RIOO User Guide – Creating a New Load Resource

Version 2.0
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ERCOT RIOO Interconnection Services

To create a new Load Resource (LR) and to get it interconnected to the ERCOT Network Model, the Resource Entity (RE) representing the LR must use the Resource Integration and Ongoing Operations – Interconnection Services (RIOO – IS) application. RIOO – IS allows the RE to create an Interconnection Request (INR) for a new LR. The ERCOT Demand Integration team will review and process the INR. And, the RE can view the current status of the INR in RIOO throughout the timeline from the initial submission to when the new LR is loaded into the production Network Model.

About this guide

This guide provides information about performing the tasks in RIOO – IS to create and submit the INR that proposes a new LR to interconnect to the ERCOT Network Model. Any sample data used to demonstrate the application is fictitious and does not represent actual LR registration data or market activity for any Resource Entity or Transmission and/or Distribution Service Provider (TDSP) used in the samples. The samples are test data created to provide visual aids for this user guide.

Customers who can change their Load in response to a Dispatch Instruction and can meet certain performance requirements may qualify to become LRs. Qualified LRs may participate in ERCOT's real-time energy market through Security-Constrained Economic Dispatch (SCED) and/or qualify to provide any of the following Ancillary Services (AS): ERCOT Contingency Reserve Service (ECRS), Non-Spinning Reserve (Non-Spin), Regulation Down Service (Reg-Down), Regulation Up Service (Reg-Up), and Responsive Reserve (RRS).

In the ERCOT markets, the value of an LR's Load reduction is equal to that of an increase in generation by a generating plant. LRs in SCED submit bids to buy power up to their specified level and are instructed by ERCOT to reduce Load if wholesale market prices equal or exceed that level. LRs that are scheduled or selected in the ERCOT Day-Ahead AS Market are eligible to receive a capacity payment regardless of whether they are dispatched in Real-Time.

Table of Contents

Before starting your INR

Before starting your INR, be sure that you have done the following tasks:

Sign up for a RIOO Services User Account for a Resource Entity

- The user must be associated with a registered RE.
- The RE's User Security Administrator (USA) must add the RIOORS_M_Operator role to the user's Market Participant Identity Management (MPIM) profile, commonly known as the digital certificate.
- After the role is added, an email request will be sent to complete the process of creating the user account, which involves changing the system-assigned password and associating your login information with a multifactor authentication (MFA) app on your mobile phone that verifies your login attempts.
- The **RE Sign Up Guide** provides more details for signing up for a RIOO Services User Account. This guide is available on the [Resource Integration webpage](), under **RIOO Documentation**.

Check for electronic payment debit blocks

If you intend to submit INR payments by electronic checks drawn on your bank account (ACH payment instead of credit card), you should check with your financial institution to be sure you do not have an automatic debit block on your account for ACH transaction amounts. It may take at least two days to remove the block, which can cause processing delays for your INR. If you do have an automatic debit block on your account:

- Have your financial institution send you the form to authorize ACH transactions you will be making with ERCOT.
- On the form:
    - For Vendor, enter **Authorize.net**.
    - For Vendor ID, enter **1911718107**.
- Submit the form to your financial institution.

Coordinate a Production Load Date (PLD) and Dispatch Asset Code (DAC) for each new LR

When creating an INR for a new LR, the RE will need to request a PLD in RIOO during the registration process. The RE should coordinate the PLD via email with the ERCOT Demand Integration team (ERCOTLRandSODG@ercot.com). This coordination is not required, but it can help ensure that the requested PLD is acceptable for modeling the LR.

- The PLD must align with a scheduled production model load as listed on the current Production Load Schedule.
- The PLD will be at least 45 days after the RIOO registration submission is accurately completed.
- The RIOO application will indicate that if the requested PLD is fewer than 90 days out, it is classified as an interim update. However, LR submissions meeting the 45-day PLD schedule do not require the RE to submit the **RE_Model_Interim_Update_Request** form.
- The DAC will be a unique identifier provided by ERCOT for each new LR, and it must be included in the RIOO submission.

Logging into RIOO

- There are two ways to access the RIOO application login screen. After a successful login, any of the RIOO application panels can be bookmarked for more direct access.

1. On the top panel of any webpage on ercot.com, hover over the **Market Participants** tab to display this list; select **RIOO Log In**

