



**ERCOT Interconnection Process:**

Generation Entity Winter Weather Preparedness  
Workshop.

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Manager, Resource Integration

# ERCOT Interconnection Process

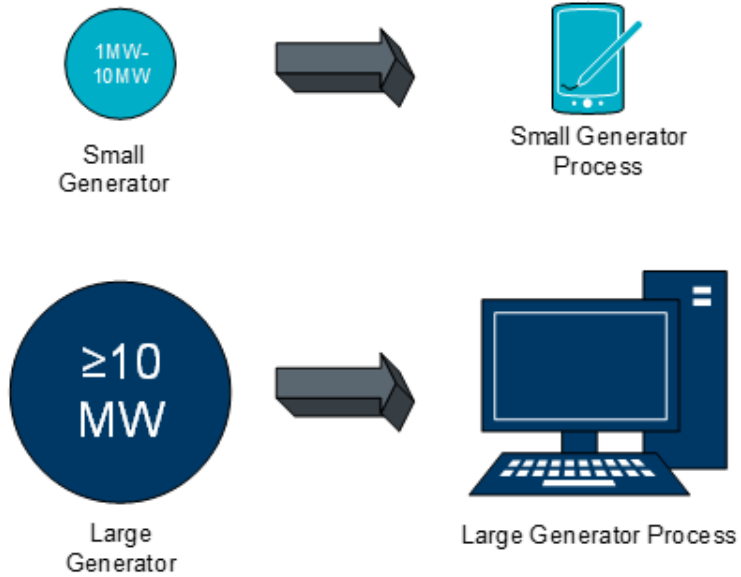
ERCOT Interconnection process slightly different than most of the country

- Not a Queue, each project moves on its own, but may seem like a queue at crunch points where staff limitations are pronounced.
- Deliverability not guaranteed. Only “Driveway” is built during Interconnection Process, “Highway” determined through Planning Process.
- “Connect and Manage” process where generation is connected and managed by congestion management during real time operations.
- Studies are done to ensure reliability, but not to build transmission.

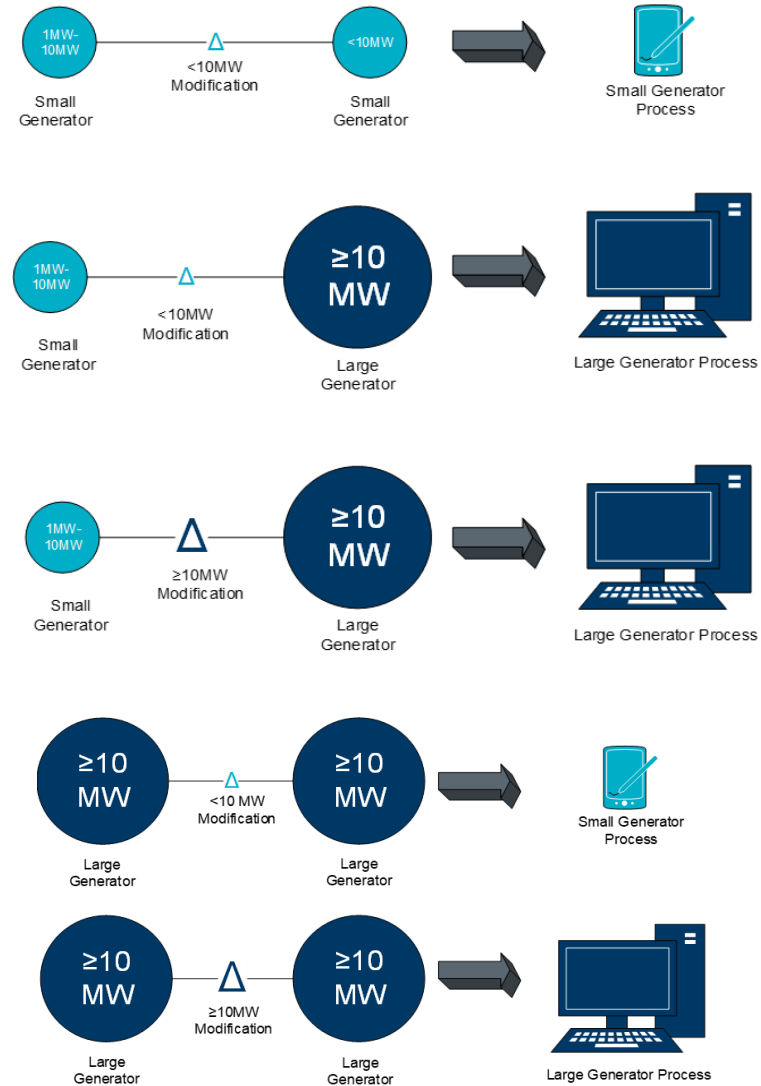
ERCOT process is 18 to 30 months for Large Generation ( $\geq 10$  MW) and 8 to 12 months for Small Generation ( $< 10$  MW) not including construction/supply delays.

