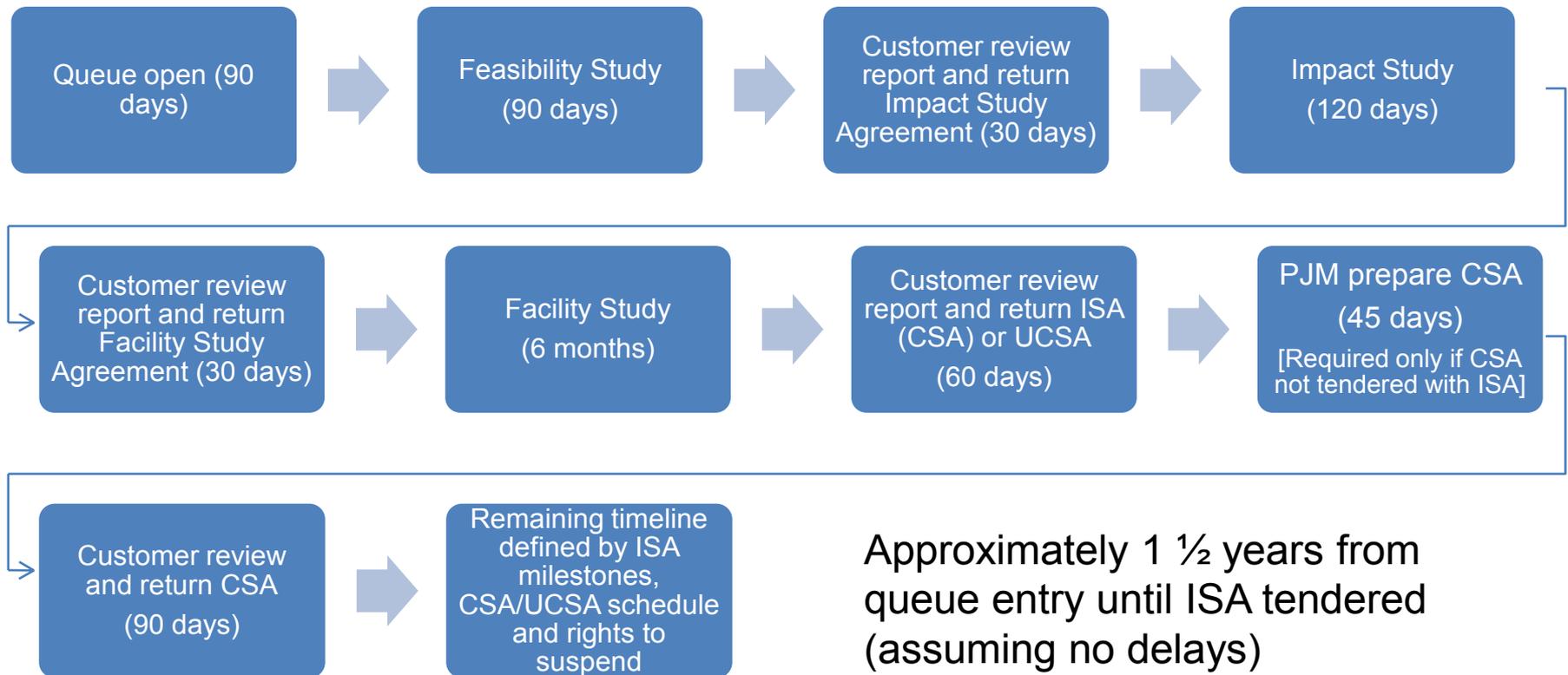


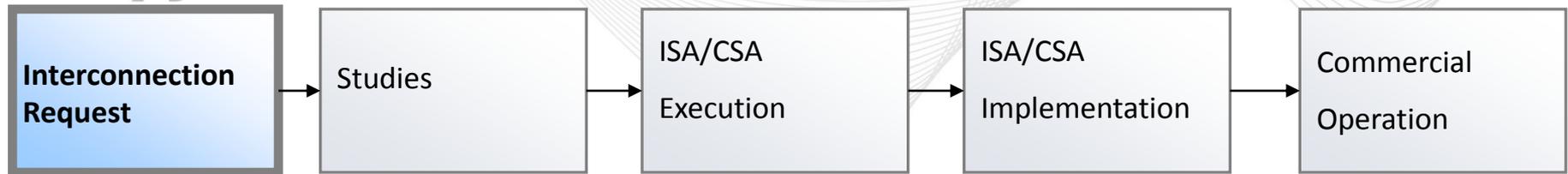
# Generation Interconnection Process

NEMSTF  
Education Session 1  
January 19, 2012

## Follows FERC Pro Forma Process

- Queues are “open” for a 3 month period
  - Spreads Workload Out Over Year
  - Generation, Merchant Transmission, ARR, and Long-Term Firm Transmission Service Queues are Fully Integrated
- Specific Rights Based on Queue Position and Satisfaction of Milestone Requirements
  - Feasibility, System Impact, and Facilities Studies Identify Required Upgrades
  - Studies provide progressively more detail
  - Queue volume and drop-out rate require frequent re-studies
- Required Transmission Upgrades Based on Reliability Criteria – paid by Developer