2. Scroll to the bottom of any page on ercot.com; click **Resource Integration & Ongoing Operations – Resource Services**
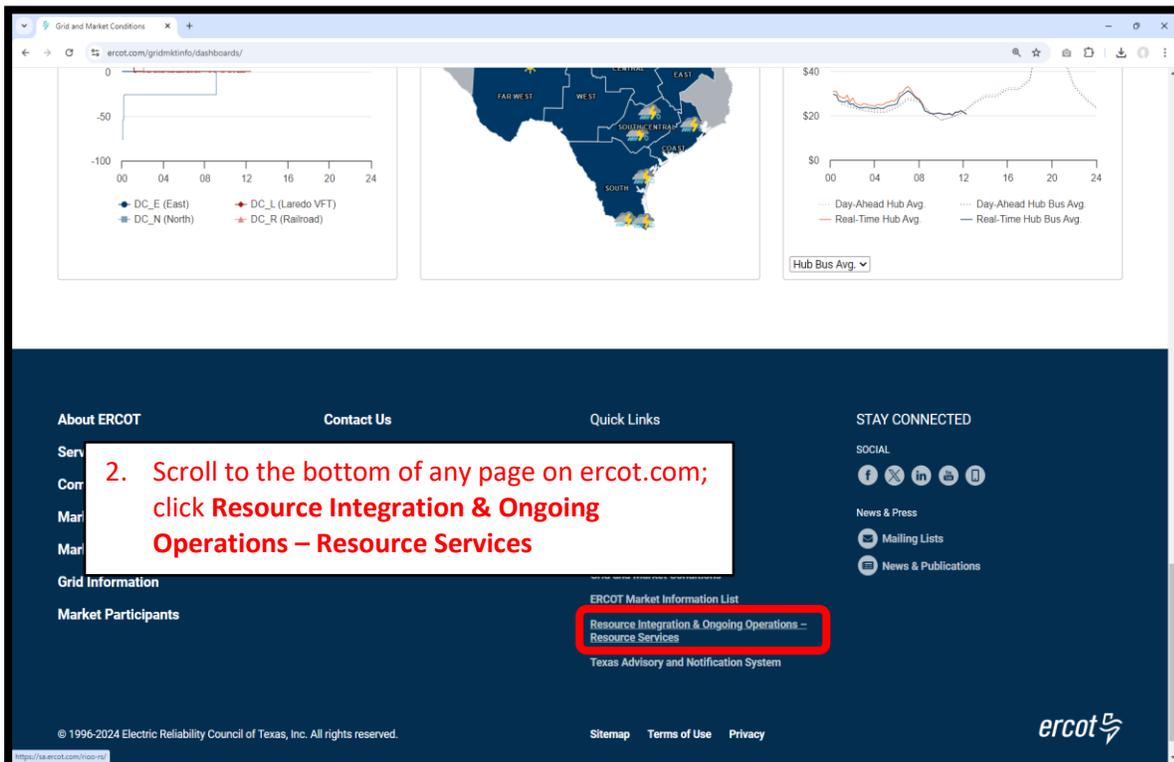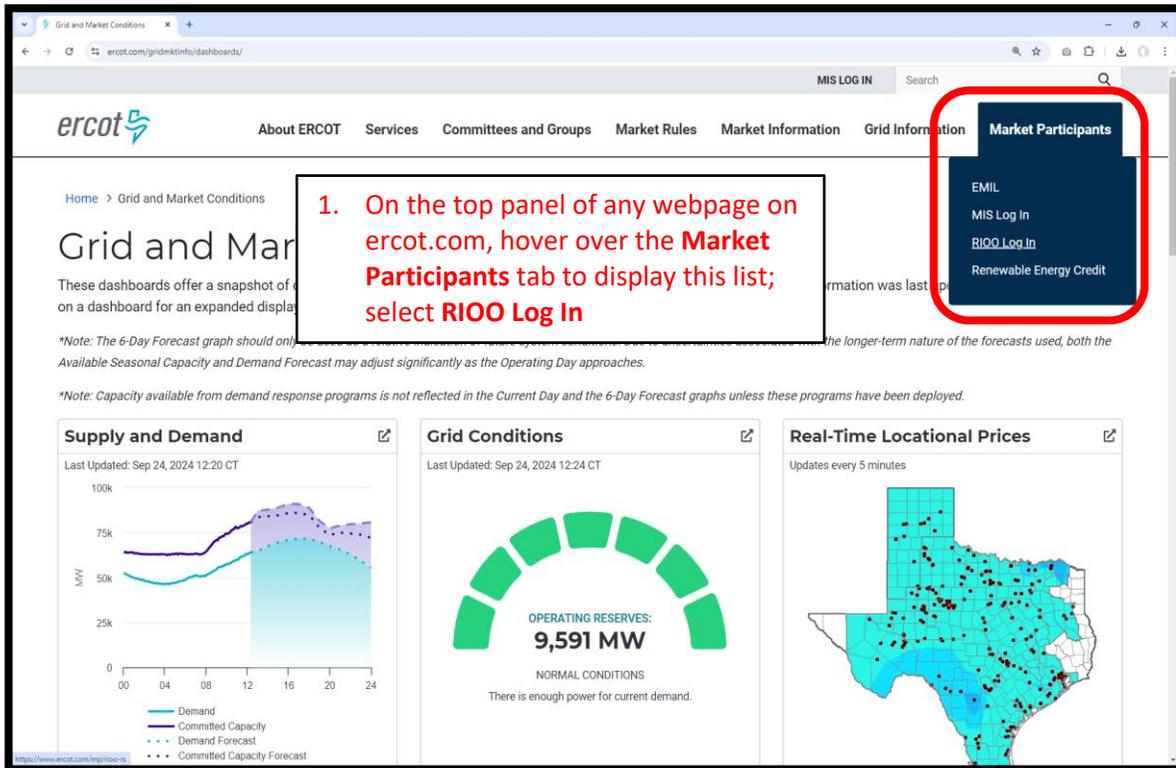
- Log into your RIOO account:
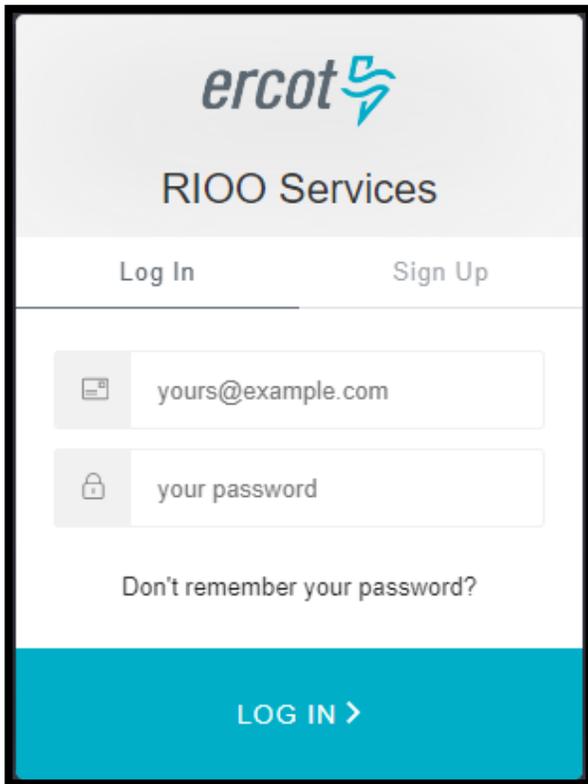
- You'll be prompted to enter a 6-digit code to complete the multi-factor authenticator (MFA). The MFA code will be sent to the app selected when setting up your account (Auth0 Guardian, Google Authenticator, SMS Text Authentication, or another authentication program that you chose to use).
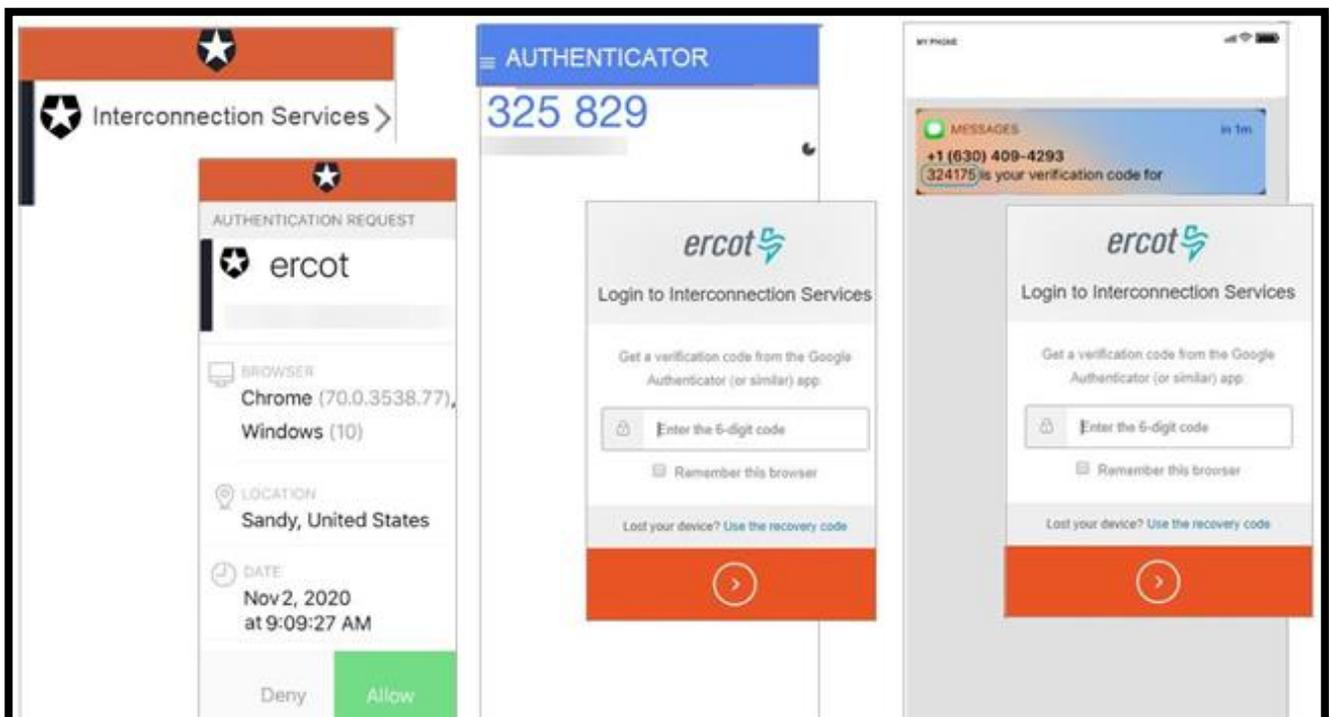
- Select **Remember this browser** to avoid having to login multiple times:
    - *Note that if this selection is not made, there may be issues saving and submitting your data*
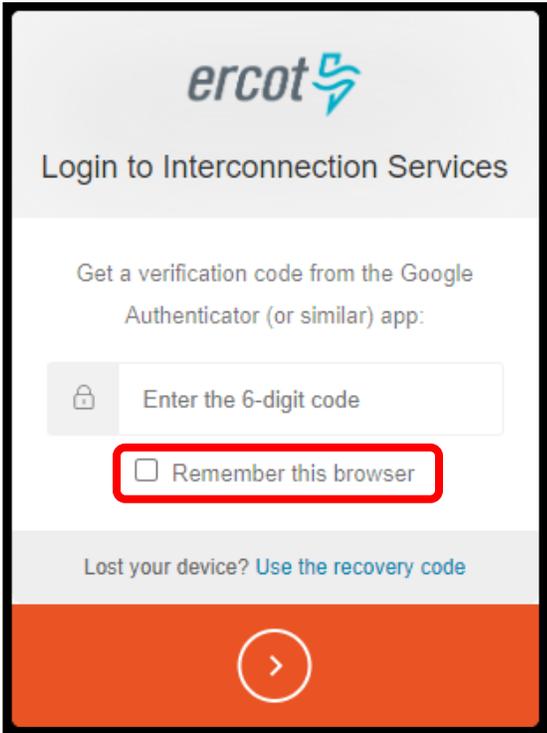
- After successfully logging in, you'll be taken to the RIOO home screen:
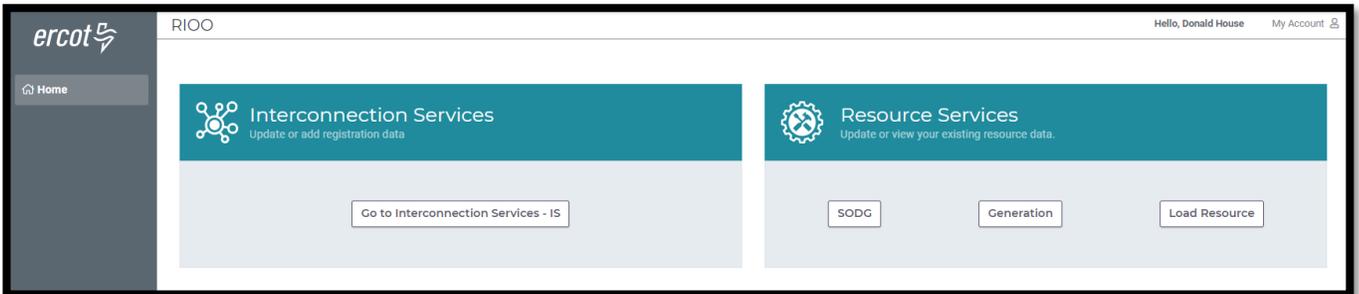
Creating request for a new LR

