

# ERCOT Retail 101

Class begins at 8:30



2024\_05 Retail 101

# Greetings and Introductions

- WebEx Training Tips
  - Windows
  - Buttons
- Attendance
- Questions / Chat



**Please enable video  
& audio capabilities**

## PROTOCOL DISCLAIMER

This presentation provides a general overview of the Texas Nodal Market and is not intended to be a substitute for the ERCOT Protocols, as amended from time to time. If any conflict exists between this presentation and the ERCOT Protocols, the ERCOT Protocols shall control in all respects.

For more information, please visit:

<http://www.ercot.com/mktrules/nprotocols/>

## Topics in this course include:

1

Retail Market Responsibilities

2

Market Rules

3

Retail Operations

4

Metering

5

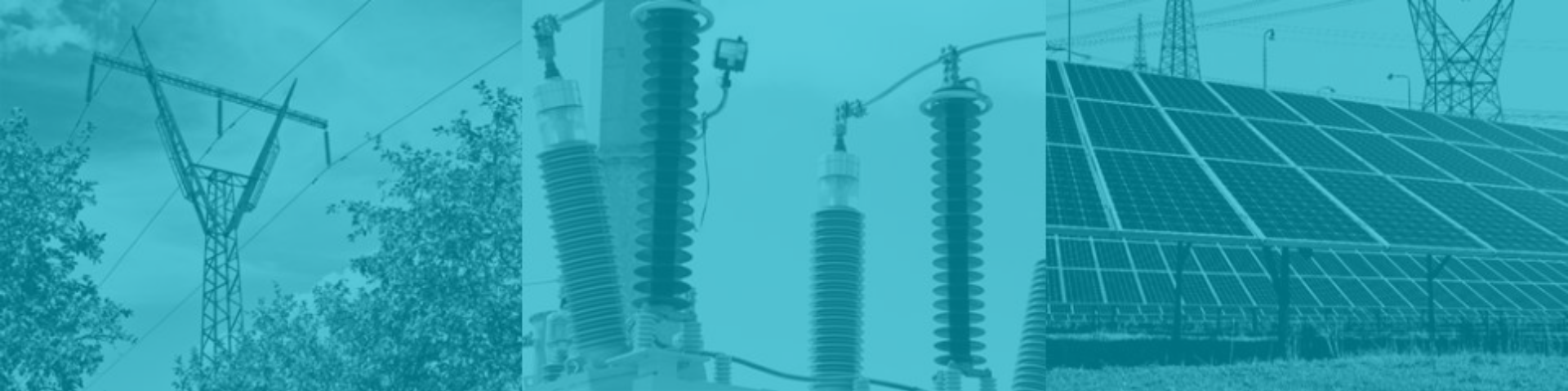
Wholesale Settlement of Retail Load

6

Data Transparency and Availability

7

Issue Resolution

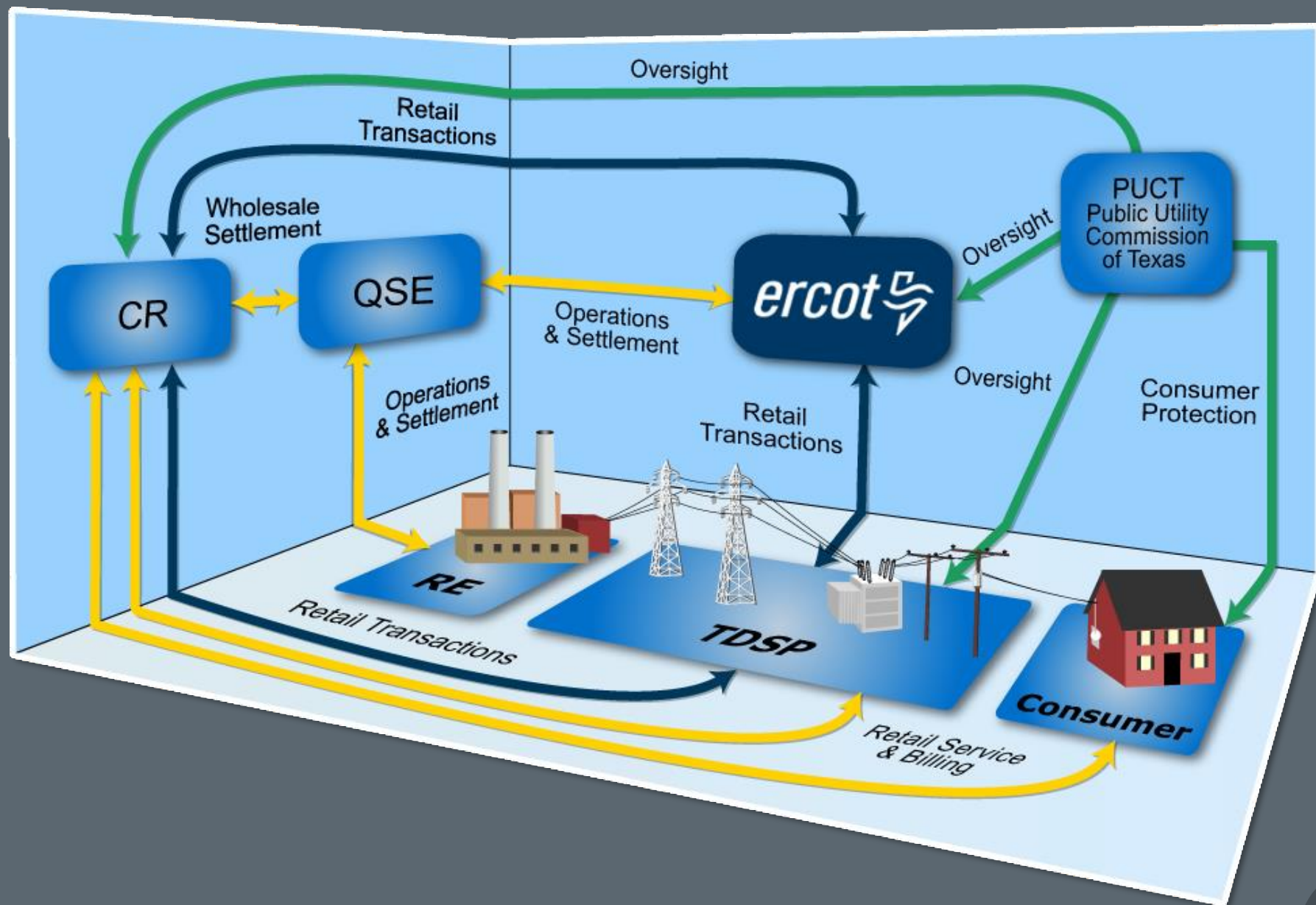


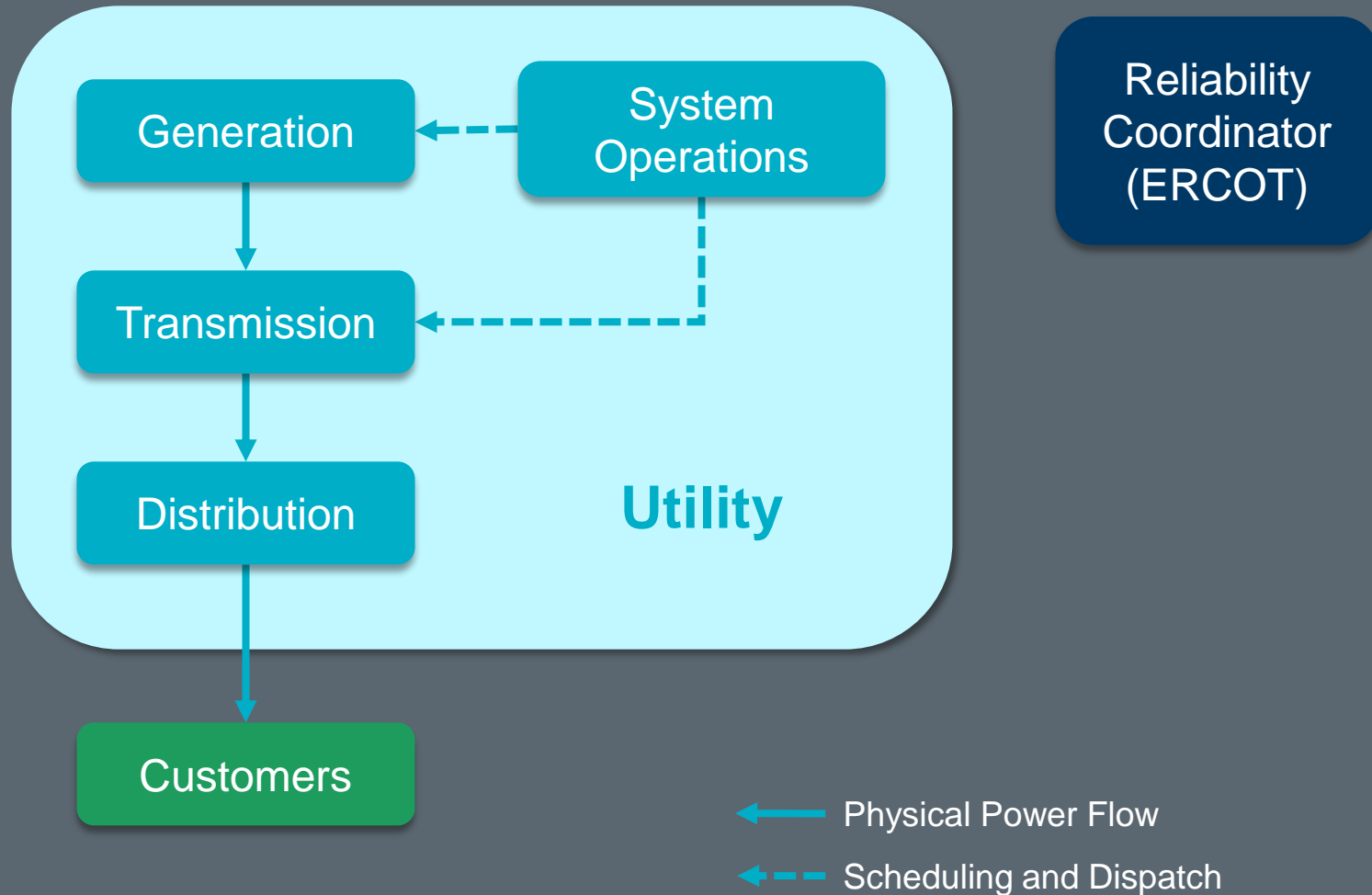
Module 1

# Retail Market Responsibilities

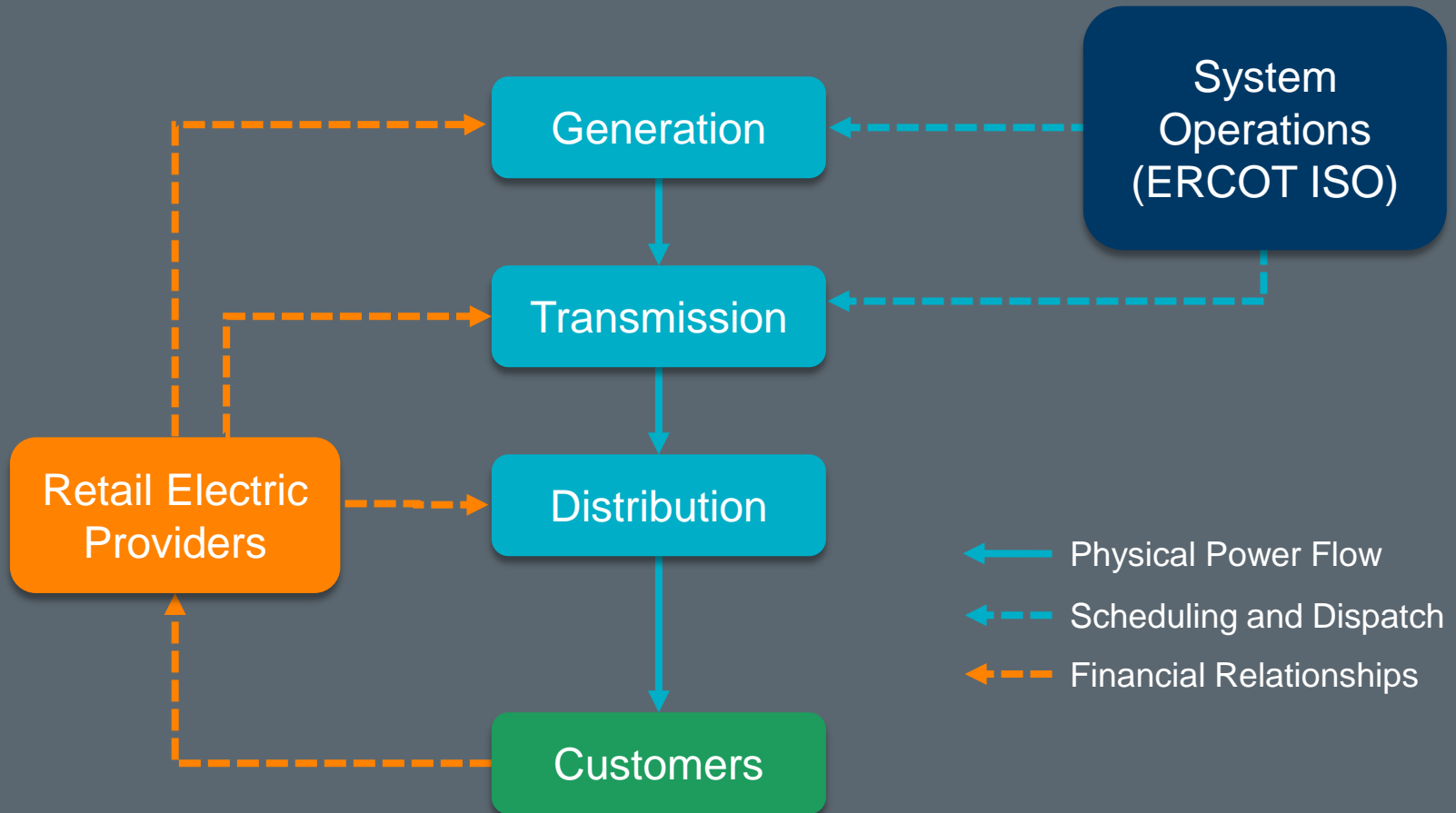














Public Utility  
Commission of Texas



Electric Reliability  
Council of Texas



Qualified  
Scheduling Entity



Load Serving  
Entity



Transmission  
Distribution  
Provider



An Electrical Cooperative or Municipally Owned Utility who has chosen **NOT** to opt in to retail competition.

## Opt-In

An Electrical Cooperative or Municipally Owned Utility who has chosen to opt in to retail competition.

