

# Distributed Energy Resources (DER) Connections Review

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Working Group  
Meeting 3

EB-2019-0207

March 25, 2020

# Agenda

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- Introduction
- Overview – Tranche 1
- Review of Subgroup Discussions
- Discussion of recommendations and documents
- Next Steps and Action Items
  - Meeting Schedule
  - Next Steps and Area of Focus

# Tranche 1- “Easy Wins”, Low Hanging Fruit”

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## TRANCHE 1 JANUARY -> MARCH



Working Group Meeting



Subgroup Meeting



Holiday

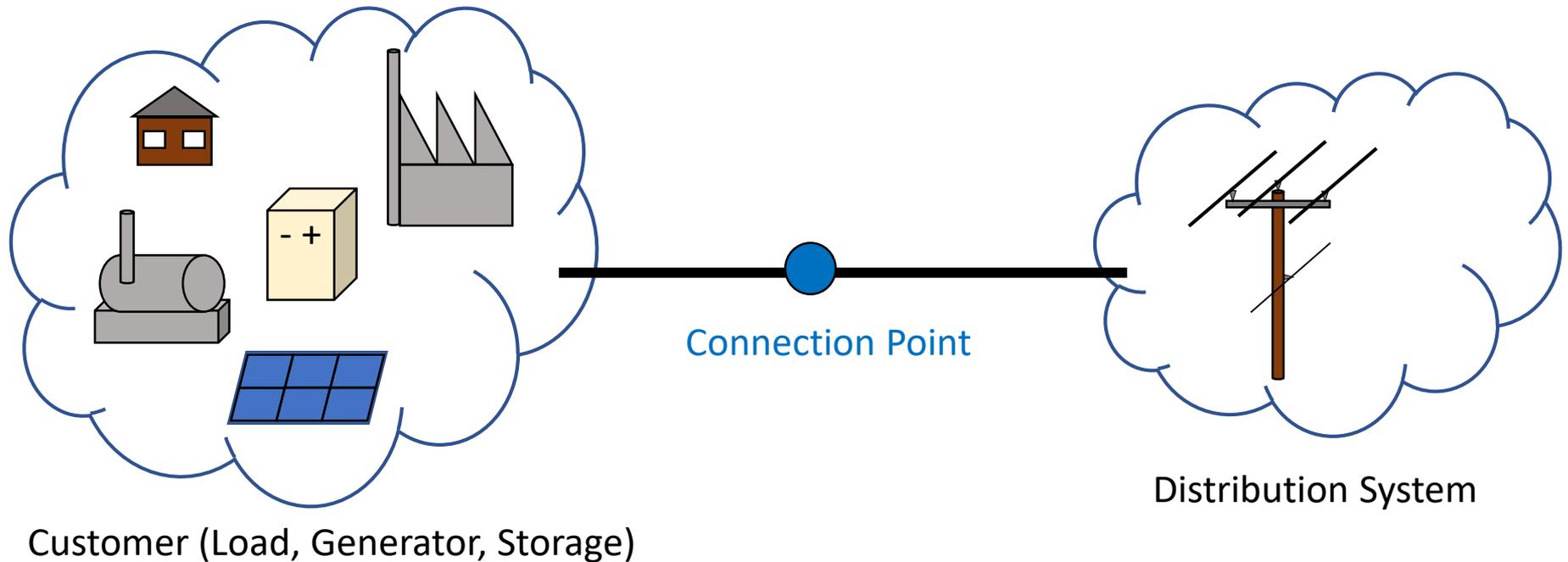
# Stakeholder Issues

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- ✓ ***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