- On the RIOO home screen, open Interconnection Services
    - o Interconnection Services is used to create a new LR
    - o Resource Services is used to update an existing LR
        - ▪ See **RIOO User Guide – Updating an Existing Load Resource** for details

- The Interconnection Request List displays all requests that have been created by the RE along with the status of the request
- To begin, click on **Start New Request** to display the drop-down list
    - o Select **Start as RE**
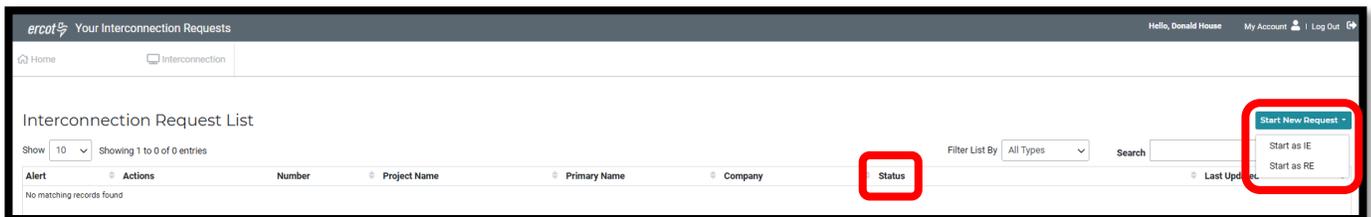
- Select the Company (RE) for this project
    - o Note that if the user represents multiple REs, they will all be displayed in this drop-down list
- Select **Distribution Connected** (less than or equal to 60 kV) or **Transmission Connected** (greater than 60 kV) under **How will your project be connected?**
- Select **Yes** under **Project has Load Resource (LR)?**
- Enter **Project Name**
    - o Note that Project Name is not the Dispatch Asset Code; this is a user-defined name
- Click **Let's Go!** to be taken to the LR list screen

- On the LR List screen, all data submission panels are listed
  - o **Start** indicates that nothing has been added to that panel
  - o **Edit** in red indicates that the panel is either missing required information or that something needs to be corrected
  - o **Edit** in green indicates that the panel has been completed but the user has the option to go back to the panel to make revisions
  - o Clicking on **Edit** or **Start** will open that panel for data entry
- The panels can be completed in any order, but the way they are arranged in the application provides an orderly flow through the process
  - o Progress can be saved, allowing the user to return to the application later to finish the submission
  - o This guide will provide details on each panel

Load Resource Info

- On the LR List screen, click on **Start** to open the Load Resource Info summary screen
- Click on **+ Add Load Resource** and then on **Not Started** to open the data entry panel
    - Up to 40 LRs can be created in the same INR by completing the panels for each LR one at a time