# Planning Guide Section 5 Small/Large Interconnections

## New Units



## Changes to Existing Units



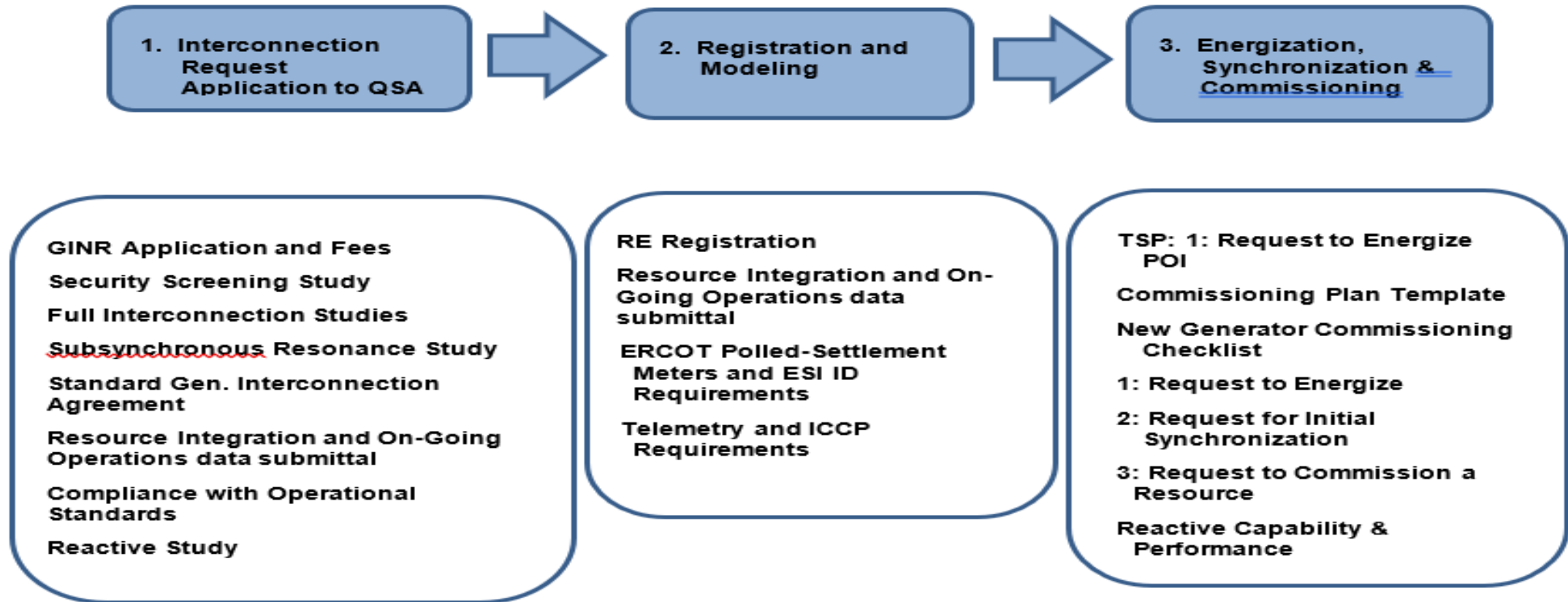
# Resource Interconnection Process – Large Generation

**Stage 1: Interconnection Request Application to Quarterly Stability Assessment**

**Stage 2: Registration and Modeling**

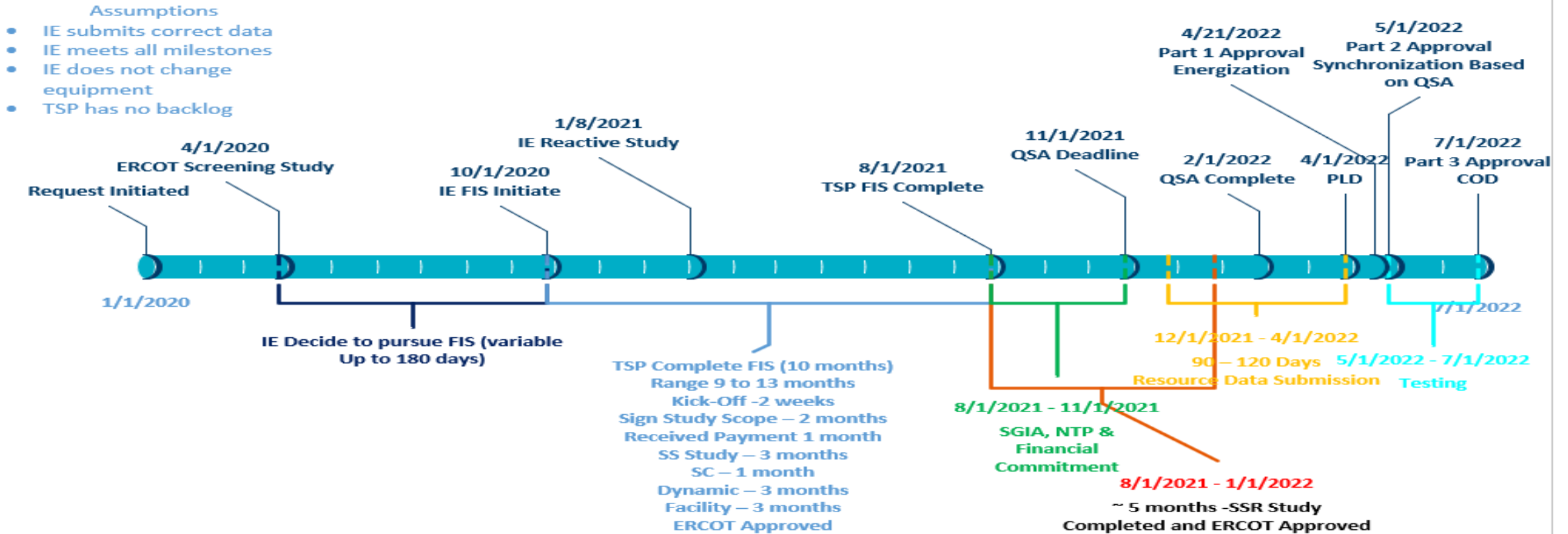
**Stage 3: Energization, Synchronization and Commissioning**