# Scope

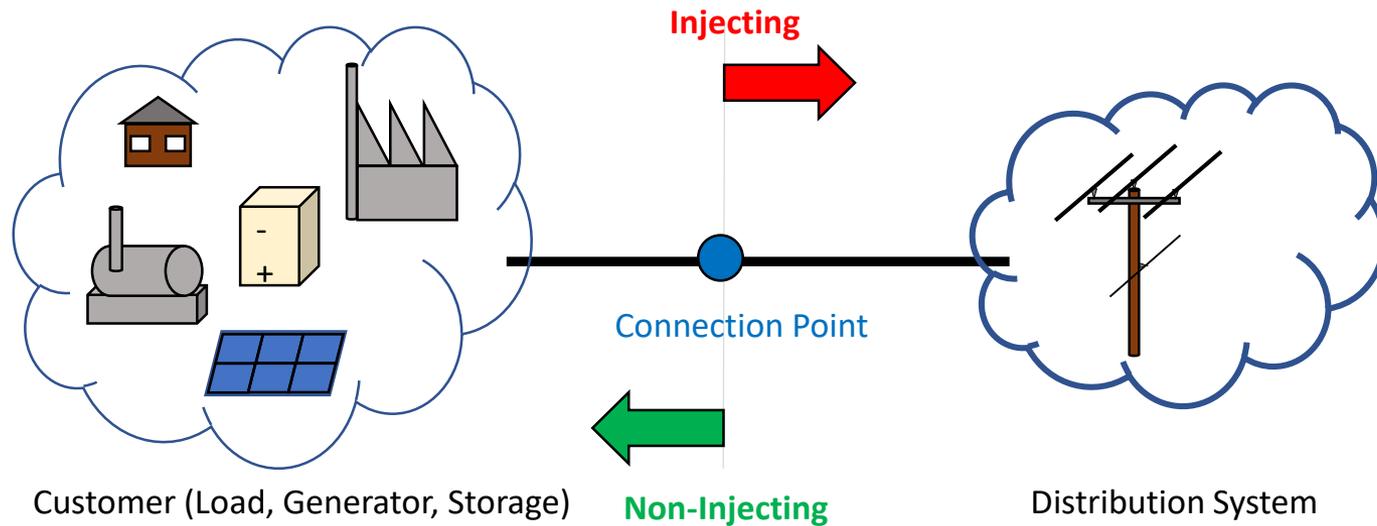
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- Working group to focus on the connection point of a generation or energy storage DER to a distribution system.

# A New Connection Paradigm

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# Overview: Tranche 1- “Low Hanging Fruit”

## DER Scoping Statement

**Scope:** Focus on the connection point of a generation or energy storage DER to a distribution system and consider the following issues identified by stakeholders;

### Clarify Definitions

Point of Connection, Point of Common Coupling, Point of Supply, Connection, Connection Assets, Ownership Demarcation, **Connection Process, Timing and related Cost Issues**

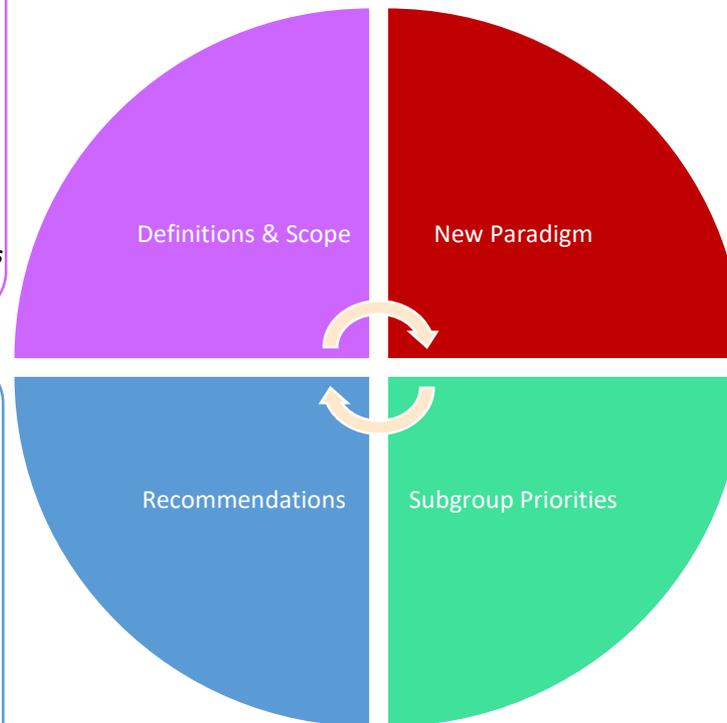
**Technical Requirements and related Cost Issues**