## REP

Entities that sell electric energy to retail Customers in the areas of Texas where the sale of electricity is open to retail competition.



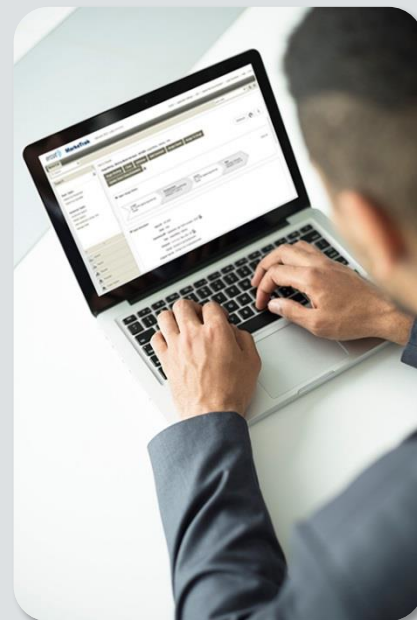
## Retail Electric Provider or Opt-In Entity



**Service Retail  
Customers**



**Negotiate  
Competitive  
Contracts**



**Submit  
Electronic  
Transactions**

## Meet Financial Responsibilities



**Buy electricity at wholesale**



**Pay TDSPs for delivery costs**



**Pay and/or dispute invoices**



**Invoice retail Customers for their usage**

## Investigate Customer Switching Issues

CRs work with TDSPs and other CRs to resolve inadvertent gains and losses.





