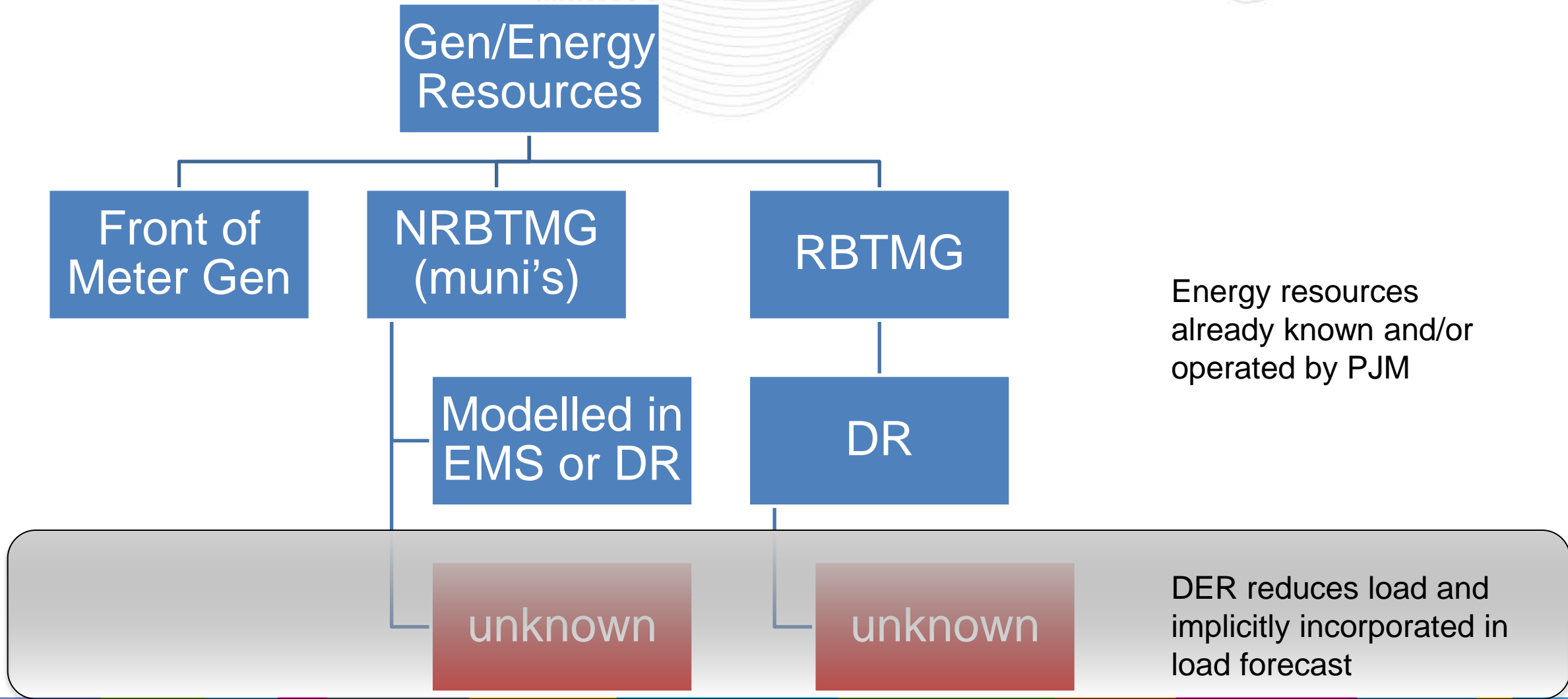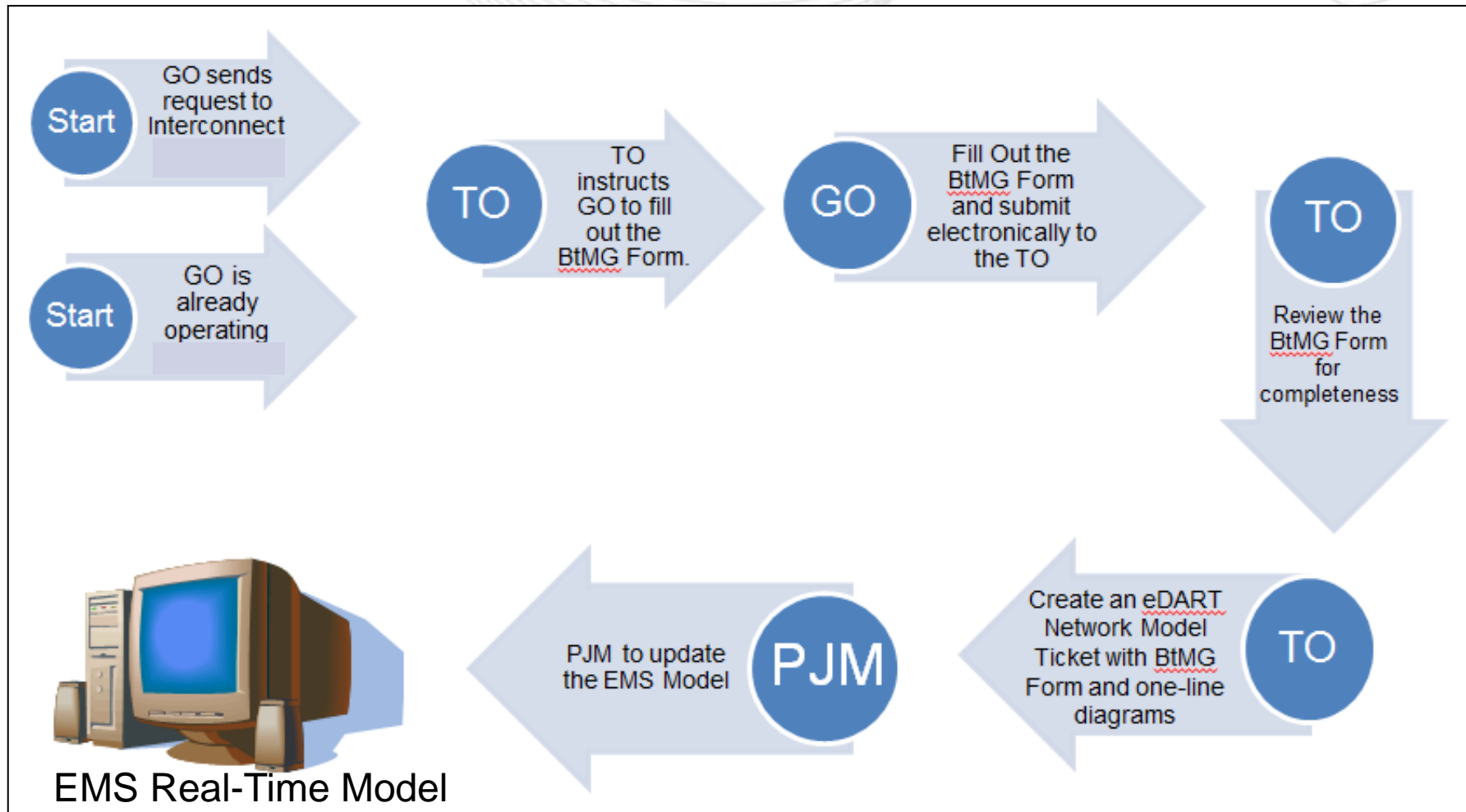# Non-wholesale DER Observability