## Technical Subgroup Recommendations

- Protection Philosophy
- Request ESA confirm inverters certified to C107.1 or UL 1741 meet requirements of CSA C22.3 No. 9 -2020

## Process Subgroup Recommendations

- Preliminary Consultation Application (formerly Form A)
- Preliminary Consultation Application Report (Mandatory minimum requirement report)
- Connection Impact Assessment Application (Mandatory minimum requirements form)



## Connection Matrix

1. **Non-Injecting**  
Synchronized or Non Synchronized
2. **Injecting**  
Synchronized

## Subgroup Technical Priorities

- OEA Protection Philosophy – Appendix B
  - Standardization of requirements
    - Reliability / Safety / Cost
- Complete Non Injecting / Synchronized tree Use Cases with applicable technical requirements: Protection, Monitoring and Control (SCADA / TT) and Metering

## Definitions

## Subgroup Process Priorities

- Consistent Information Requirements - Standardize Forms with examples
- Process Flow -Review OEB and OEA flowcharts
  - Concurrent CIAs –Short circuit impedance values, Completeness checks (Minor/ Major), Sunset on CA and Queue position
- Capacity Map –Where is there capacity to connect
- Categorize Process based on risk and streamline for low risk

# Subgroups

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## **Review of Technical Requirements and related Cost Issues**

- Make recommendations for standardization of technical requirements for connections possibly through reference to outside standards or developing requirements.

## **Review of Connection Process and related Cost Issues**

- Review current processes and timeframes to identify and make recommendations to improve the connection process.
- This will include making recommendations for new or different processes possibly based on size or technology.
- Consider the cost of the connection process and options for reducing costs
- Consider and reflect on industry groups input (i.e. EDA, OEA, HONI TIR)

# Tranche 1 Recommendations Development



# Ontario Regulatory Framework

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- Legislation (must)
  - *Electricity Act, 1998*

Section 28: Distributor's obligation to connect  
A distributor shall connect a building to its distribution system if,

    - a) The building lies along any of the lines of the distributor's distribution system; and
    - b) The owner, occupant or other person in charge of the building requests the connection in writing.
  - *Ontario Energy Board Act, 1998*

Section 1: Board objectives, electricity

    1. To protect the interests of consumers with respect to prices and the adequacy, reliability and quality of electricity service
    2. To promote economic efficiency and cost effectiveness in the generation, transmission, distribution, sale and demand management of electricity to facilitate the maintenance of a financially viable electricity industry
    3. To promote electricity conservation and demand management in a manner consistent with the policies of the Government of Ontario, including having regard to the consumer's economic circumstances
    4. To facilitate the implementation of a smart grid in Ontario
    5. To promote the use and generation of electricity from renewable energy sources in a manner consistent with the policies of the Government of Ontario, including the timely expansion or reinforcement of transmission systems and distribution systems to accommodate the connection of renewable energy generation facilities
  - Ontario Regulations as authorized by legislation  
eg: O.Reg. 326/09: Mandatory Information RE Connections

# Ontario Regulatory Framework (continued)

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- Licences based on activities named in legislation (must)  
eg: Distribution, Transmission, Generation, Electricity Retailer
- Codes as a condition of Licence (must)  
eg: Distribution System Code, Reporting and Recordkeeping Requirements
- Bulletins and Guidelines (information and guidance)  
eg: Filing Guidelines, FAQs, implementation of the Ontario Electricity Rebate

# O. Regulation 326/09

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- O. Reg 326/09
- Primarily regarding information requirements on Connection Impact Assessment Application (Form B) and CIA report for renewable energy generating facilities
- Subgroups should ensure that all requirements are covered in Form B minimum requirements
- Would then apply to all generation sources
- Speak to what else the LDCs must do to be in compliance with the Reg.

# Recommendations draft

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- Sample Protection Philosophy
  - The OEB to make the Sample Protection Philosophy available on the OEB website and for LDCs to provide as guidance to proponents.