**Figure 1: Generation Resource Interconnection Process Flow**



# Large Generation Timeline for Screening Study only

## Current Process Normal Time Line for Project Wanting Only Screening Study (No Construction Bottlenecks) 24 - 30 Months

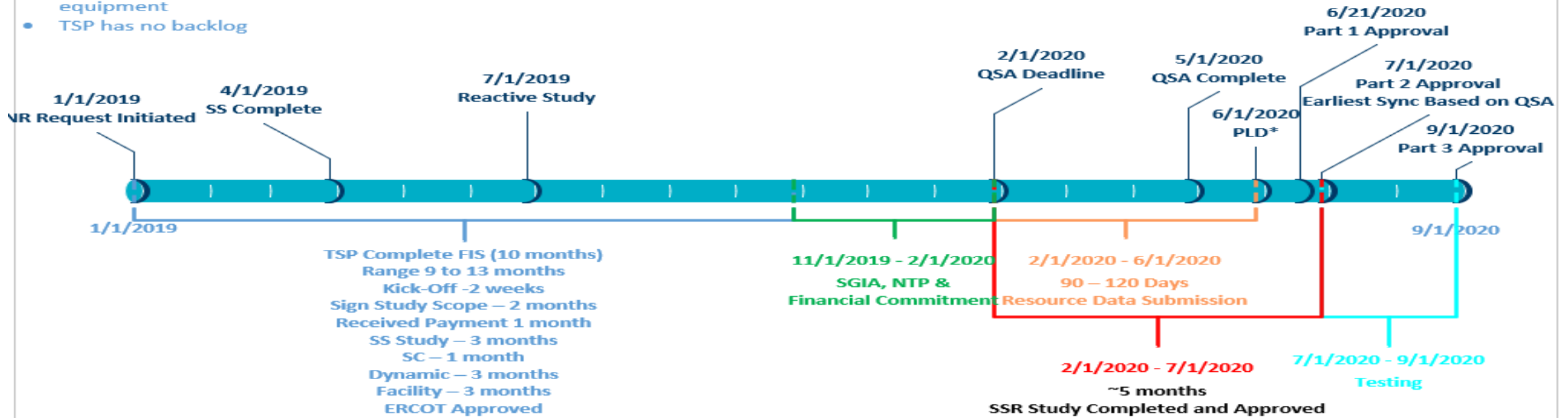


\*Interim updates are not allowed for new units. Interim update requests must be approved by ERCOT Network Modeling. Construction time for TSP to construct needed facilities not shown. Start of construction dependent on RE giving TSP Notice to Proceed and providing the Funding to construct the interconnection facilities. Length of time needed for construction depends on facilities being constructed. The PLD shown above is normally after completion of construction.

# Large Generation Timeline Simultaneous SS and FIS

## Current Process for Large Generation Project Wanting Simultaneous Screening Study and Full Interconnection Study (No Construction Bottleneck) 20 Months

- Assumptions**
- IE submits correct data
  - IE meets all milestones
  - IE does not change equipment
  - TSP has no backlog