## A Competitive Retailer Must:



**Register with the PUCT**



**Register with ERCOT**



**Complete Flight Testing through FlighTrak**



**Be represented by a Qualified Scheduled Entity**

## Every CR Must Be Represented By a QSE

Choose one



OR

Become one





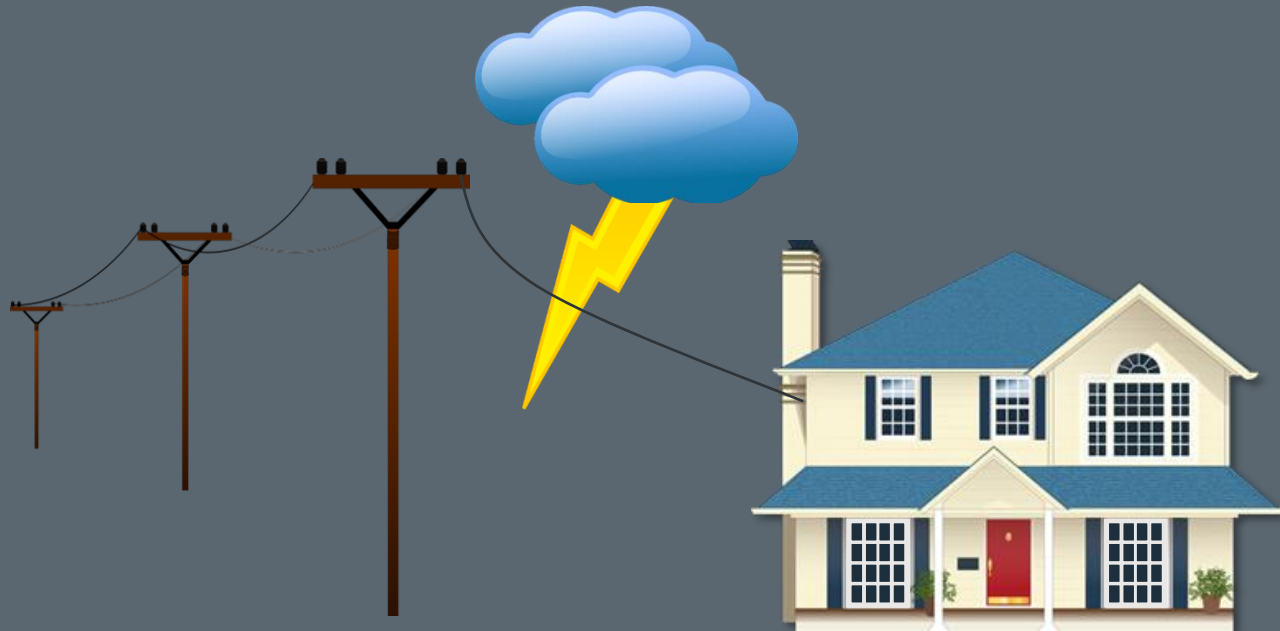
**Physical System  
Operations**



**Retail System  
Operations**

## Physical System Operations

- Maintain reliable transmission and distribution system
- Connect Customer Premise to ERCOT grid
- Resolve power outages



## Retail System Operations

- Create, Manage and Maintain ESI IDs
- Facilitate Service Order Requests from CRs
- Provide usage data for Settlement billing
- Investigate customer issues



## The Anatomy of an ESI ID

**10 xxxxxx zzz .. zz**

Where	
<b>10</b>	Electric industry prefix
<b>xxxxxx</b>	Five-digit DOE code for TDSP
<b>zzz .. zz</b>	Up to 29 alphanumeric characters assigned by TDSP