DER Subcommittee

1/5/18

- Non-wholesale DER – generation (including storage) that does not participate directly in the wholesale markets (either as front of meter generation or demand response) and is used to self-serve load
  - Non-retail Behind the Meter Generation (NRBTMG)
    - Primarily Muni/Coop generation
  - Behind the Meter Generation (BTMG)
    - Cogen/CHP, emergency diesel, CTs, batteries, solar, etc.

Gen/Energy Resources

Front of Meter Gen

NRBTMG (muni's)

RBTMG

Modelled in EMS or DR

DR

Energy resources already known and/or operated by PJM

unknown

unknown

DER reduces load and implicitly incorporated in load forecast

- System Operations
  - Address System issues/mitigate manual load dump
    - Coordinate post-contingency load shed plan
  - Operational awareness for communication process
  - Improve short term load forecast and/or better understand load forecast variance
- Planning
  - RTEP load flow studies (may model explicitly as gen or implicitly through load forecast)
  - Improve long term load forecast or better understand load forecast variance
- Manage existing NRBTMG and BTMG requirements (including telemetry & metering)

- Non-wholesale DER data collection and TO verification process
  – PJM to download EIA 860 generation data, remove wholesale resources (interconnected Gen and DR) and validate through TO
  – PJM solicitation of State Regulatory Commissions
  – Data loaded into Dispatch Interactive Mapping Tool for dispatchers.
- Communication process to non-wholesale DER – add hoc process based on needs
- Forecast – develop solar non-wholesale long term and short load forecast
  – No forecast available for other non-wholesale DER

- NRBTMG – solicit members for self-identification and model in EMS based on availability

- BTMG – collect data through TO through eDART and display in EMS for dispatchers.

  - Standard template for TO to collect information from GO (based on EIA860 data submission requirement).

  - Collect telemetry/load data as available.

Start — GO sends request to Interconnect

Start — GO is already operating

TO — TO instructs GO to fill out the BtMG Form.

GO — Fill Out the BtMG Form and submit electronically to the TO

TO — Review the BtMG Form for completeness

TO — Create an eDART Network Model Ticket with BtMG Form and one-line diagrams

PJM — PJM to update the EMS Model

EMS Real-Time Model

PJM Manual 3A, Section 1.2.1 and Appendix D has specifics.

PJM Behind the Meter Generation Submission Form

BtMG Form Description

This form is to gather information on Behind the Meter Generators. PJM will use this information to update the EMS model. Refer to PJM Manual 3A Section 1.2.1 for more details regarding this form.

General Information

In Service Date:		Transmission Owner:	
Utility Company Name:		Generator Name:	
Utility Company Address:		Generator Address:	
Utility Company Phone:		BtM Generator Contact:	
Utility Company Email:		Generator Email:	
System Operating to (check one): Distribution (<100 kV) ☐ Transmission (>100 kV) ☐		Generator Code:	

GIS Data (latitude, longitude):

Modeling Information

Generator Model Update (required section):

➤ Commercial name:
➤ Attach Generator single-line diagram
➤ Generator Information:

♦ Unit Type (see below):
♦ Fuel Type:
♦ Maximum Output PMax (total):   MW
♦ Number of Units:
♦ Operating Voltage: (kV)

Transmission Model Details (can be supplied by TO in Network Model Request):

➤ Nearest Transmission Substation name:
➤ Attach Transmission Substation single-line diagram

Telemetry (see Manual 14D, Appendix A (9) to determine applicability):

➤ From TO via ICCP

♦ Provide status of circuit breakers and switches
♦ Provide MW and MVAr measurements
♦ Provide Voltage

Please complete and attach to eDART Network Model Application

http://www.pjm.com/~/media/committees-groups/subcommittees/dms/postings/btmg-submission-form.ashx

Description of each data entry field is given in PJM Manual 3A, Appendix D.

- PJM to propose enhancements to existing challenges at next meeting