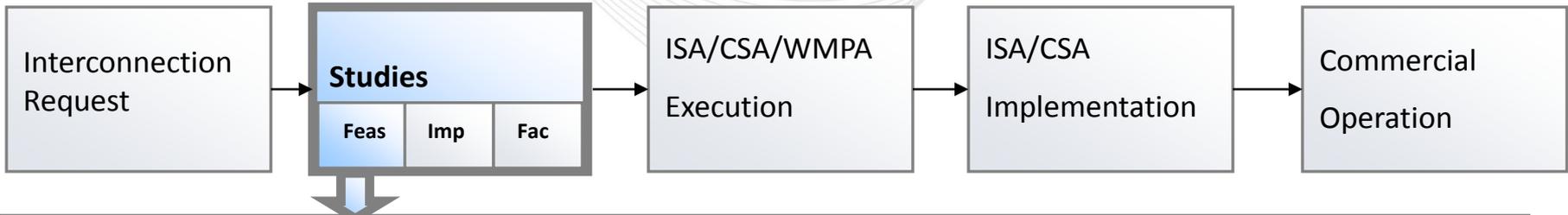


## **OATT Attachment N, Y, BB, S, EE**

- N – Generation (>2 MW)
- Y – Generation (<= 2 MW)
- BB – Generation (< 10kW, inverter based)
- S – Merchant Transmission
- EE – Upgrade Request

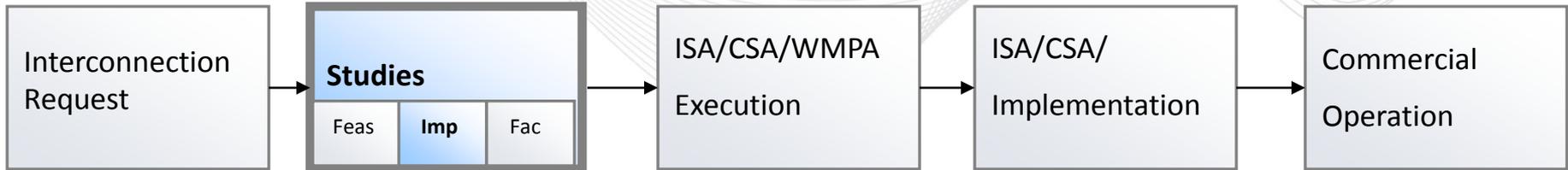
## **Required Information**

- Location
- Project Size
- Ownership (site control for generation requests)
- Equipment Configuration
- Planned In-Service Date
- Deposit
- Data



## Feasibility Study (Long Term Firm - Initial Study)

- Required
  - Deposit based on request timing and MW/MVA size (later queue month = more money)
  - Site control for generation requests
  - In-service date within 7 years of entering queue (exceptions allowed)
- Study Completion
  - Target 90 Days after close of queue (PJM targets 60 days after queue close to provide load flow to Transmission Owners)
- Study By
  - PJM and TO (Contractor under direction of TO)
- Results
  - Attachment Facilities Needed for Interconnection
  - Identify Transmission Overloads and Required Upgrades (Costs and Construction Schedule Estimates for primary POI)
  - Identify overloads associated with secondary POI (no cost or schedule estimates)
  - Short Circuit Analysis



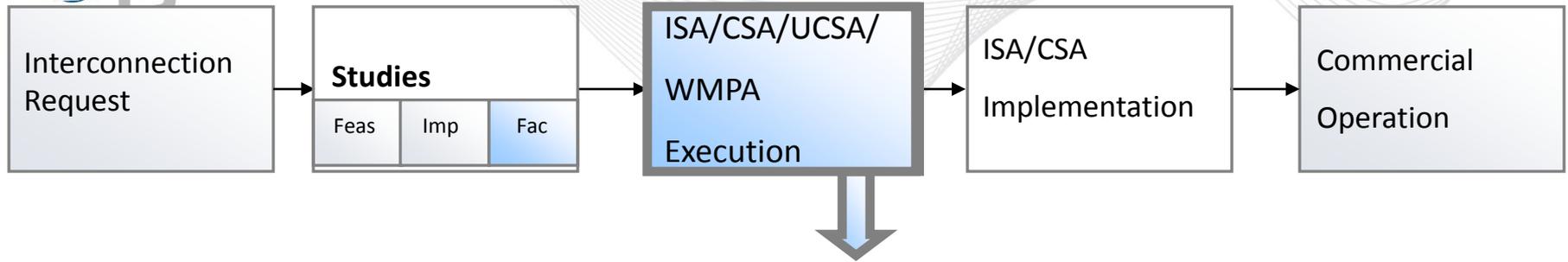
## **Impact Study** (Start of analysis for Upgrade Requests)