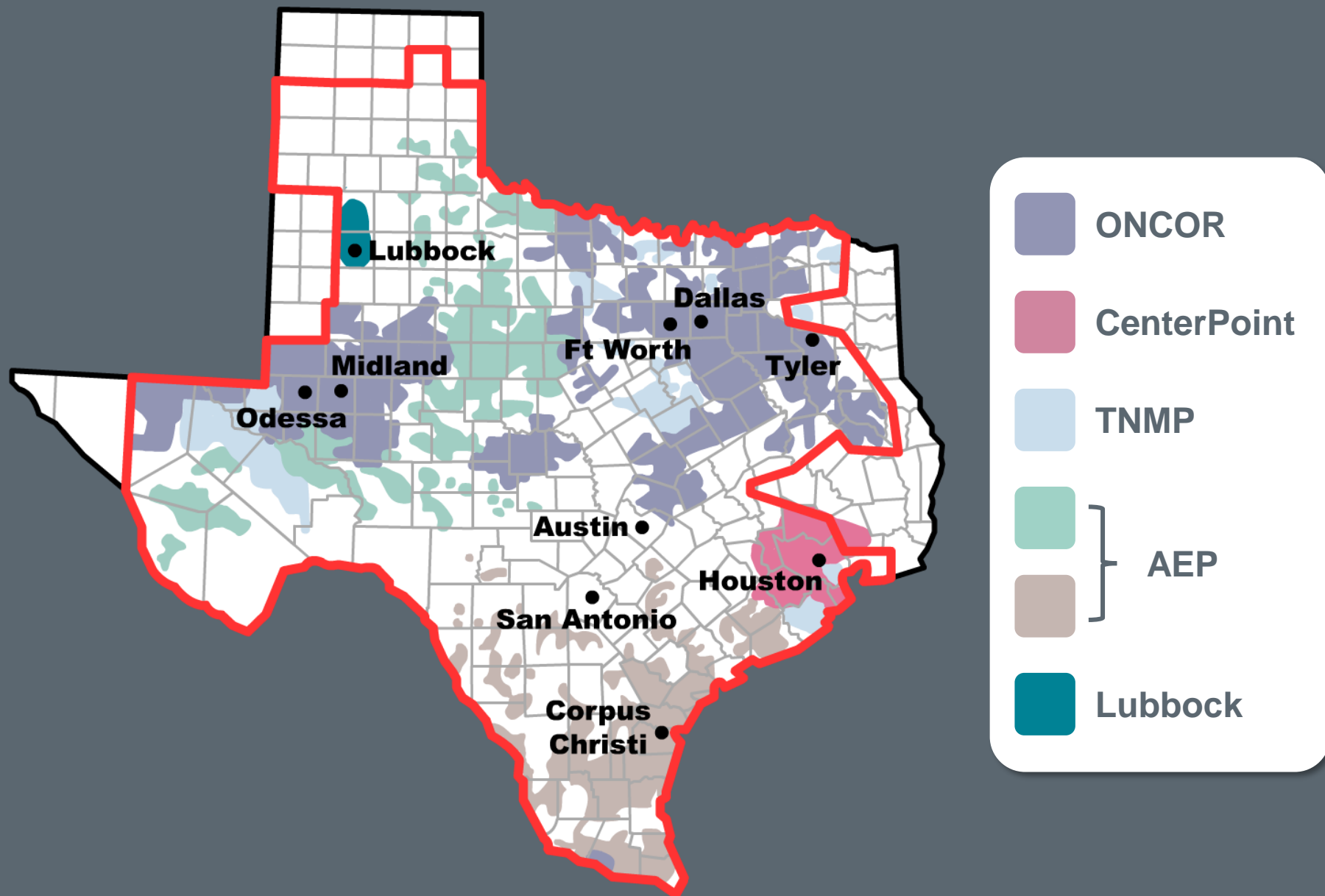


## The Anatomy of an ESI ID

10 **XXXXXX** ZZZ .. ZZ

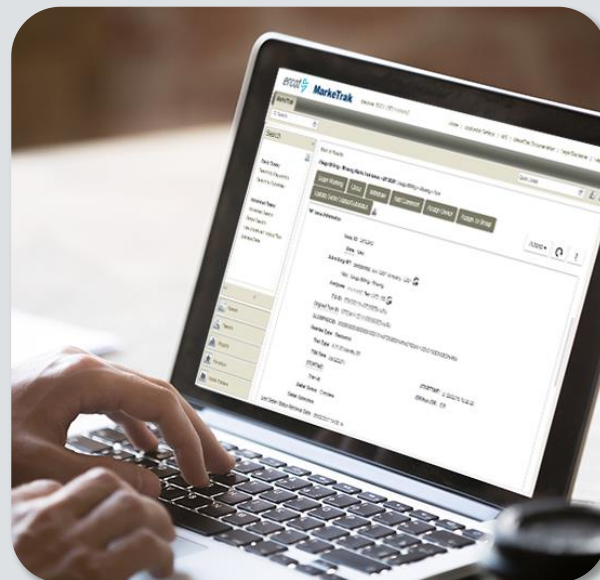
DOE Number	TDSP Name
20404	AEP TX North
03278	AEP TX Central
08901	CenterPoint
13830	Nueces Electric Coop
44372	Oncor Electric Delivery
40051	Texas New Mexico Power (TNMP)
17699	Oncor/SESCO
11292	Lubbock Power & Light

# Where are the competitive meters





**Physical System  
Operations**



**Retail System  
Operations**

## ERCOT Duties



**Process retail transactions**



**Collect and distribute meter data**



**Establish profiles for all ESI IDs**



**Act as registration agent**



**Provide account management**



About ERCOT

Services

Committees and Groups

Market Rules

Market Information

Grid Information

Market Participants

Home > Market Participants

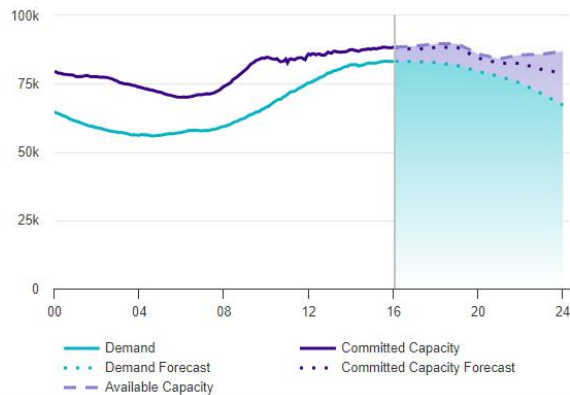
# Market Participants

Cyberstrike™ LIGHTS OUT registration now open

[View Details](#)

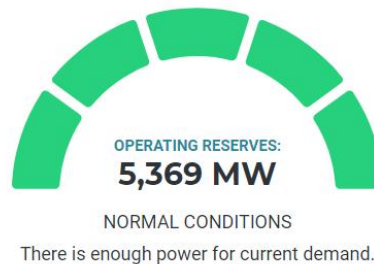
## Supply and Demand

Last Updated: Aug 7, 2023 16:05 CT



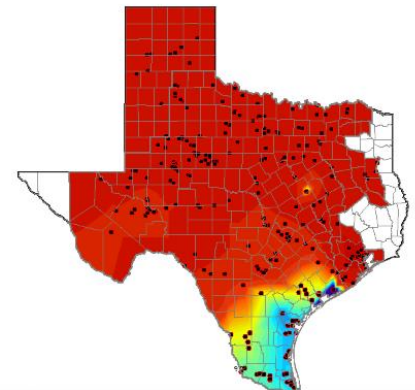
## Grid Conditions

Last Updated: Aug 7, 2023 16:06 CT



## Real-Time Locational Prices

Updates every 5 minutes





## Matching

**QSE**

**LSE**

**CR**

**TDSP**

**RE**

**PUCT**

Responsible for making sure customers are protected and everyone follows the rules

The participant responsible for settling with ERCOT

Serves customers in competitive areas

Manages poles, wires, meter reads and ESI IDs

Owns and operates the generators

General term for entity providing power to end-use customers





## Module 2

# Market Rules





Public Utility Regulatory Act  
(PURA)



PUCT Substantive Rules



ERCOT Protocols  
and Market Guides



## Public Utility Regulatory Act (PURA)

- Defines the Public Utility Commission of Texas (PUCT)
- Amended by Senate Bill 7 in 1999
- PUCT and ERCOT responsible for determining specifics
- Continues to evolve



Public Utility Regulatory Act  
(PURA)



PUCT Substantive Rules



## PUCT Substantive Rules

- Implement PURA requirements:
  - Customer protection rules
  - Standard terms and conditions (Tariffs) for utilities
- Electric Substantive Rules are contained in [Chapter 25](#)
- Refer to [PUCT Website](#) for complete rules



[Home](#)
[Consumer](#)
[Industry](#)
[Rules & Laws](#)
[Filings](#)
[Agency](#)
[Español](#)

[Rules and Laws](#) › Chapter 25 - Electric



## Electric Substantive Rules

### Chapter 25 Rules

[↓ COMPLETE SET OF CHAPTER 25 RULES](#)

#### Proposed New:

[§25.510](#)

[§25.510 PLAIN LANGUAGE DESCRIPTION](#)

[§25.511](#)

[§25.511 PLAIN LANGUAGE DESCRIPTION](#)

#### Proposed Revisions:

[§25.195](#)

[§25.195 PLAIN LANGUAGE DESCRIPTION](#)

Rule	Description/Explanatory Information	Effective
<a href="#">25 TOC</a>	<a href="#">Chapter 25 Table of Contents</a>	02/08/24
<b>Subchapter A General Provisions</b>		
<a href="#">§25.1</a>	<a href="#">Purpose and Scope of Rules.</a>	03/12/03
<a href="#">§25.2</a>	Cross-Reference Transition Provision.	05/07/98
<a href="#">§25.3</a>	<a href="#">Severability Clause.</a>	03/12/03