Common Name for Load Resource is a user-defined name; spaces are allowed
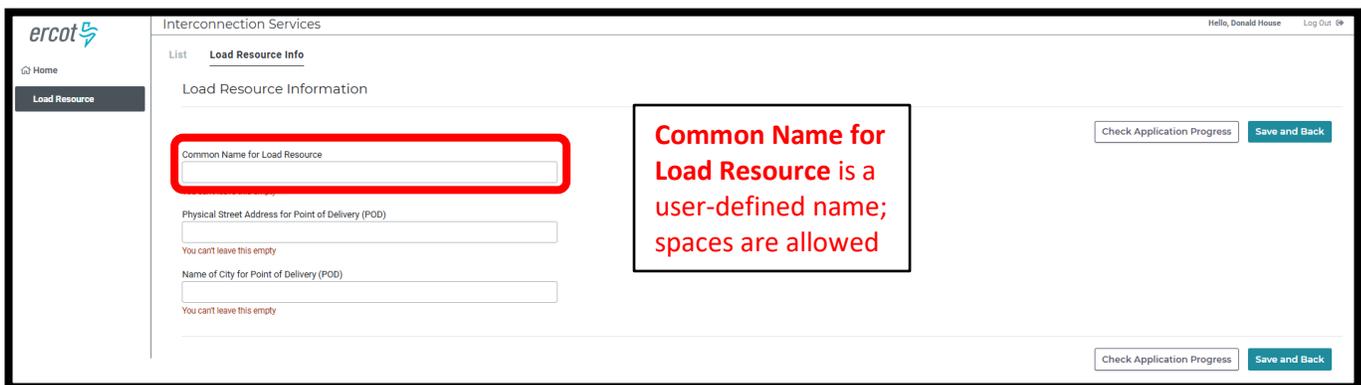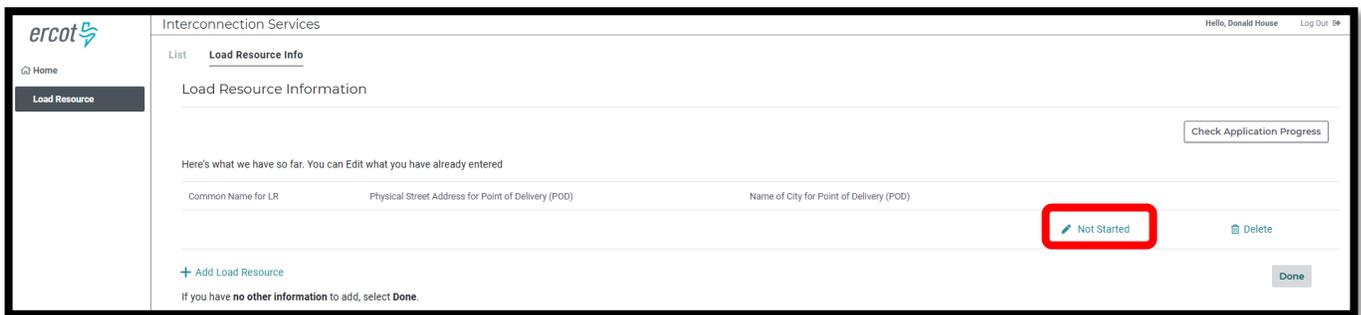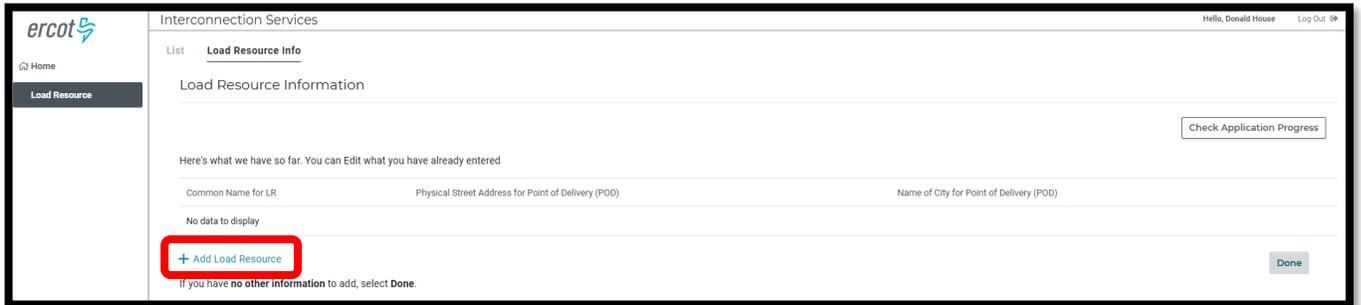
- Sample completed Load Resource Info panel

Click **Save and Back** to return to the Load Resource Info summary screen

Click **Edit** to review the panel again or click **Done** to be taken back to the List screen

A green **Edit** button means that initial data validation is passed; no further edits are required on this panel
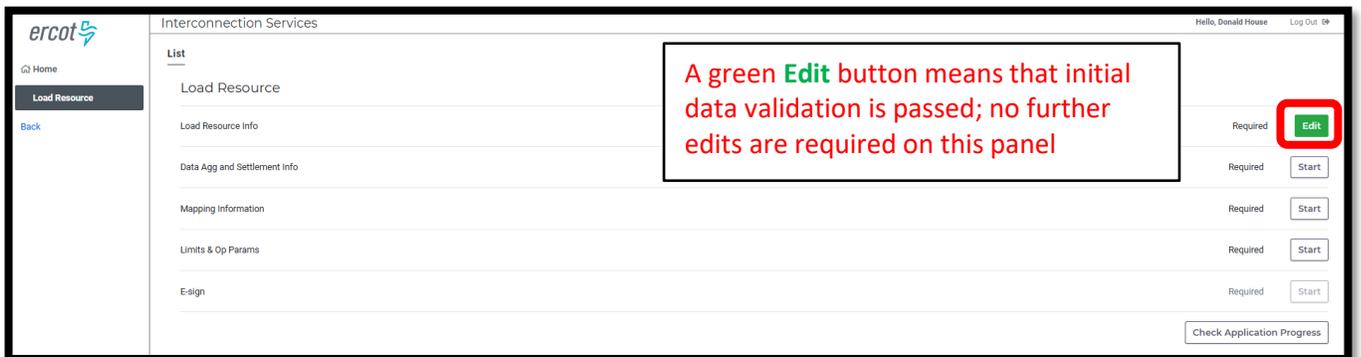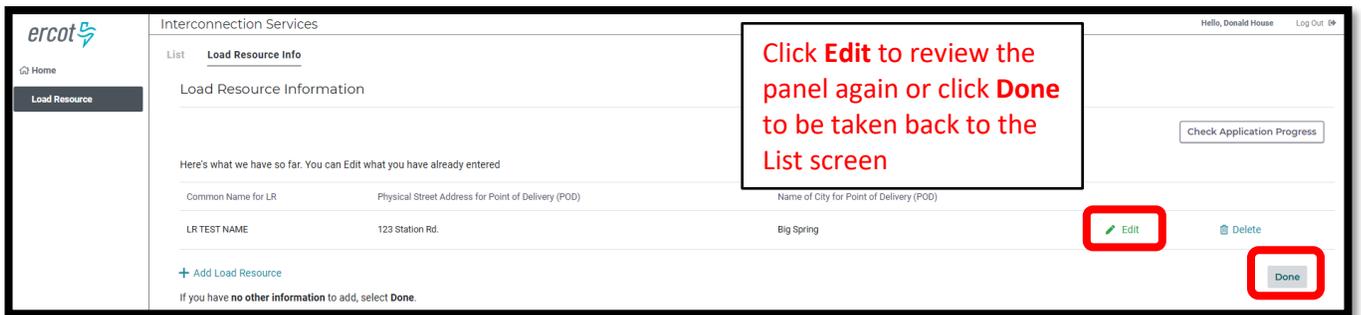
Data Agg and Settlement Info

- On the LR List screen, click on **Start** to open the Data Agg and Settlement Info summary screen
- Click on **Not Started** to open the data entry panel