# Recommendations draft

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- CSA C22.3 No.9
  - The OEB Working Group asks the ESA to confirm that inverters certified to UL 1741 SA (2016) will be considered to meet the requirements of CSA C22.3 No.9.
    - Inverters that are approved to UL 1741 SA (2016) do not satisfy all interconnection requirements in CSA standard C22.3 No.9
  - Applies to situations where the LDC would require inverters that meet CSA standard (i.e. allow the use of UL1741 certified inverters until C22.2 No. 107.1 is updated)
  - inverters CSA standard C22.2 No. 107.1 is expected to be updated in 2020/2021 and will reference CSA C22.3 No. 9 standard for interconnection requirements

# Recommendations draft

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ESA is considering OEB Working Group's request, additional information is required:

- Clarification if only mandatory interconnection tests in UL1741 SA (2016) are required or additional OPTIONAL control/tests are needed.
- Are all inverters required to meet UL1741 SA (2016) requirements or this direction applies only to inverters that are injecting (exporting) into distribution system?
- Specify the date (period) for the OEB Working group request for accepting approval requirements to the UL standard for inverters

# Recommendations draft

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- Preliminary Consultation Application Form
  - OEB would **mandate minimum requirements** for a Preliminary Consultation Application (PCA) and **provide as guidance** a template form that utilities may use<sup>1</sup>. 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
- Preliminary Consultation Report
  - OEB would **mandate minimum information requirements** that LDCs will provide in response to a submitted PCA and **provide as guidance** a template Preliminary Consultation Report (PCR) that utilities may use<sup>1</sup>. Utilities wishing to use an alternate report must file the alternative PCR 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 PCR

# Recommendations draft

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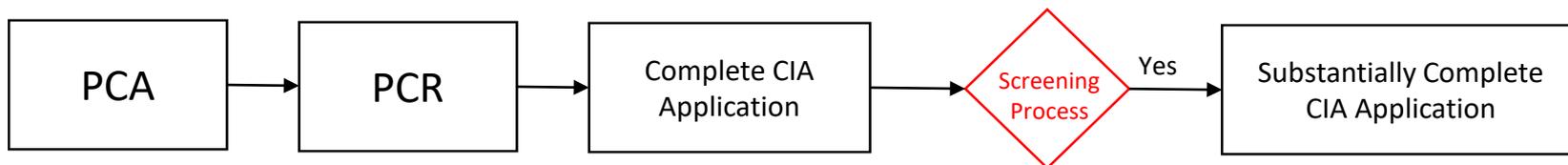
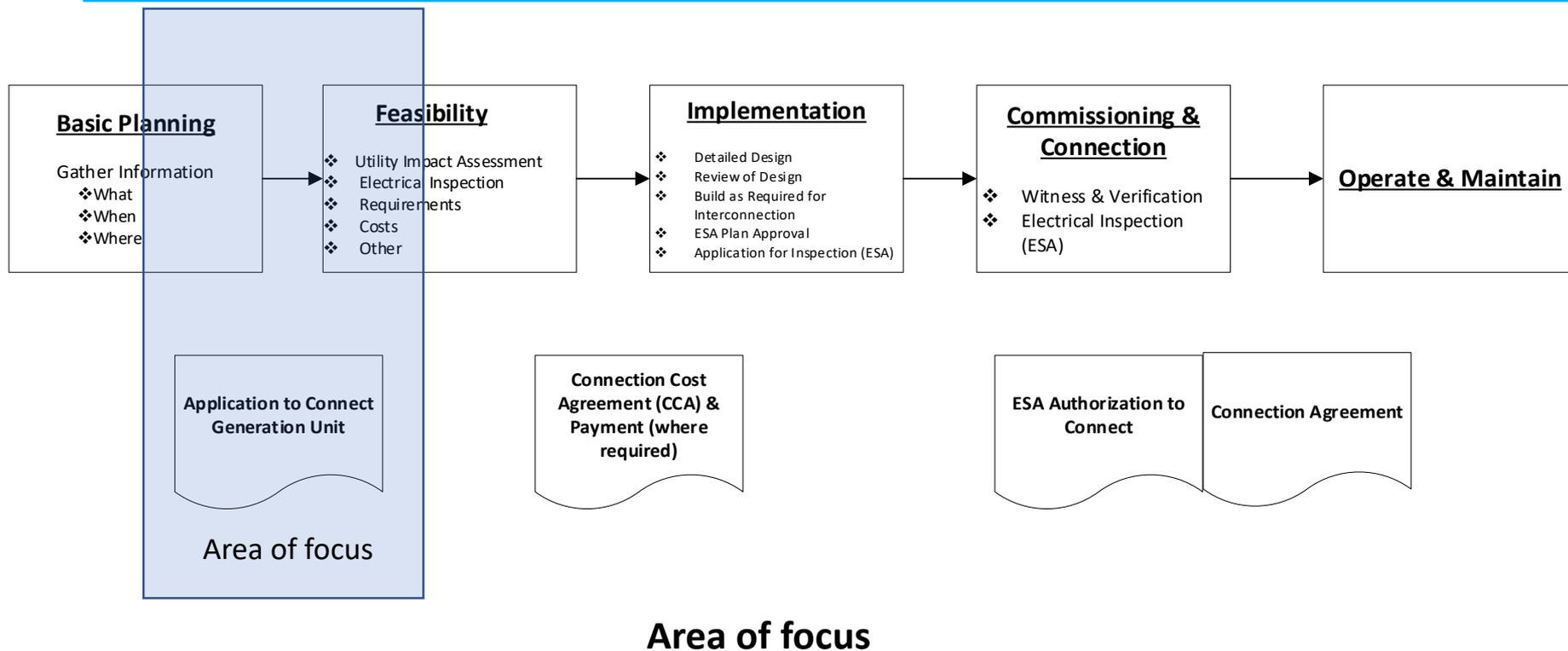
- Connection Impact Assessment Application Form
  - OEB would **mandate minimum requirements** for a Connection Impact Assessment Application **and provide as guidance** a template form that utilities may use<sup>1</sup>. Utilities wishing to use an alternate form must file the alternative form with 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*
- Next steps for the subgroup
  - The subgroups intend to work toward a template Connection Impact Assessment Application form including instructions and a checklist to help proponents with the application. Further discussion on the content of the form, checklist and instructions is required.