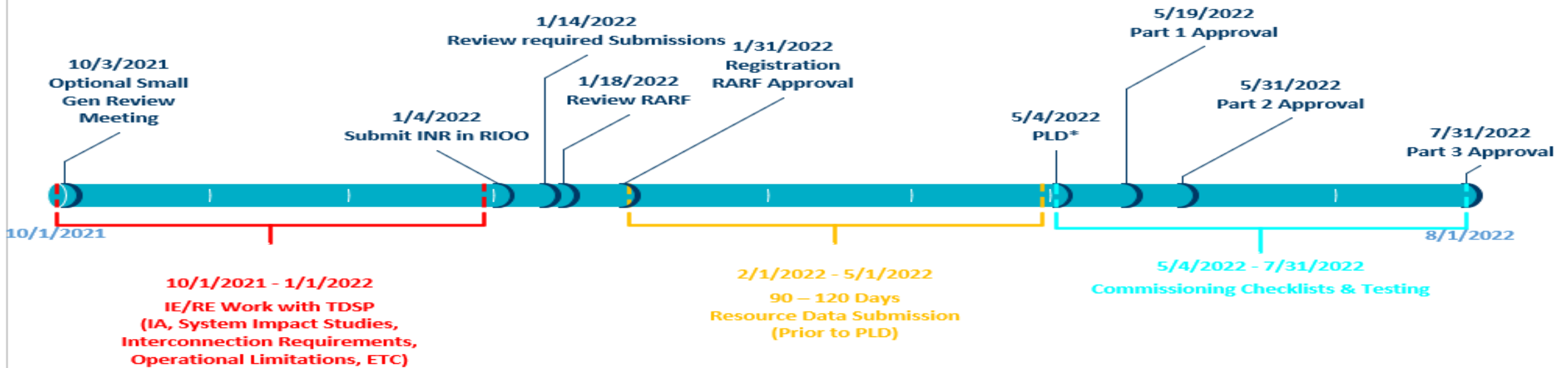


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# Small Generation Timeline

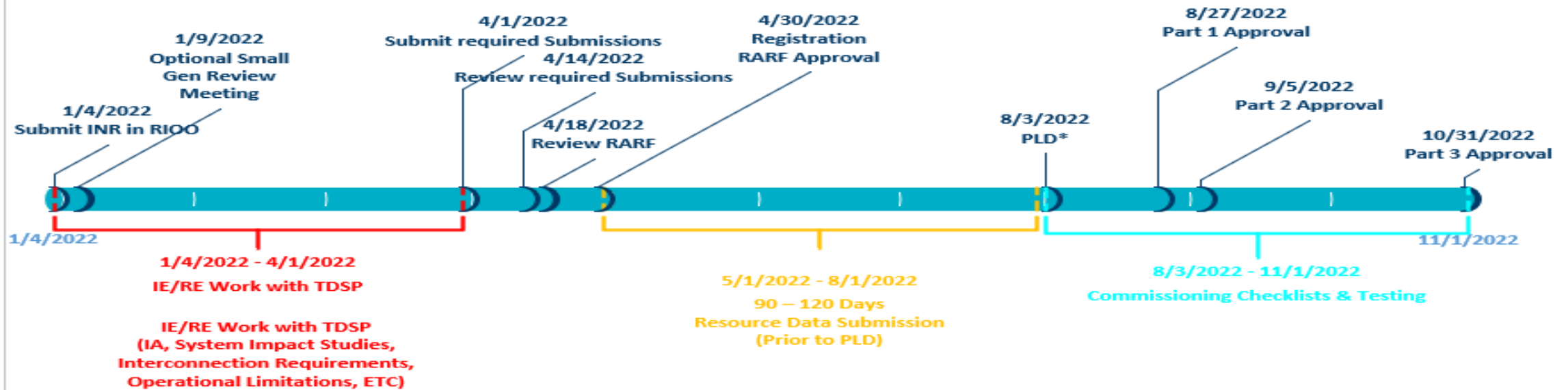
## New Process for Small Generators TDSP Work Prior to RIOO Submittal (8 to 10 Months Timeline for Projects After the DGR Moratorium)



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# Small Generation Timeline

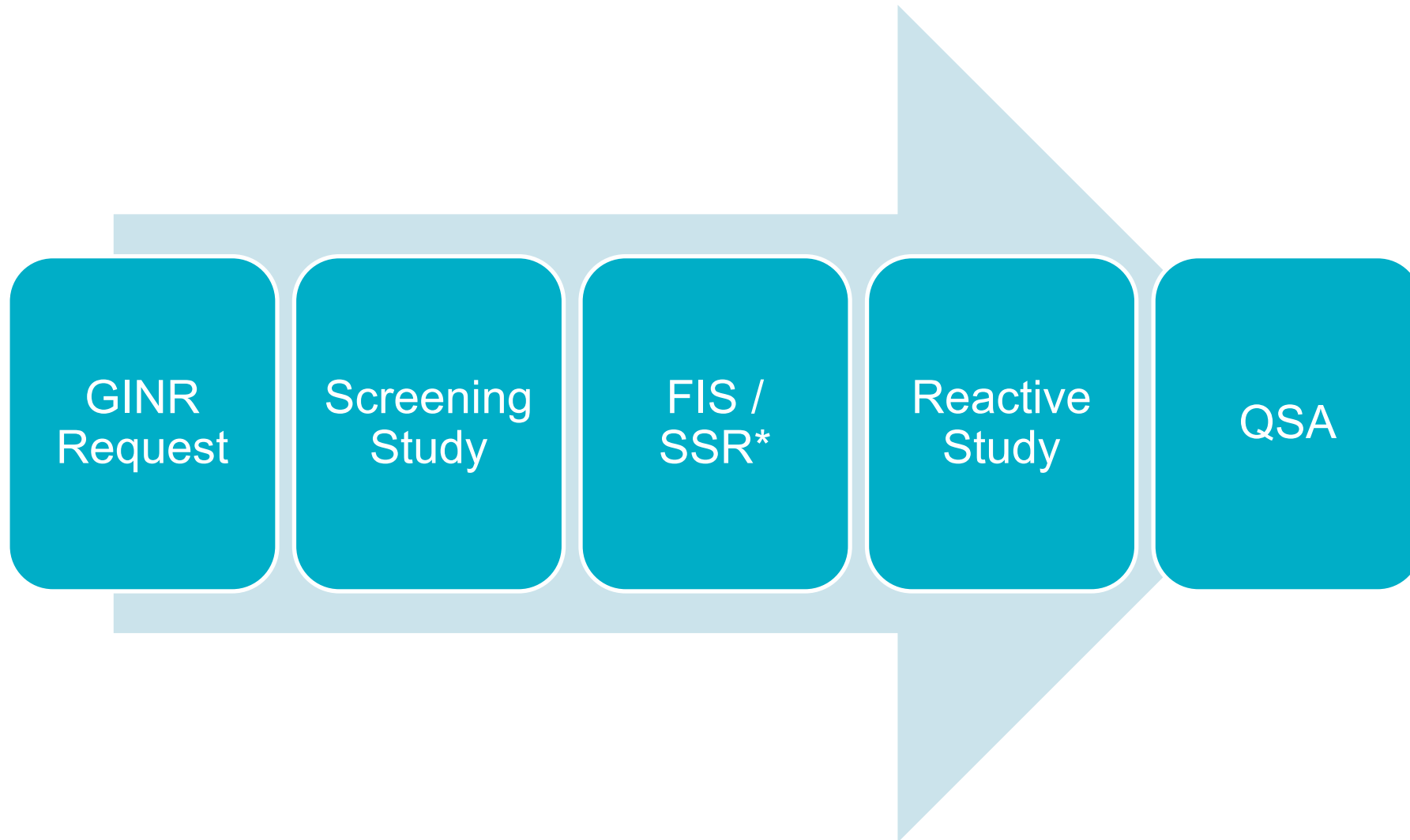
## New Process for Small Generators RIOO Submittal Prior to TDSP Work (8 to 10 Months Timeline for Projects after DGR Moratorium)