If the LR is behind a NOIE meter, the ESI ID is not needed

Use the calendar to select the requested **Effective Date** (this is the PLD); align with a scheduled model load date at least 45 days from the submission date
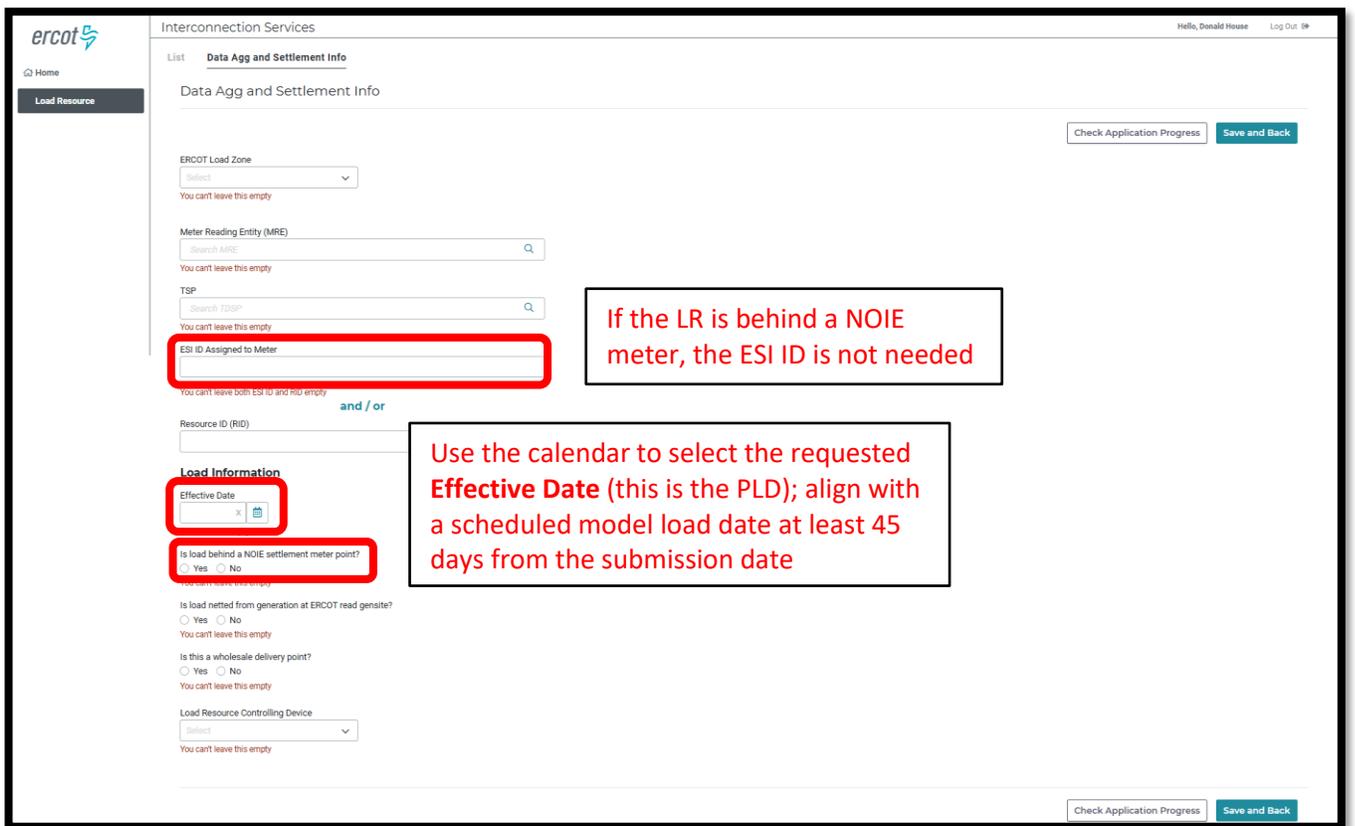
- Sample completed Data Agg and Settlement Info panel

The **MRE** and **TSP DUNS** #s are populated to match the user selections

Click **Save and Back** to return to the Data Agg and Settlement Info summary screen

Click **Edit** to review the panel again or click **Done** to be taken back to the List screen

A green **Edit** button means that initial data validation is passed; no further edits are required on this panel

The TSP entered on the Data Agg panel is populated on the Mapping Information panel. A red **Edit** button is displayed for Mapping Information indicating that further info is needed.

Mapping Information

- On the LR List screen, click on **Edit** or **Start** to open the Mapping Information summary screen
- Click on the **pencil Edit icon** to open the data entry panel

The **Transmission Service Provider** is pre-populated from info provided on the Data Agg panel

The **Transmission Service Provider** is pre-populated from info provided on the Data Agg panel

The associated **Substation Name for POD** will be populated after the **Substation Code for POD** is entered; contact the Demand Integration team if the requested substation is not found

Reminder to coordinate with the Demand Integration team to get a unique **Dispatch Asset Code** for each new LR being created in the INR

- Sample completed Mapping Information panel

Registering an LR associated with an Energy Storage Resource must be coordinated with the Resource Integration team

Click **Save and Back** to return to the Mapping Information summary screen

Click on the **pencil Edit icon** to review the panel again or click **Done** to be taken back to the List screen

A green **Edit** button means that initial data validation is passed; no further edits are required on this panel

Limits & Op Params

- On the LR List screen, click on **Start** to open the Limits & Ops Params summary screen
- Click on **Not Started** to open the data entry panel
- User will choose the **Load Resource Type** as either **CLR** (controllable load resource) or **UFR/Interruptible** (under-frequency relay/interruptible, commonly known as non-controllable)
    - This guide will show the associated data entry fields for each type

Load Resource Type = CLR

- Sample completed Limits & Op Params panel (CLR)

Click **Save and Back** to return to the Limits & Op Params summary screen

Click on the **pencil Edit icon** to review the panel again or click **Done** to be taken back to the List screen

Load Resource Type = UFR/Interruptible (non-controllable)

Total Load at POD (min = 0.1)

Interruptible Load <= **Total Load at POD** and <= **HRL**

HRL >= 0 and >= **LRL**; modeled as Max Power Consumption

LRL >= 0; modeled as Low Power Consumption (LPC)

Max Interruption Time >= **Min Interruption Time**

Max Weekly Energy <= **Interruptible Load** (MW) x 168 Hrs

- Sample completed Limits & Op Params panel (UFR/Interruptible)

Click **Save and Back** to return to the Limits & Op Params summary screen

Click on the **pencil Edit icon** to review the panel again or click **Done** to be taken back to the List screen

A green **Edit** button means that initial data validation is passed; no further edits are required on this panel

If all data passes initial validations, the **E-sign** panel will now be available to select

21

Esign

- ERCOT Protocol Section 3.6.1 requires each RE that represents a Load as a LR to complete the Attestation Regarding Critical Load Status for each LR represented by the RE; this attestation is built into RIOO and must be completed by the RE as part of the submission
- On the LR List screen, click on **Edit** to open the Esign summary screen
- Click on the **pencil Edit icon** to open the Esign data entry panel

The **DAC**, **ESI ID**, **Legal Name of RE** and **DUNS Number for RE** are pre-populated based on the LR request