# Recommendations draft

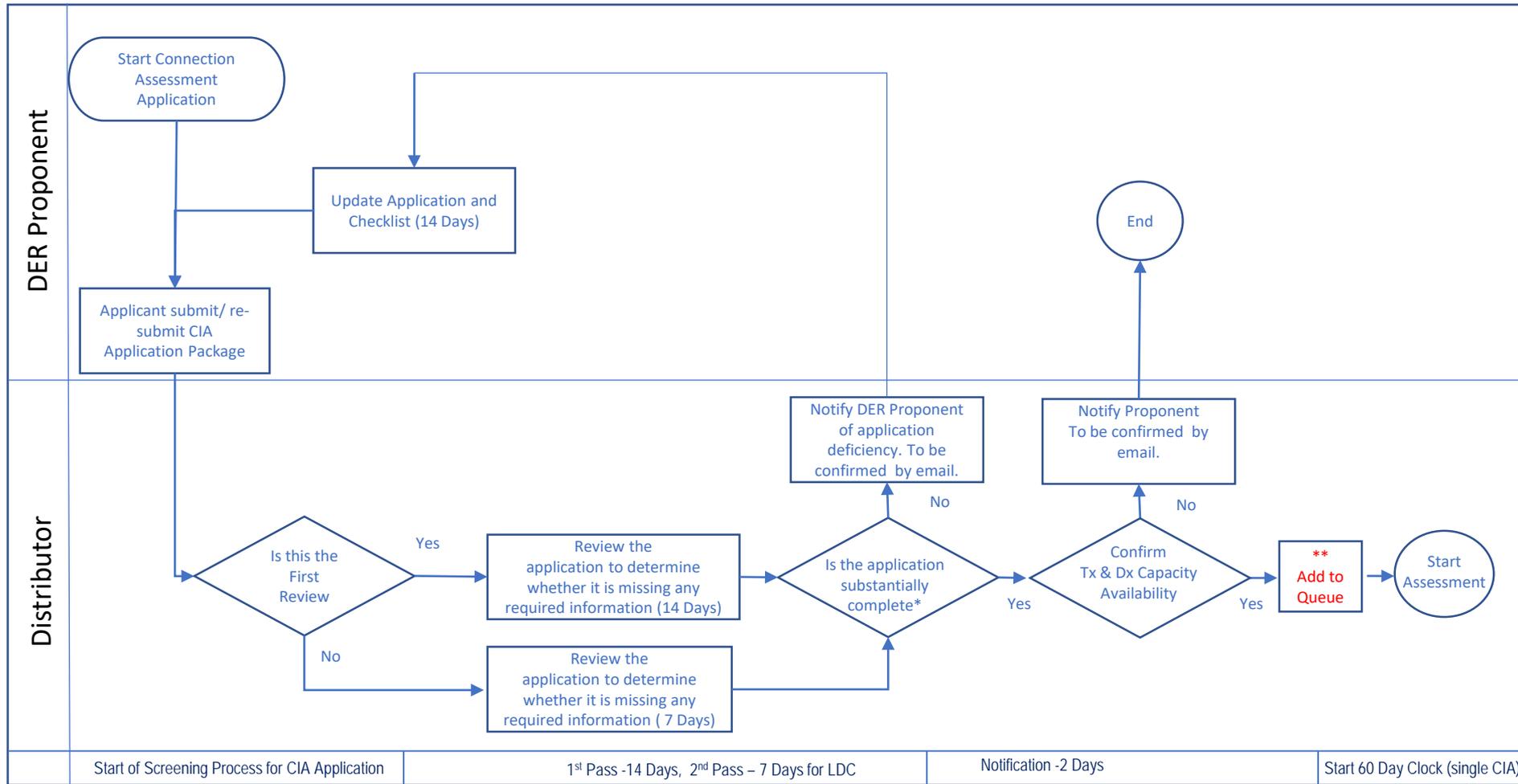
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- Screening Process
  - OEB should ***make available*** a Screening Process and work toward mandating its use.
  - The group agreed that a substantially complete application is one that contains information sufficient to allow a distributor to carryout its connection assessment activities.

# Generation Connection Process Summary



# Screening Process ( proposed changes)



\*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)

**\*\*** *Caveat – Stem objects to queue position*

# Next Steps

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- Presentation to the OEB
- Next subgroup meeting **April 22**
- Next area for focus
  - Tranche #2 – Deeper Dive

# Working Group / Subgroup Stages

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## Tranche 2 - Deeper Dive

### Combined Subgroup

- Complete CIA Application Form

### Technical Subgroup

- Development of Use Cases and Applicability of Technical Requirements

### Process Subgroup

- Detailed Review of Process Flowcharts

*\*Timelines and tranche length to be determined by group*

# Working Group / Subgroup Stages

**March '20**

**First tranche of Working Group Recommendations provided to OEB**

Su	M	Tu	W	Th	F	Sa
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**April '20**

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**May '20**

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**June '20**

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**TRANCHE 2**  
**\*APRIL -> JUNE**