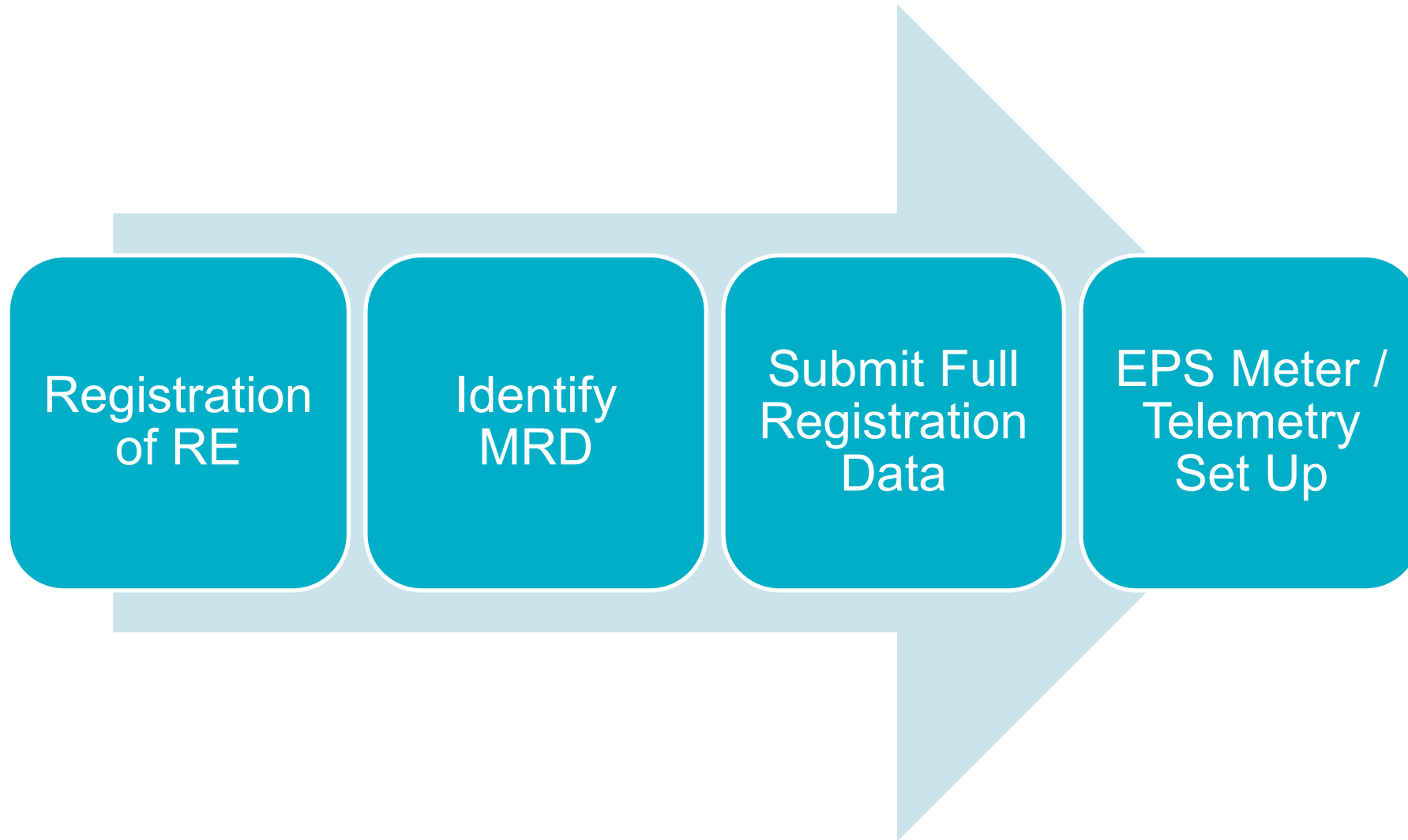
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# STAGE 1 – Generation Interconnection Request Application to QSA



## STAGE 2: Resource Registration and Modeling Milestones



## Stage 2: Registration and Modeling

The Resource Integration and Ongoing Operations – Interconnection Services (RIOO-IS) is the application used to contain the generator and associated equipment modeling data needed for ERCOT systems. The contents of RIOO-IS are governed by the [Resource Registration Glossary](#). Each field in RIOO-IS must be submitted at certain times during Stage 1, 2 and 3 as indicated by the following columns in the Glossary:

