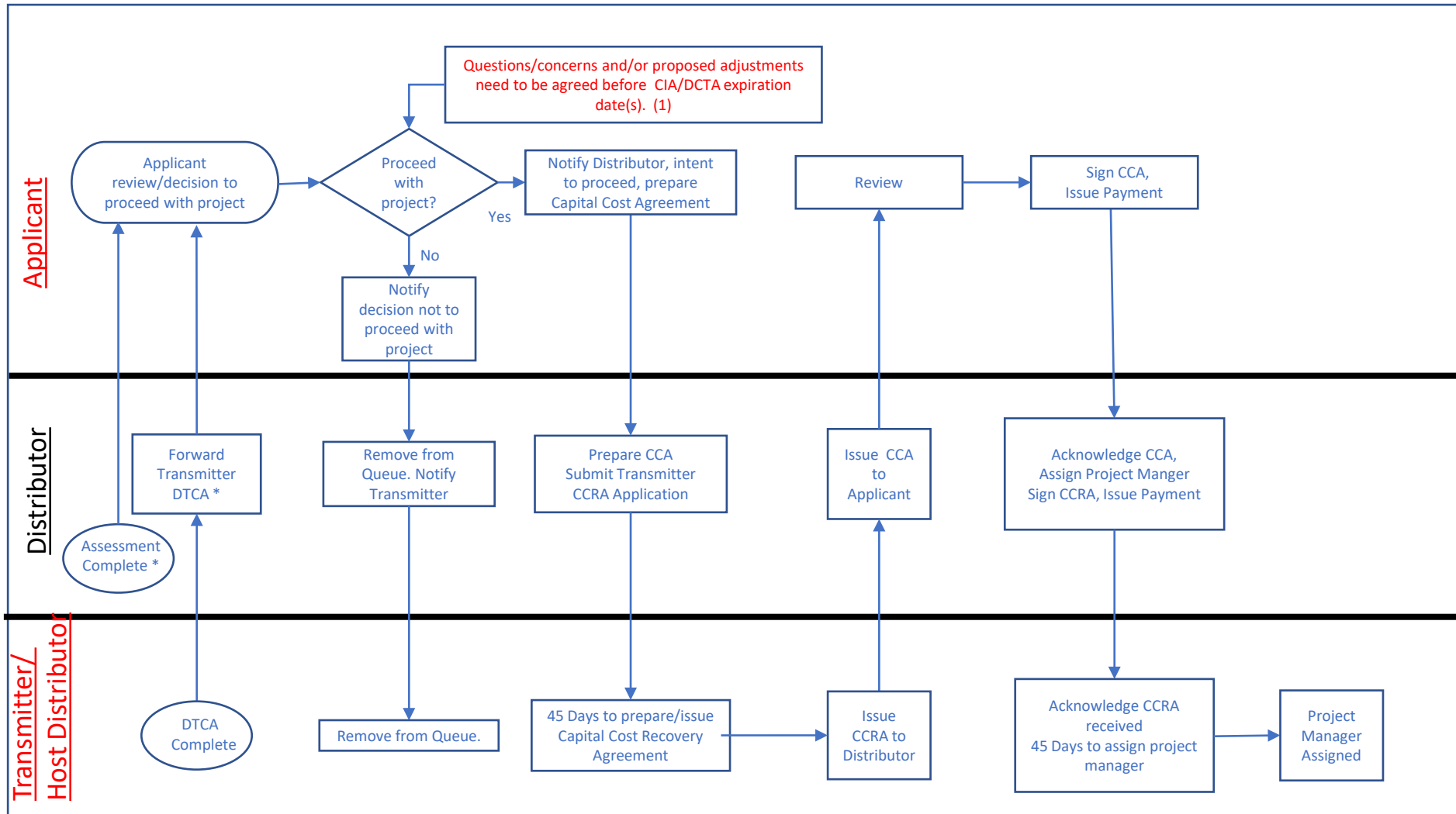
Queue (capacity) Squatting (“sitting in” capacity allocation) and Capacity Allocation Removal