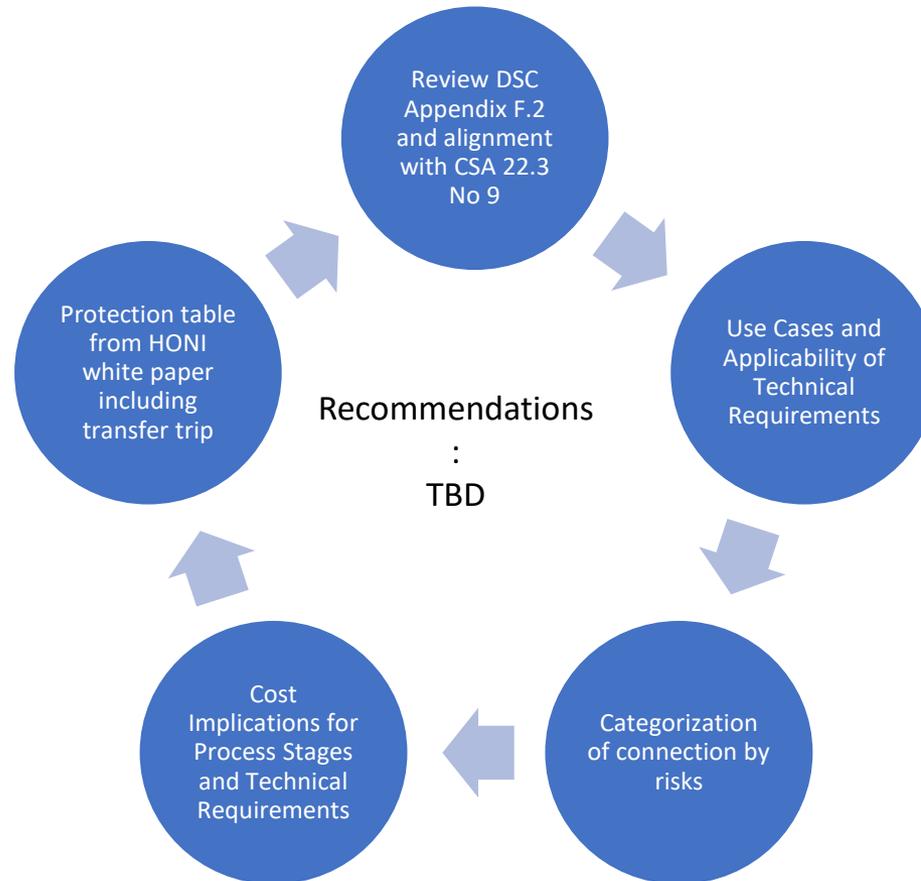
\*Meetings Resume



Holiday

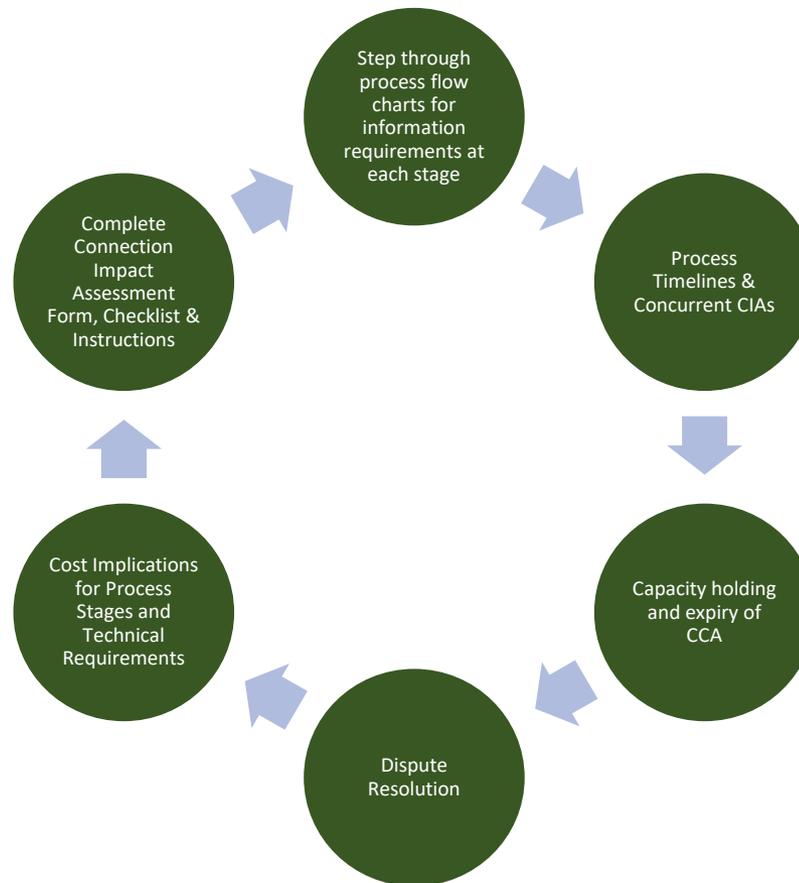
# Tranche 2: Deeper Dive - Technical

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# Tranche 2: Deeper Dive -Process