The user must select an answer and provide a name and title

The **Signature Date** is pre-populated with the current day
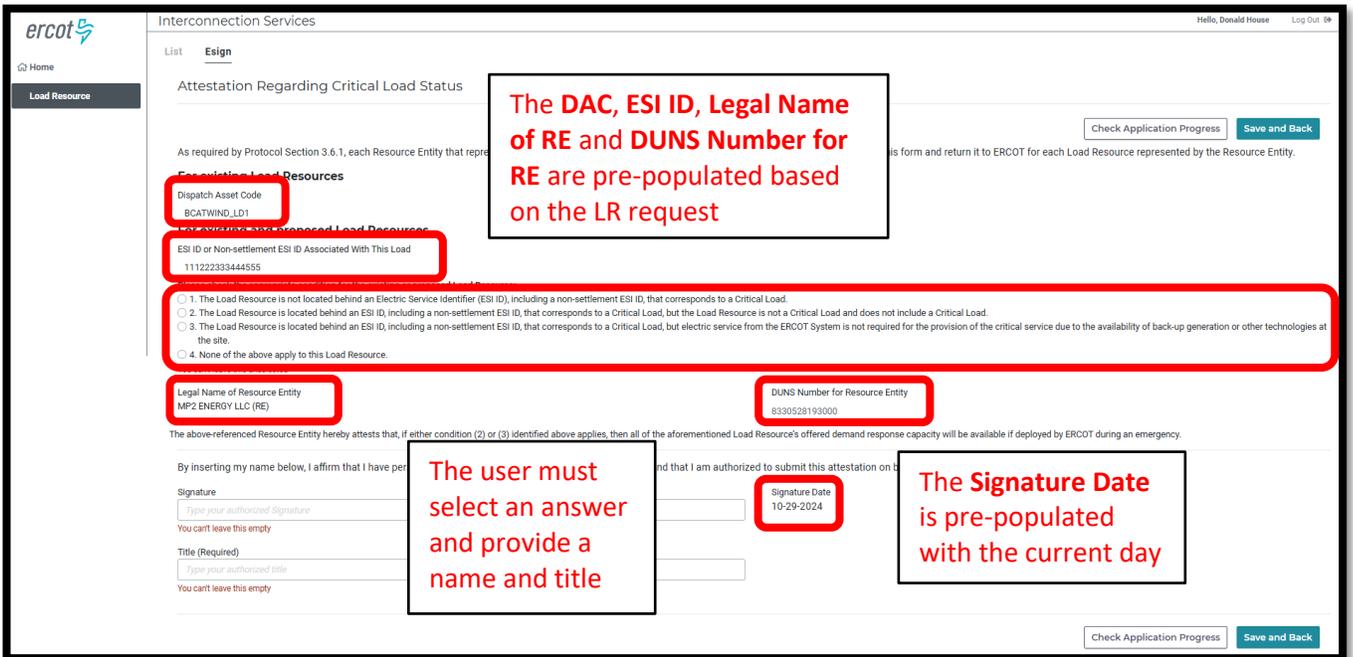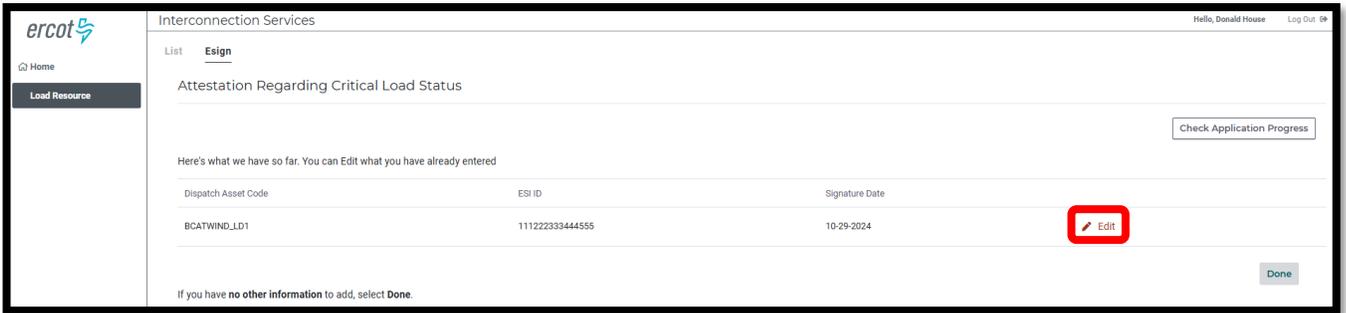
- Sample completed Esign form

Very important: condition 4 means that the site **is a critical load**; the LR can't be registered if condition 4 is selected

Click **Save and Back** to return to the Esign summary screen

Click on the **pencil Edit icon** to review the panel again or click **Done** to be taken back to the List screen

A green **Edit** button means that no further edits are required on this panel
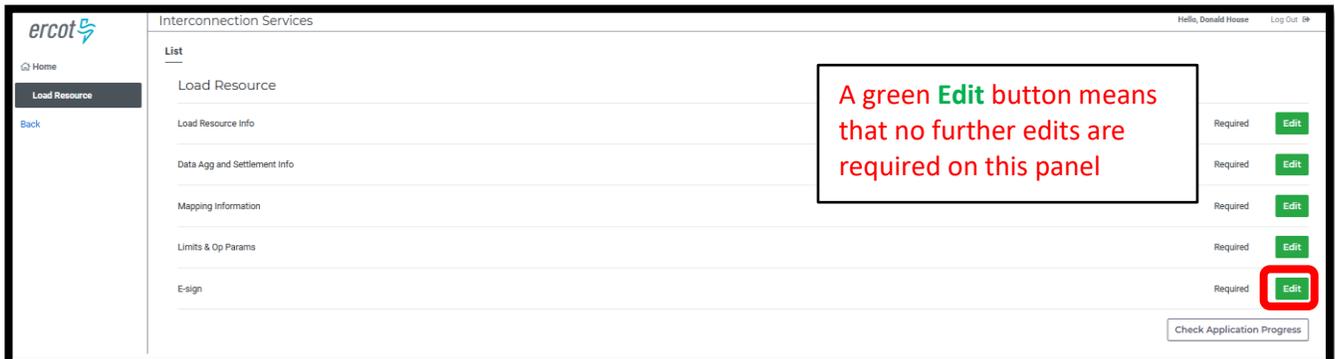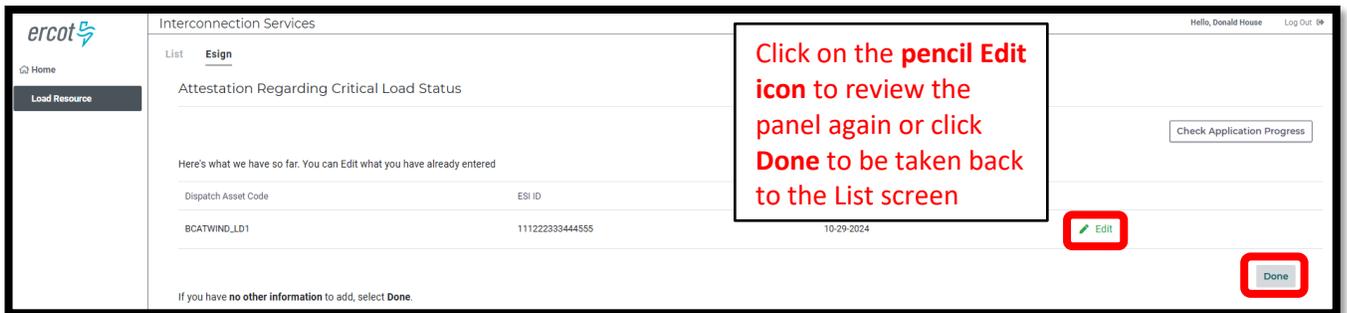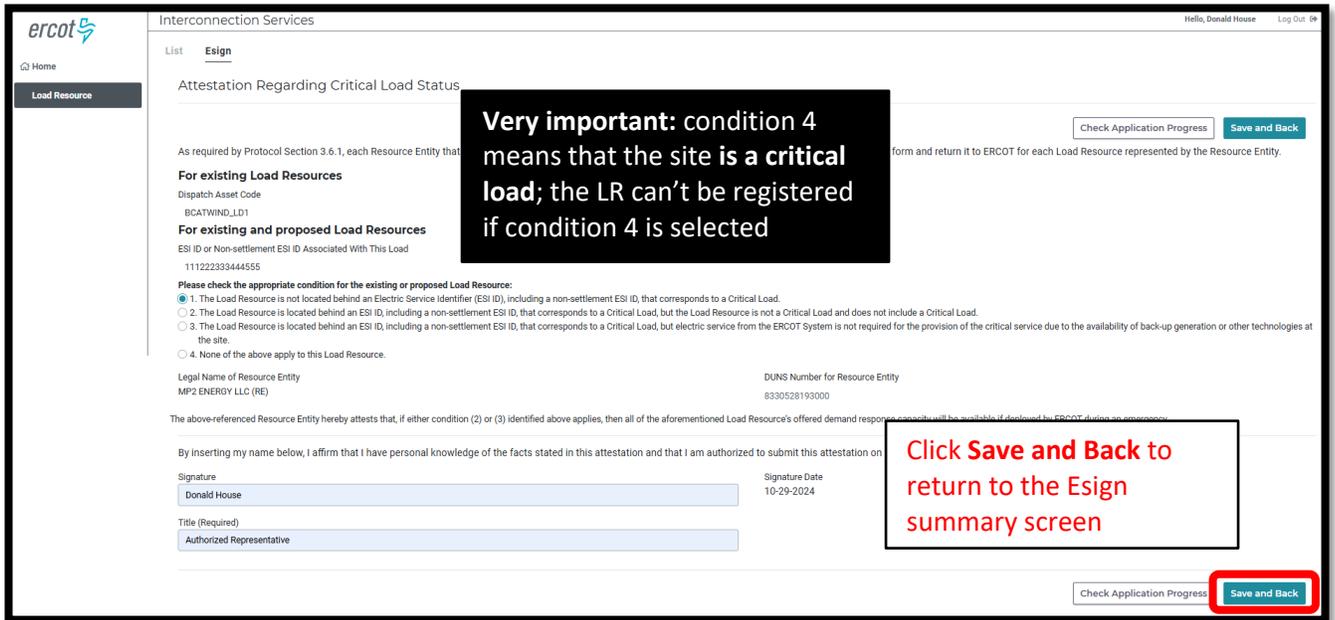
Check Application Progress