- Proponents should be encouraged to reach out and engage the LDCs regarding delays.
- The maximum limits on the proposed/mutually agreed-upon in-service date should be reviewed to determine if they continue to be appropriate as most of these requirements were developed during the FIT-contract era.
- Limit the ability of a project proponent to extend the agreed upon in-service date (at CCA execution) to one time, unless mutually agreed with the LDC based on exceptional circumstances or project complexity. If they can't connect within the extended time frame, they will be refunded their deposit (costs will be deducted), their contract will be voided and their capacity allocation will be removed by the LDC. These projects will need to reapply as a new project. Current rules regarding providing an additional capacity allocation deposit to secure their capacity allocation may no longer be appropriate because of the cancellation of the FIT program.
- The group suggested that a proponent should not be able to request an extension of their in-service date beyond 1 year for unforeseen delays (excluding Force Majeure).
- Capacity should be made available not only on a first-come first-serve basis but that it should also be allocated to qualified proponents who are ready to connect within a reasonable time frame.
- Should a proponent successfully reapply and receive a capacity allocation for their project, it may be possible to mitigate some costs by leveraging the materials and assessment previously completed.

Connection Cost Agreements and Build Flowcharts Dispute Resolution Process

- Process* Improved Cost Estimates (*recommendation-continue into Tranche 3*)
- Process* Dispute Resolution Process(*recommendation-continue into Tranche 3*)

DER CIA/DTCA – CCA/CCRA Flow Chart



CIA & DTCA both have expiration dates, typical 6 months	Transmitter 45 days to prepare/issue CCRA	HONI 45 days to assign PM from CCRA execution date
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- Complete Connection Assessment & DTCA includes cost estimates for connection of DER
- (1) An extension may be granted by Distributor and/or Transmitter if deemed necessary

Dispute Resolution Process

Process Group could not reach consensus

Dispute Resolution Process

(Process Subgroup)

Small group participants agreed that the goals for a Dispute Resolution Process include:

- **Expeditionessness:** Disputes are resolved as expeditiously as possible.
- **Efficiency:** The resources required to resolve disputes are not burdensome.
- **Fairness:** All parties are treated fairly in the process and the substantive outcome.
- **Comprehensiveness:** The full range of connection-related disputes can be addressed.
- **Transparency:** The procedural steps and the substantive criteria used to resolve disputes are clear.
- **Customer focus:** Customer needs are accommodated, noting that delay and the status quo are problematic for customers.

Small group participants also agreed that there would be merit in adding some minimum standards in the

Distribution System Code relating to dispute resolution processes. However, utility and non-utility participants did not agree on the content of minimum standards for a dispute resolution process:

- Non-utility participants supported interconnection dispute resolution processes that involve a neutral third party to assist in resolving disputes, especially on technical issues. Utility participants did not support this.
- Some non-utility participants supported terms, as is common in some other jurisdictions, that are specific to interconnection disputes due to their complexity. Some utility participants felt that all terms must apply to all customers.

Small group participants did not reach consensus as between continuing with the status quo and recommending specific changes. Some non-utility participants ask that the matter be dealt with in a future process.

Tranche 3

Potential Tranche 3 Topics

Subgroup

Technical

Process

Process

Process

Process

Process/Technical

Process

Process/Technical

Process

- Further work on the Risk Framework
- Application Fees, Consistency & Predictability
- Benchmark Performance Reporting
- Improved Cost Estimates
- Consensus on Dispute Resolution
- Further CIA application improvements
 - Application instructions to help the applicant have a viable application
 - Application checklists for the applicant to ensure a complete application before submission
 - Examples of Single Line Diagrams

Action Items & Next Steps

- Action Items
- Next Steps
- Working Group meeting