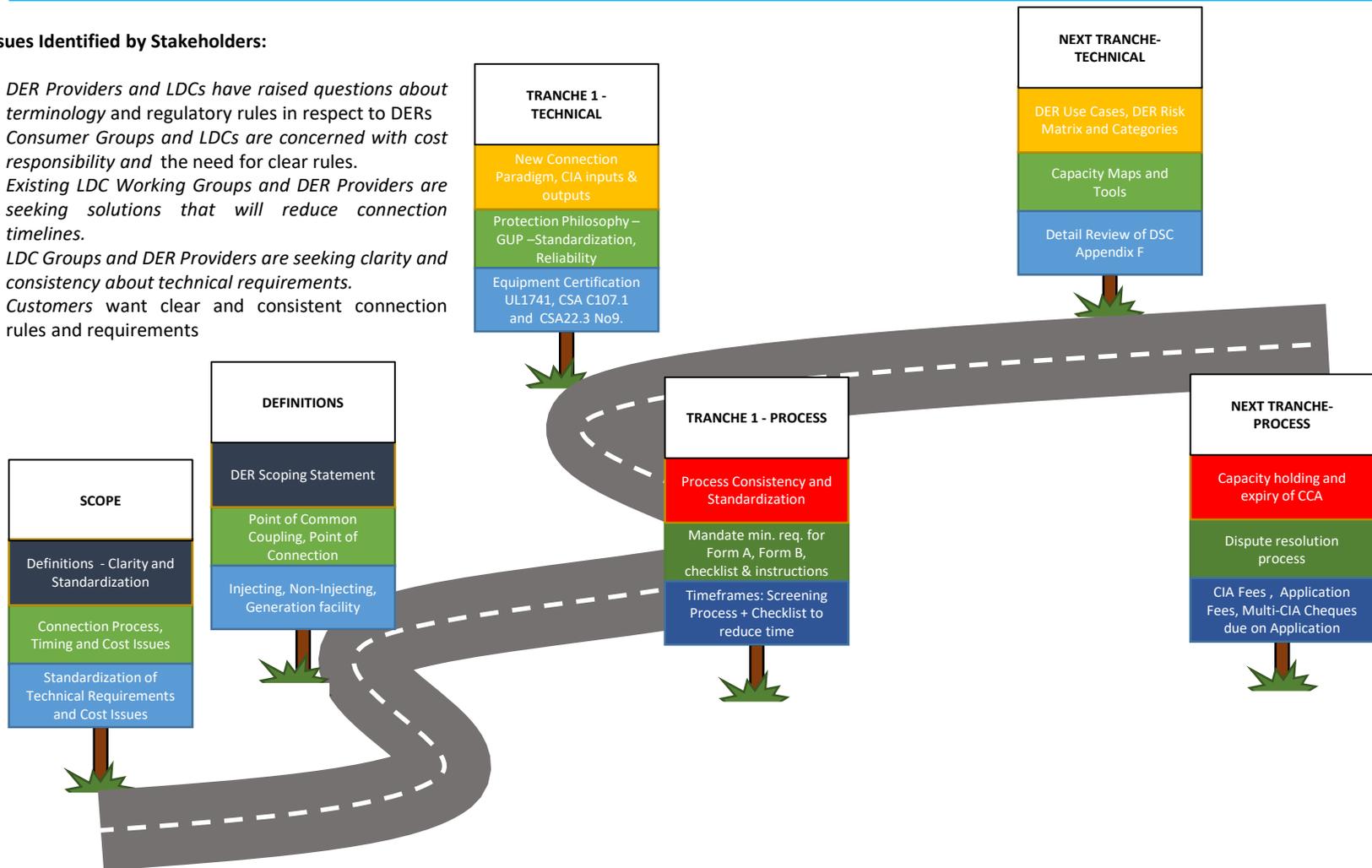
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# DER Connections Review Strategic Plan Roadmap

## 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



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*The End*

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*Break*