- On the LR List screen, click on **Check Application Progress** to open the Review Project Details summary screen

- On the Review Project Details screen, all data submission panels are listed
    - Click on **Revisit** to return to any of the data entry panels
    - **Make Corrections** in red indicates that the panel is either missing required information or that something needs to be corrected
        - Any needed corrections will also cause **Edit** to appear in a red box
    - **Edit** in a green box indicates that all panels have been completed but the user has the option to go back to any panel to make revisions
    - Clicking on **Download LR Data** will download an excel file with a separate tab containing the information added to each data entry panel
    - Clicking on **Submit** will save the request and move the user to the final items to be completed before the submission is sent to ERCOT **(this Submit button does not complete the process)**
        - Attachments (optional, such as one-line diagrams or PFR test results)
        - Payment
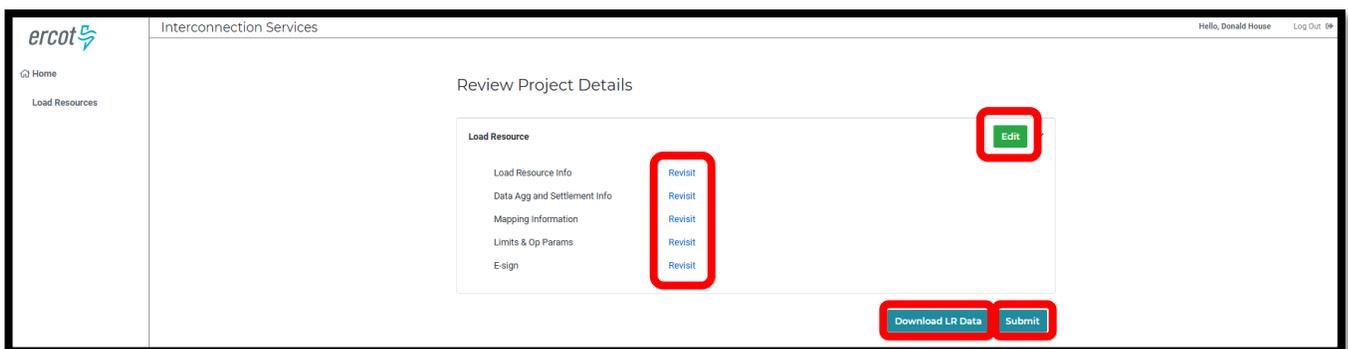
- When the data entry is complete, click **Submit** on the Review Project Details screen to move on to the payment screen
    - If you are taken back to the Interconnection Request List, click on **Finish** to view the **Finish Your Load Resource Request** screen

The INR Number is populated here

The current status is **Saved**

The INR # is displayed here

The INR can still be canceled by clicking on **Delete INR**; the user must confirm this selection to continue with the deletion (can't be canceled after ERCOT changes status to **In Review**)

Are you sure?
You won't be able to revert this!
Yes, delete this INR   No, do not Delete

LR submissions do not require any attachments

Click on **Back to Dashboard** to return to the Interconnection Request List

Payment must be made before the submission can be completed; click on **Ready to Pay**

Invoice and Payment

- Based on the current [ERCOT Fee Schedule](#), REs will be charged **$500 for each new LR** to be added to the ERCOT Network Model
- This fee must be paid in RIOO to complete the LR submission
    - If there are multiple LRs created in the same RIOO submission, the total amount of fees due will be charged in the same invoice
    - ***Refunds of fees paid will not be considered unless ERCOT directs a change in the registration process that results in additional fees being charged***

- Sample invoice

- Sample payment screen using credit card

- Sample payment screen using bank account

The LR INR number is listed as the **Invoice Number**

User selects to make payment with a **Bank Account**

The user's **Email** is pre-populated

After bank and billing info is entered, click **Pay** to complete the transaction and view the payment confirmation