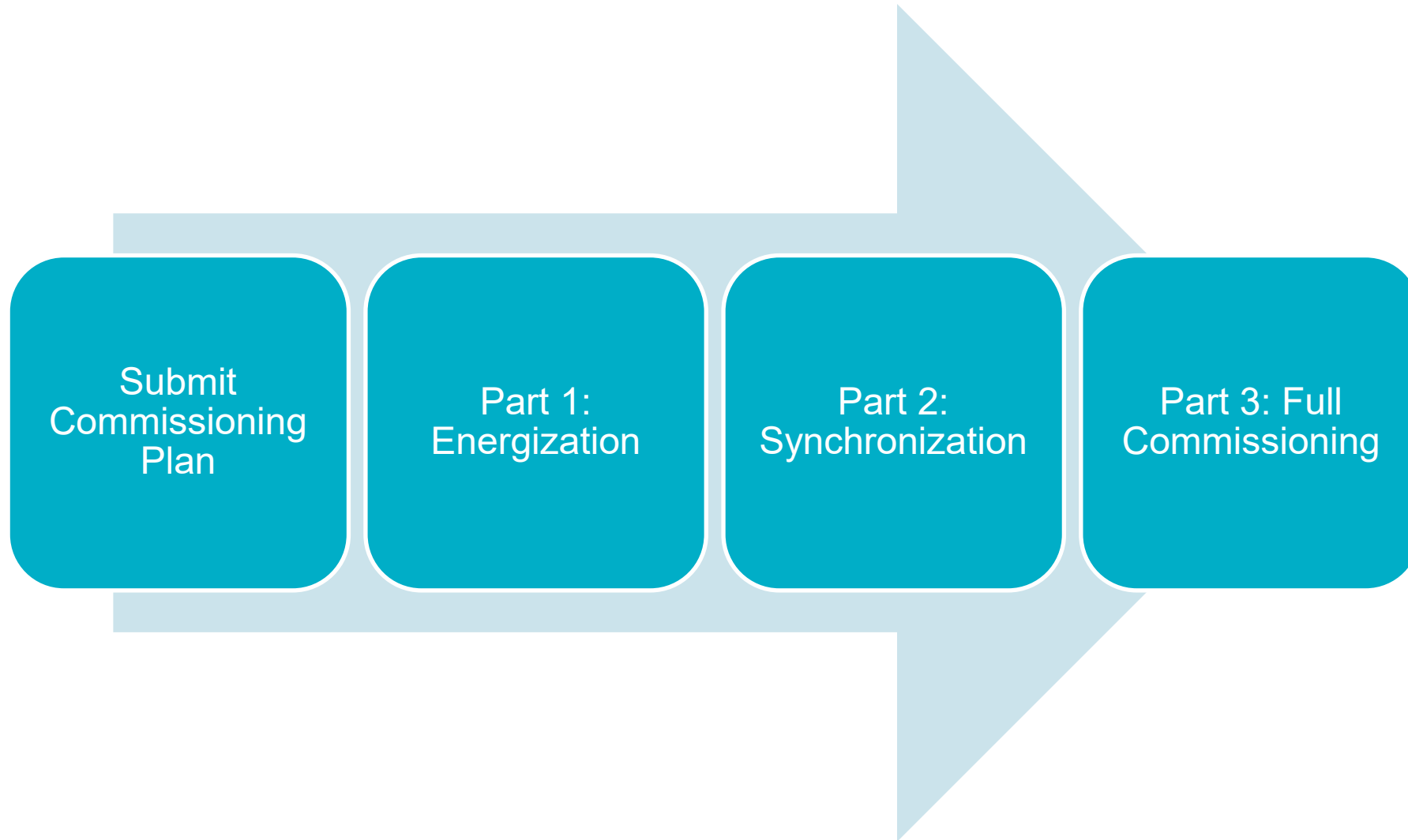
- Full Interconnection Study (FIS)
- Planning Model (to meet PG 6.9)
- Full Registration

The first Resource Data is due at FIS. This data is then expanded for the Planning Model. At Full Registration, all Resource data must be submitted in RIOO-IS. **The RE should reach out to ERCOT at least 30 days prior to the deadline for their Production Load Date (PLD) to allow for calls and review of the resource data.**

For Full Registration, Resource data must be submitted **at least 15 days** prior to the ***Deadline for Model Change Submit Before*** date for the desired PLD. **Data submitted within 15 days of the deadline may not get processed in time to be included in the desired PLD!**

Once the data has reached the Production Load Date (PLD) where the generator(s) are modeled in the Network Operations Model and preparing for energization, the RE shall use RIOO-Resource Services (RIOO-RS) to submit any changes to that data.

## Stage 3: Resource Commissioning Milestones



# STAGE 3: Energization, Synchronization and Commissioning

## ERCOT New Generator Commissioning Checklist

The three-part ERCOT New Generator Commissioning Checklist is designed to coordinate the energization, synchronization, and commissioning of a new or modified generator once all qualification measures have been met to the satisfaction of ERCOT.

- Part 1: Request for Energization of Resource Entity Equipment
- Part 2: Request for Initial Synchronization (up to 20 MVA, > 20 MVA)
  - IRR Curtailment Test
  - Reactive Power Capability Test
  - Voltage Support Service (VSS) Test (Calculated)
  - Automatic Voltage Regulator (AVR) Test
  - Primary Frequency Response (PFR) Test
  - Power System Stabilizer (PSS) Test
- Part 3: Request to Commission a Resource
  - Resources requesting commercial operation outside of the Summer and Winter seasons do not need to submit a declaration of weather preparedness for Part 3 Approval.
  - Those new resources can be declared together with other existing resources during the May 1 – Jun 1 and Nov 1 – Dec 1 semi-annual declaration of weather preparedness submittal windows.

Generator has now completed the interconnection process.

## Small Generation Process

The Small Generation process is governed by Planning Guide Section 5.4.