## Customer Protection Rules (Part 1)

<a href="#"><u>§ 25.471</u></a>	General Provisions of Customer Protection Rules	<a href="#"><u>§ 25.478</u></a>	Credit Requirements and Deposits
<a href="#"><u>§ 25.472</u></a>	Privacy of Customer Information	<a href="#"><u>§ 25.479</u></a>	Issuance and Format of Bills
<a href="#"><u>§ 25.473</u></a>	Non-English Language Requirements	<a href="#"><u>§ 25.480</u></a>	Bill Payment and Adjustments
<a href="#"><u>§ 25.474</u></a>	Selection of REP	<a href="#"><u>§ 25.481</u></a>	Unauthorized Charges
<a href="#"><u>§ 25.475</u></a>	General REP Requirements and Information Disclosures to Customers	<a href="#"><u>§ 25.482</u></a>	Prompt Payment Act
<a href="#"><u>§ 25.476</u></a>	Renewable and Green Energy Verification	<a href="#"><u>§ 25.483</u></a>	Disconnection of Service
<a href="#"><u>§ 25.477</u></a>	Refusal of Electric Service	<a href="#"><u>§ 25.484</u></a>	Electric No-Call List

## Customer Protection Rules (Part 2)

<a href="#"><u>§ 25.485</u></a>	Customer Access and Complaint Handling	<a href="#"><u>§ 25.492</u></a>	Non-Compliance with Rules or Orders
<a href="#"><u>§ 25.487</u></a>	Obligations Related to Move-In Transactions	<a href="#"><u>§ 25.493</u></a>	Acquisition and Transfer of Customers from one REP to Another
<a href="#"><u>§ 25.488</u></a>	Procedures for a Premise with No Service Agreement	<a href="#"><u>§ 25.495</u></a>	Unauthorized Change of REP
<a href="#"><u>§ 25.489</u></a>	Treatment of Premises with No Retail Electric Provider of Record	<a href="#"><u>§ 25.497</u></a>	Critical Load, Critical Care and Chronic Condition Customers
<a href="#"><u>§ 25.490</u></a>	Moratorium on Disconnect on Move-Out	<a href="#"><u>§ 25.498</u></a>	Prepaid Service
<a href="#"><u>§ 25.491</u></a>	Record Retention and Reporting Requirements	<a href="#"><u>§ 25.500</u></a>	Privacy of Advanced Metering System Information



Public Utility Regulatory Act  
(PURA)



PUCT Substantive Rules



ERCOT Protocols  
and Market Guides



## ERCOT is responsible for ...

### Protocols

Outline the procedures and processes used by ERCOT and Market Participants.



## Protocols - Nodal

- [Current Protocols - Nodal](#)
- [Protocol Library - Nodal](#)
- [Nodal Protocol Revision Requests](#)
- [NPRR Submission Process](#)
- [Protocol Interpretation Request Submission Process](#)

## Archives - Nodal

### PUCT Directives

- [Southern Cross Transmission](#)
- [Real-Time Co-Optimization](#)

## Market Guides

- [Commercial Operations Market Guide](#)
- [Data Transport Guides](#)
- [Load Profiling Guide](#)
- [Nodal Operating Guide](#)
- [Operating Procedures](#)
- [Planning Guide](#)
- [Resource Registration](#)
- [Glossary](#)
- [Retail Market Guide](#)
- [Settlement Metering Operating Guide](#)
- [Texas Standard Electronic Transaction Guides](#)
- [Verifiable Cost Manual](#)
- [Inactive Market Guides](#)

## Pilot Projects

- [30-Minute Emergency Response Service - Completed](#)
- [Fast Responding Regulation Service - Completed](#)
- [Weather-Sensitive Emergency Response Service - Completed](#)

## System Changes

- [System Change Requests](#)

## Compliance in ERCOT

## Business Practice Manual

## Other Binding Documents

- [Other Binding Documents List](#)
- [Other Binding Documents](#)
- [Revision Requests](#)

## Key Priorities

- [Battery Energy Storage](#)

## Related Content

### On this site

- [Protocol Revision Requests](#)
- [Protocol Revision Subcommittee](#)

[Home](#) > [Market Rules](#) > Protocols - Nodal

# Protocols - Nodal

The Protocols outline the procedures and processes used by ERCOT to develop, implement, and maintain the Nodal Protocols as well as requests for changes and clarification of the Protocols.

## IN THIS SECTION

### [Current Protocols - Nodal](#)

The Nodal Protocols become effective upon Texas Nodal market implementation.

### [Protocol Library - Nodal](#)

Find the monthly versions of the complete Nodal Protocol set, including the current set.

### [Nodal Protocol Revision Requests](#)

Locate current and past Nodal Protocol revision requests, including those that are currently under review.

### [NPRR Submission Process](#)

Find the directions and forms to submit a Nodal Protocol revision request.

### [Protocol Interpretation Request Submission Process](#)

Read about the process for submitting a PIR, and find the form.

## About ERCOT

## Services

## Committees & Groups

## Market Rules

## Contact Us

## Glossary

## Careers

## Locations

## Quick Links

- [Ethics Point](#)
- [Operations Messages](#)
- [Project Status](#)
- [Service Level Agreements](#)

## STAY CONNECTED

### SOCIAL



### NEWS & PRESS

## List of Protocols

Sections	Description
1-2	Construction and Definitions
3-8	System Operations and Wholesale Markets
9-11	Settlement & Billing; Metering; Data Aggregation
12	Market Information System (MIS)
13	Transmission & Distribution Losses
14	Renewable Energy Credit Trading Program
15	Customer Registration
16	Market Participant Registration & Qualification
18, 19	Load Profiling & TX SET
20	Alternative Dispute Resolution Process
21	Revision Request Process





## ERCOT is responsible for ...

### Protocols

Outline the procedures and processes used by ERCOT and Market Participants.



### Market Guides

- Based upon the ERCOT Protocols
- Detailed reference documents



[Home](#) > [Market Rules](#) > Protocols - Nodal

## Protocols - Nodal

The Protocols outline the procedures and processes used by ERCOT to manage the Nodal market. The Protocols also provide information on how to request changes to the Protocols as well as requests for changes and clarification of the Protocols.