- Sample payment confirmation

The LR INR number is listed on the payment confirmation

Click **Back to Interconnection List** to return to your Interconnection Request List
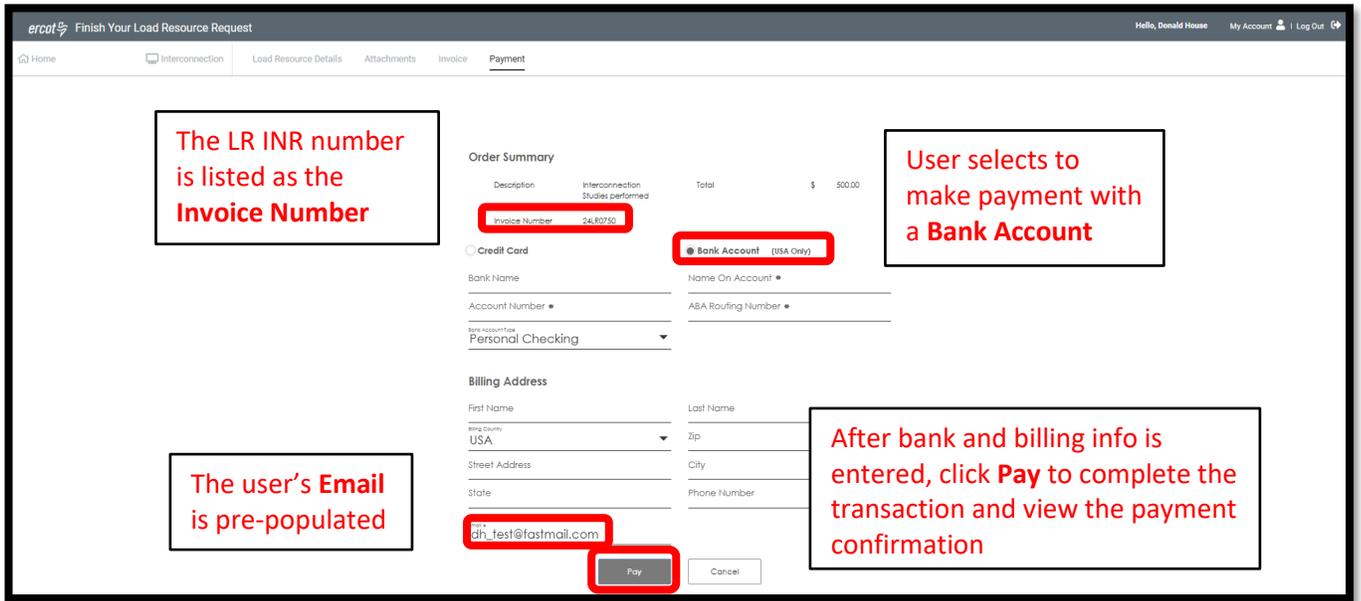
- Back on the Interconnection Request List, the user can view the newly submitted LR request
    - The status has changed to **INR Submitted to ERCOT**
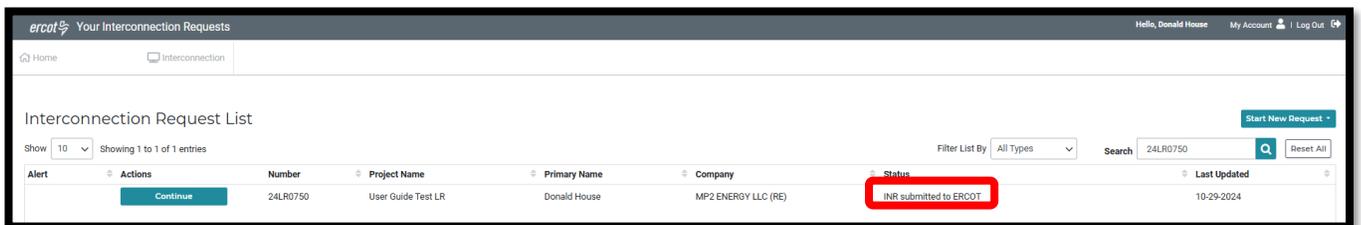
After submitting INR

INR status

The INR submitter will receive automated emails from ERCOT with status updates as the request moves through the modeling process as well as any requests for revisions to the INR. The user can also view status changes on the Interconnection Request List.

- Status updates for a submitted INR include:
  - **INR submitted to ERCOT**
    - The user can still update the submission when in this status
  - **In Review**
    - ERCOT changes to this status after completing an initial review of the submission
      - User can't make updates when the INR is in this status
      - If updates are required, ERCOT will change the status to **Incomplete** to allow the user to make changes and resubmit (ERCOT will email the user to identify the needed updates)
      - INR will stay as **In Review** until it is approved for the model load
  - **Approved for Production**
    - ERCOT changes to this status after the modeling request has been fully tested and approved for the requested model load snapshot (usually 2-3 weeks before the PLD)
  - **In Production**
    - INR will change to this status on the PLD

Confirming new LR in production Network Model

After the PLD for the newly created LR, the Qualified Scheduling Entity (QSE) representing the LR is encouraged to verify that the LR is visible in the Market Manager for the appropriate markets (DAM, Real-Time, Ancillary Services). And, the RE should verify that the LR is visible in RIOO Resource Services (RIOO – RS). ERCOT will verify that the LR is in the production Network Model, but it is the responsibility of the RE/QSE to notify ERCOT if they notice any issues for the new LR.

Updating an existing LR

To update an existing LR, the RE must use the RIOO – RS application, which is accessed using the same RIOO user account. Refer to the RIOO User Guide – Updating an Existing Load Resource on the Load Resource webpage for details.

Troubleshooting RIOO issues

User account

If a RIOO user can't access the registration entry screens in RIOO – IS or can't view the existing Resources in RIOO – RS, there are some common reasons for these issues. The list below does not include all possible causes of access problems, but these are the most common issues experienced.

- Users can only make registration changes for REs for which they have a digital certificate with the RIOORS_M_Operator role assigned
  - ERCOT can't create the digital certificates or assign the role. This must be done by the RE's User Security Administrator (USA).
- If the user represents multiple REs, they must be sure to use the correct email address when logging into RIOO. Often, accounts are set up with different email addresses for the same user. If this is the case, the user needs to know which email address to use for each RE.
- A RIOO user can't be registered as both an RE and a TDSP on the same account. If the user needs to access RIOO as both types, then separate RIOO accounts must be created for each, and a different email address must be used for each account.

Problems viewing data or completing submissions

Although the user may be able to access the RIOO application, sometimes the session becomes stale and needs to be refreshed to view data correctly or to complete a submission. This often leads to the user being stuck in a loop of being sent back to the login screen or the main dashboard when navigating through the application.

- If the user experiences such an issue, and after any application outage (planned or unplanned), the user should logout of the application, clear their browser history cache, and then log back into the application.
    o Select "Remember this browser" when logging in
- If the user starts an INR but doesn't attempt to submit it until sometime later (multiple days or more into the future), the user may not be able to submit the INR due to changes in the application from an update release or other registration data and/or network model changes that happened after the INR was started.
    o Data edits may not be validated, and the data panels won't turn "green" even if all the required fields have been populated
    o The user may not be able to access the E-sign panel or to complete the payment processing
    o Any of these issues prevent the "submit" button from being activated
    o The logout/login process above is recommended to resolve any of these issues
    o If this doesn't work, the submission may have to be canceled/withdrawn and a new submission will be needed
- If the payment process has been completed, but the user can't submit the INR, there may be an issue with the third-party payment vendor. Sometimes, the payment confirmation isn't sent correctly from the vendor to ERCOT.
    o If this occurs, the RIOO team can verify if the payment was received by the vendor. If payment was received, then the RIOO team will manually update the payment status in the database. This will allow the user to submit the INR.

Reporting issues

Any access problems, functionality issues, or suggestions for improvements to the application can be sent via email to RIOO-Help@ercot.com and ERCOTLRandSODG@ercot.com. Significant updates to the application may be communicated through market notices.