RIOO-IS Small Generation Initial Application Checks:

- One-line diagram (Need the Load Transformer name on the One-Line)
- Valid Load/Load Transformer information in RIOO-IS to describe where it is connected
- Site Photos, .kmz files, and/or Maps
- Proof of Site Control
- Signed Declaration of Department of Defense (DOD) Notification
- Payment for Small Gen application
- System Impact Study – Conducted by TDSP (Operating Guide Section 2.9 [VRT], Operating Guide Section 2.6 and 2.9 [FRT and VRT] and Planning Guide Section 5.4.2)
- Resource Data Submission – Entered into RIOO by IE/RE
  - Include the TDSP Station Name and Code for the Resource Site Name/Code
  - All Operation Limitations should be reflected
  - Include Load Resource INR if BESS (Until ESR data entry is created)

# Resource Integration page

ercot.com/services/rq/integration

SharePoint Home Google Electric Reliability C... GINR Dashboard Pr... GINR Dashboard IT... DEV14 GINR Dashb... GINR Prod Cognos Grid Geo ~ Log In Siebel Energy Res

MIS LOG



About ERCOT Services Committees and Groups Market Rules Market Information Grid Information

[Home](#) > [Services](#) > [Registration and Qualification](#) > [Resource Integration](#)

## Resource Integration

This section offers steps to guide Interconnecting Entities (IEs) and Resource Entities (REs) through the interconnection process for new or modified generation interconnections within the ERCOT system. Entities wishing to interconnect new generation or modify existing generation should refer to Planning Guide, Section 5.1.1 - Applicability, to determine if the proposed resource or modification must go through the Generation Resource Interconnection or Change Request (GINR) process.

Transmission-connected resources not subject to the requirements of Planning Guide Section 5 must still submit appropriate Resource Asset Registration Forms (RARF) found in the Models section below. Guidelines for Distributed Generation can be found on the [Distributed Generation](#) page. Any questions on resource integration can be directed to [ResourceIntegrationDepartment@ercot.com](mailto:ResourceIntegrationDepartment@ercot.com).

IEs wishing to submit or modify a GINR application must do so through the online [Resource Integration and Ongoing Operations – Interconnection Services \(RIOO – IS\)](#) application, following the processes described in Planning Guide, Section 5 and the RIOO-IS IE User Guide. Links to both guides can be found in the Guides section below.

Applicable fees are specified in the ERCOT Fee Schedule.

Once a planned Generation Resource has met the requirements of Planning Guide Section 6.9 - Addition of Proposed Generation to the Planning Models, it may be registered with ERCOT. The entity that will register with ERCOT and be responsible for the Resource is the RE. This may be the IE, or another entity.

Information is also provided for Transmission Service Providers (TSPs) to sign up for and use RIOO-IS, in order to perform tasks pertaining to the interconnection process.



# Resource Interconnection Handbook

## Guides

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### [Model Quality Guide](#)

Aug 12, 2022 - zip - 1.6 MB

Assists REs/IEs submit stability models per Planning Guide Section 6.2, including the new Model Quality Testing requirements. Also includes the UDM Model Guideline and PSCAD Model Guideline.

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### [Self Limiting Facilities In the Interconnection Process](#)

Mar 30, 2021 - docx - 161.6 KB

This document describes the process to submit Self-Limiting Facilities in the Generation Resource Interconnection or Change Request (GINR) Process prior to full implementation of NPRR1026.

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### [Planning Guide](#)

Section 5, Generation Resource Interconnection or Change Request (GINR), defines the requirements and processes used to facilitate new or modified generation interconnections.

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### [Resource Interconnection Handbook](#)

Jun 21, 2022 - docx - 1.4 MB

Provides an overview of the Generation Interconnection or Change Request (GINR) process that Interconnecting Entities/Resource Entities must follow in order to add new generation/modify existing generation connected to the ERCOT Transmission Grid.

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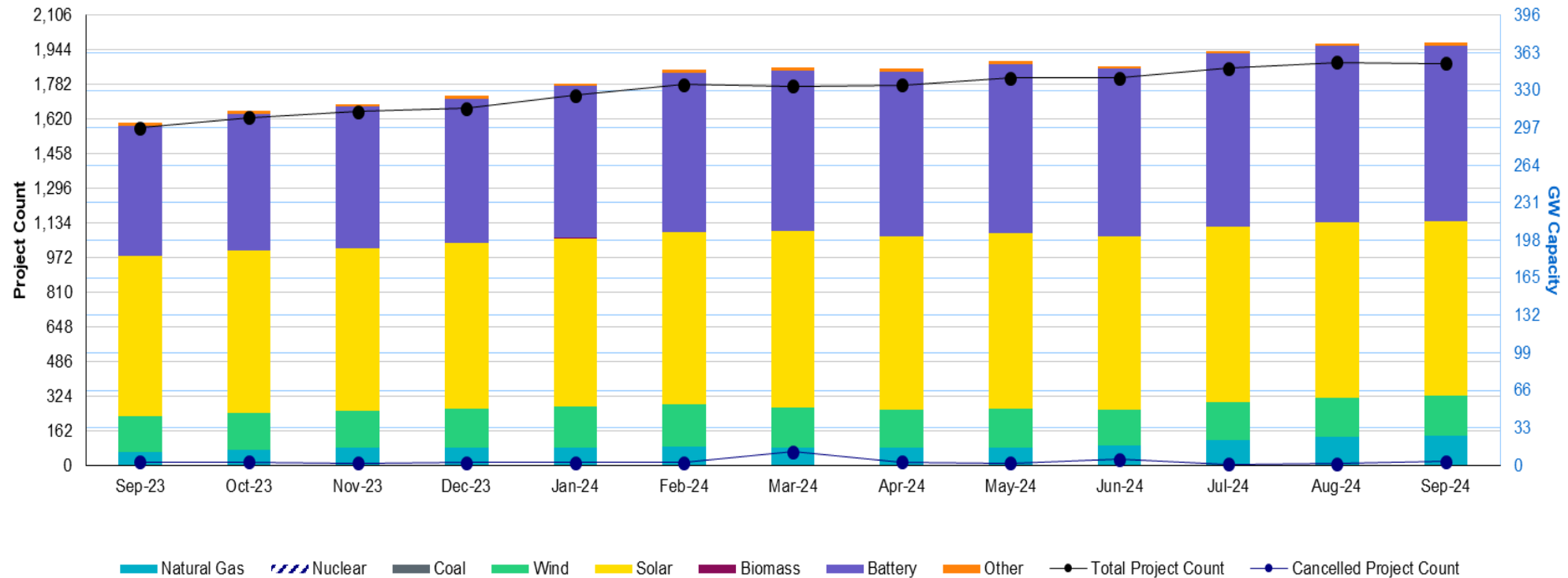