### IN THIS SECTION

#### [Current Protocols - Nodal](#)

The Nodal Protocols become effective upon Texas Nodal market implementation.

#### [Protocol Library - Nodal](#)

Find the monthly versions of the complete Nodal Protocol set, including the current version.

#### [Nodal Protocol Revision Requests](#)

Locate current and past Nodal Protocol revision requests, including those that are currently under review.

#### [NPRR Submission Process](#)

Find the directions and forms to submit a Nodal Protocol revision request.

#### [Protocol Interpretation Request Submission Process](#)

Read about the process for submitting a PIR, and find the form.

#### Protocols - Nodal

- [Current Protocols - Nodal](#)
- [Protocol Library - Nodal](#)
- [Nodal Protocol Revision Requests](#)
- [NPRR Submission Process](#)
- [Protocol Interpretation Request Submission Process](#)

#### Archives - Zonal

#### PUCT Directives

- [Southern Cross Transmission](#)
- [Real-Time Co-Optimization](#)

#### Market Guides

- [Commercial Operations Market Guide](#)
- [Data Transport Guides](#)
- [Load Profiling Guide](#)
- [Nodal Operating Guide](#)
- [Operating Procedures](#)
- [Planning Guide](#)
- [Resource Registration Glossary](#)
- [Retail Market Guide](#)
- [Settlement Metering Operating Guide](#)
- [Texas Standard Electronic Transaction Guides](#)
- [Verifiable Cost Manual](#)
- [Inactive Market Guides](#)

#### Pilot Projects

- [30-Minute Emergency Response Service - Completed](#)
- [Fast Responding Regulation Service - Completed](#)
- [Weather Sensitive Emergency Response Service - Completed](#)

#### System Changes

- [System Change Requests](#)

#### Compliance in ERCOT

#### Business Practice Manual

#### Other Binding Documents

- [Other Binding Documents List](#)
- [Other Binding Documents Revision Requests](#)

#### Key Priorities

- [Battery Energy Storage](#)

#### Related Content

##### On this site

- [Protocol Revision Requests](#)
- [Protocol Revision Subcommittee](#)

#### About ERCOT

#### Services

#### Committees & Groups

#### Market Rules

#### Contact Us

#### Glossary

#### Careers

#### Locations

#### Quick Links

- [Ethics Point](#)
- [Operations Messages](#)
- [Project Status](#)
- [Service Level Agreements](#)

#### STAY CONNECTED

##### SOCIAL



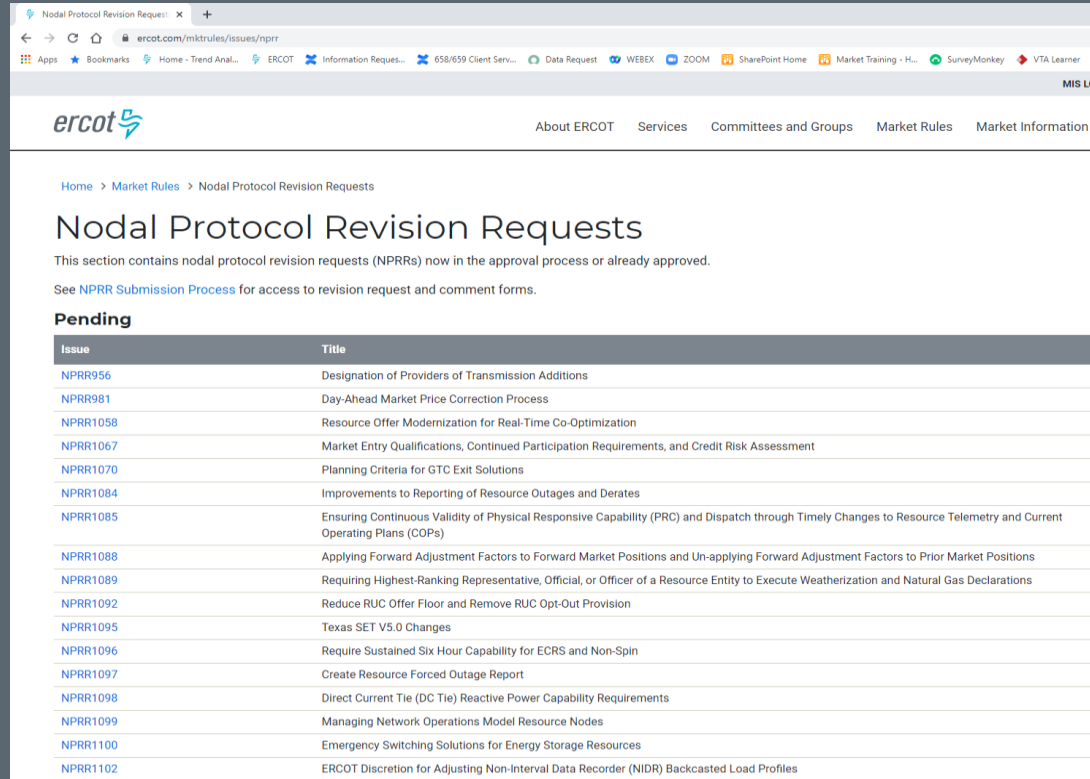
##### NEWS & PRESS

## Retail Market Guide Overview

Sections	Description
1-2	Purpose; Definitions; Acronyms
3	Retail Market Guide Revision Process
4-5	PUCT & ERCOT
6	RMS Working Groups
<b>7</b>	<b>Market Processes</b>
8	Municipally Owned Utilities & Co-ops
9	Appendices

## Protocol And Market Guide Update Process

- Created and edited by Market Participants
- Changed from time-to-time by Revision requests
- Changes approved by ERCOT Board of Directors or appropriate committee



The screenshot shows the ERCOT website's "Nodal Protocol Revision Requests" page. The page header includes the ERCOT logo and navigation links. The main heading is "Nodal Protocol Revision Requests", followed by a brief description and a link to the "NPRR Submission Process". Below this is a table titled "Pending" with two columns: "Issue" and "Title". The table lists 17 revision requests, each with a unique ID and a description of the proposed change.