- Required
  - Deposit based on MW/MVA size
  - Initial Air Permit Application (N/A for solar/wind projects)
  - Ownership (site control for Transmission Interconnection Requests)
- Study Completion
  - Target 120 days after execution of Impact Study Agreement (PJM targets 80 days following commencement of Impact Study to provide load flow to TOs)
- Study By
  - PJM and TO (Contractor under direction of TO)
- Results
  - Gen & Load Deliverability Analysis
  - Stability Analysis
  - Short Circuit Analysis
  - Cost Estimates and Allocations



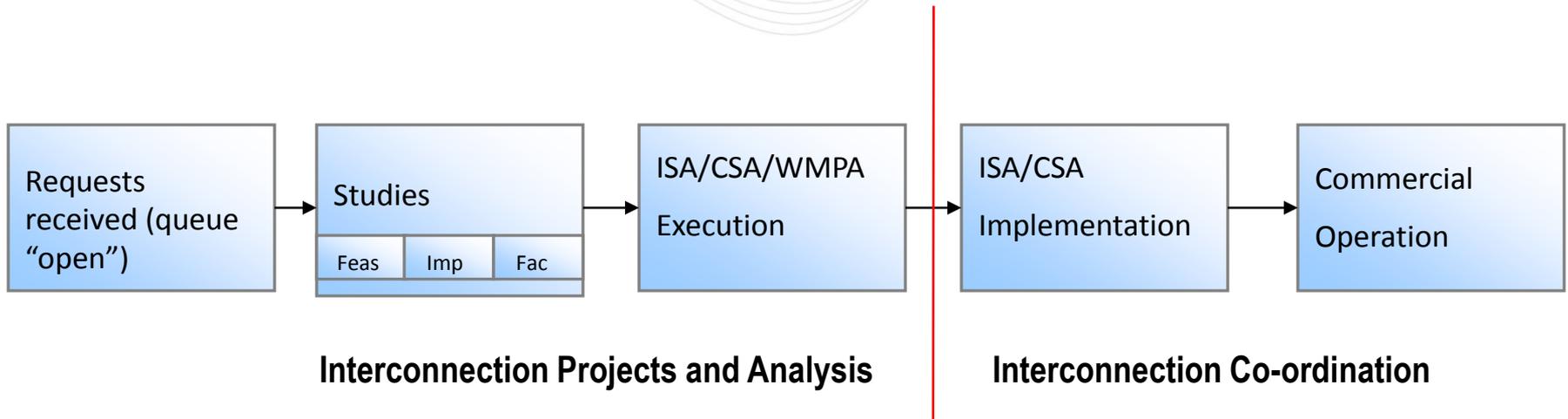
## Facilities Study (Initial Engineering Review)

- Conduct governed by procedures as set forth in Attachment D of Manual M-14A
- Required
  - Deposit based on MW/MVA size
- Completion
  - 6 Months (estimated)
- Study By
  - TO (or Contractor under direction of TO)
- Results
  - Conceptual Design (Detailed Design as appropriate) for:
    - Attachment Facilities
    - Network Upgrades
  - Cost Estimates
  - Engineering and Construction Schedule
- Potential for Impact Study re-tool



Type of Interconnection Agreement used is based on FERC jurisdictional determination

- Interconnection Services Agreement (ISA) used if project is FERC jurisdictional
- Wholesale Market Participant Agreement (WMPA) used if not FERC jurisdictional
  - Will require additional 2 party Interconnection Agreement between Developer and TO
- Interconnection Construction Service Agreement (CSA) identifies terms, conditions, and coordinates construction activities for Attachment Facilities and Network Upgrades
- Upgrade Construction Service Agreement (UCSA) identifies terms, conditions, and coordinates construction activities for Network Upgrades



- Projects may drop out of the queue at any time
- Project size may be reduced but not increased
- Projects are withdrawn from the queue if they miss milestones or financial obligations

# QUESTIONS ?