# Generation Interconnection Requests

1,881 active generation interconnection requests totaling 372 GW as of September 30th, 2024  
(Solar 154 GW, Wind 35 GW, Gas 26 GW, and Battery 154 GW)

(Excludes capacity associated with projects designated as Inactive per Planning Guide Section 5.7.6)

Monthly Capacity by Fuel Type plus Project Count, 13-Month Rolling Basis

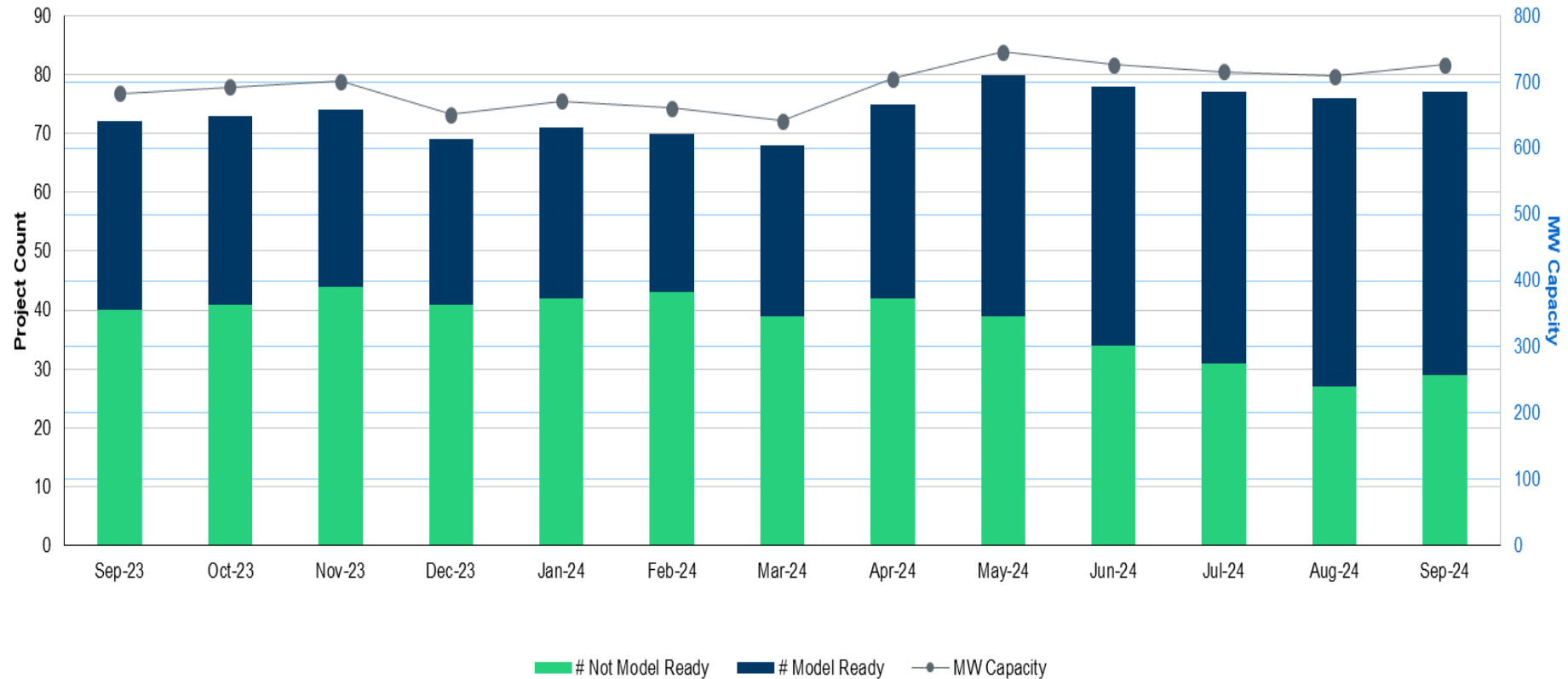


A break-out by zone can be found in the monthly Generator Interconnection Status (GIS) reports available on the ERCOT Resource Adequacy Page: <http://www.ercot.com/gridinfo/resource>

# Generation Interconnection Requests

Small Gen- 29 projects Not Model Ready, 48 projects Model Ready

### Small Generator Monthly Capacity by GIM Milestone plus Project Count, 13-Month Rolling Basis



A break-out by zone can be found in the monthly Generator Interconnection Status (GIS) reports available on the ERCOT Resource Adequacy Page: <http://www.ercot.com/gridinfo/resource>

Questions?