Issue	Title
<a href="#">NPRR956</a>	Designation of Providers of Transmission Additions
<a href="#">NPRR981</a>	Day-Ahead Market Price Correction Process
<a href="#">NPRR1058</a>	Resource Offer Modernization for Real-Time Co-Optimization
<a href="#">NPRR1067</a>	Market Entry Qualifications, Continued Participation Requirements, and Credit Risk Assessment
<a href="#">NPRR1070</a>	Planning Criteria for GTC Exit Solutions
<a href="#">NPRR1084</a>	Improvements to Reporting of Resource Outages and Derates
<a href="#">NPRR1085</a>	Ensuring Continuous Validity of Physical Responsive Capability (PRC) and Dispatch through Timely Changes to Resource Telemetry and Current Operating Plans (COPs)
<a href="#">NPRR1088</a>	Applying Forward Adjustment Factors to Forward Market Positions and Un-applying Forward Adjustment Factors to Prior Market Positions
<a href="#">NPRR1089</a>	Requiring Highest-Ranking Representative, Official, or Officer of a Resource Entity to Execute Weatherization and Natural Gas Declarations
<a href="#">NPRR1092</a>	Reduce RUC Offer Floor and Remove RUC Opt-Out Provision
<a href="#">NPRR1095</a>	Texas SET V5.0 Changes
<a href="#">NPRR1096</a>	Require Sustained Six Hour Capability for ECRS and Non-Spin
<a href="#">NPRR1097</a>	Create Resource Forced Outage Report
<a href="#">NPRR1098</a>	Direct Current Tie (DC Tie) Reactive Power Capability Requirements
<a href="#">NPRR1099</a>	Managing Network Operations Model Resource Nodes
<a href="#">NPRR1100</a>	Emergency Switching Solutions for Energy Storage Resources
<a href="#">NPRR1102</a>	ERCOT Discretion for Adjusting Non-Interval Data Recorder (NIDR) Backcasted Load Profiles


Protocols - Nodal

PowerPoint - All Documents

ercot.com/mktrules/nprotocols

AppsBookmarksHome - Trend Anal...ERCOTInformation Req...658/659 Client Ser...Data RequestWEBEXZOOMSharePoint HomeMarket Training - H...SurveyMonkeyVTA LearnerRISC - VTAWCMMkt notices

MIS LOG INSearch



About ERCOTServicesCommittees and GroupsMarket RulesMarket InformationGrid InformationMarket Participants

[Home](#) > [Market Rules](#) > [Protocols - Nodal](#)

## Protocols - Nodal

The Protocols outline the procedures and processes used by ERCOT to develop and maintain the Nodal Protocols as well as requests for changes and clarification of the Protocols.

### IN THIS SECTION

[Current Protocols - Nodal](#)

The Nodal Protocols become effective upon Texas Nodal market implementation.

[Protocol Library - Nodal](#)

Find the monthly versions of the complete Nodal Protocol set, including the Nodal Protocol Revision Requests.

[Nodal Protocol Revision Requests](#)

Locate current and past Nodal Protocol revision requests, including those that are currently under review.

[NPRR Submission Process](#)

Find the directions and forms to submit a Nodal Protocol revision request.

[Protocol Interpretation Request Submission Process](#)

Read about the process for submitting a PIR, and find the form.

Protocols - Nodal

[Current Protocols - Nodal](#)

[Protocol Library - Nodal](#)

[Nodal Protocol Revision Requests](#)

[NPRR Submission Process](#)

[Protocol Interpretation Request Submission Process](#)

Archives - Zonal

PUCT Directives

[Southern Cross Transmission](#)

[Real-Time Co-Optimization](#)

Market Guides

[Commercial Operations Market Guide](#)

[Data Transport Guides](#)

[Load Profiling Guide](#)

[Nodal Operating Guide](#)

[Operating Procedures](#)

[Planning Guide](#)

[Resource Registration](#)

[Glossary](#)

[Retail Market Guide](#)

[Settlement Metering Operating Guide](#)

[Texas Standard Electronic Transaction Guides](#)

[Verifiable Cost Manual](#)

[Inactive Market Guides](#)

Pilot Projects

[30-Minute Emergency Response Service - Completed](#)

[Fast Responding Regulation Service - Completed](#)

[Weather Sensitive Emergency Response Service - Completed](#)

System Changes

[System Change Requests](#)

Compliance in ERCOT

[Business Practice Manual](#)

Other Binding Documents

[Other Binding Documents List](#)

[Other Binding Documents Revision Requests](#)

Key Priorities

[Battery Energy Storage](#)

Related Content

On this site

[Protocol Revision Requests](#)

[Protocol Revision Subcommittee](#)

About ERCOT

Services

Committees & Groups

Market Rules

Contact Us

Glossary

Careers

Locations

Quick Links

[Ethics Point](#)






[Operations Messages](#)

[Project Status](#)

[Service Level Agreements](#)

STAY CONNECTED

SOCIAL



NEWS & PRESS

https://www.ercot.com/mktrules

42

*Approves all changes  
to Market Rules*

PUCT

*Advised by  
Stakeholder Groups*

Board  
Of  
Directors

*Makes policy  
recommendations*

Technical  
Advisory  
Committee  
(TAC)

Retail Market  
Subcommittee  
(RMS)

Reliability  
Operations  
Subcommittee  
(ROS)

Wholesale  
Market  
Subcommittee  
(WMS)

Protocol  
Revision  
Subcommittee  
(PRS)



Retail Market  
Subcommittee  
(RMS)

## Working Groups

Profiling (PWG)

Texas Data Transport &  
MarkeTrak Systems (TDTMS)

Texas SET

## Task Forces

Retail Market Training (RMTTF)



Module 3

## Retail Operations



## Retail Transaction:

A Communication that enables and facilitates retail business processes in the deregulated Texas Electrical Market.

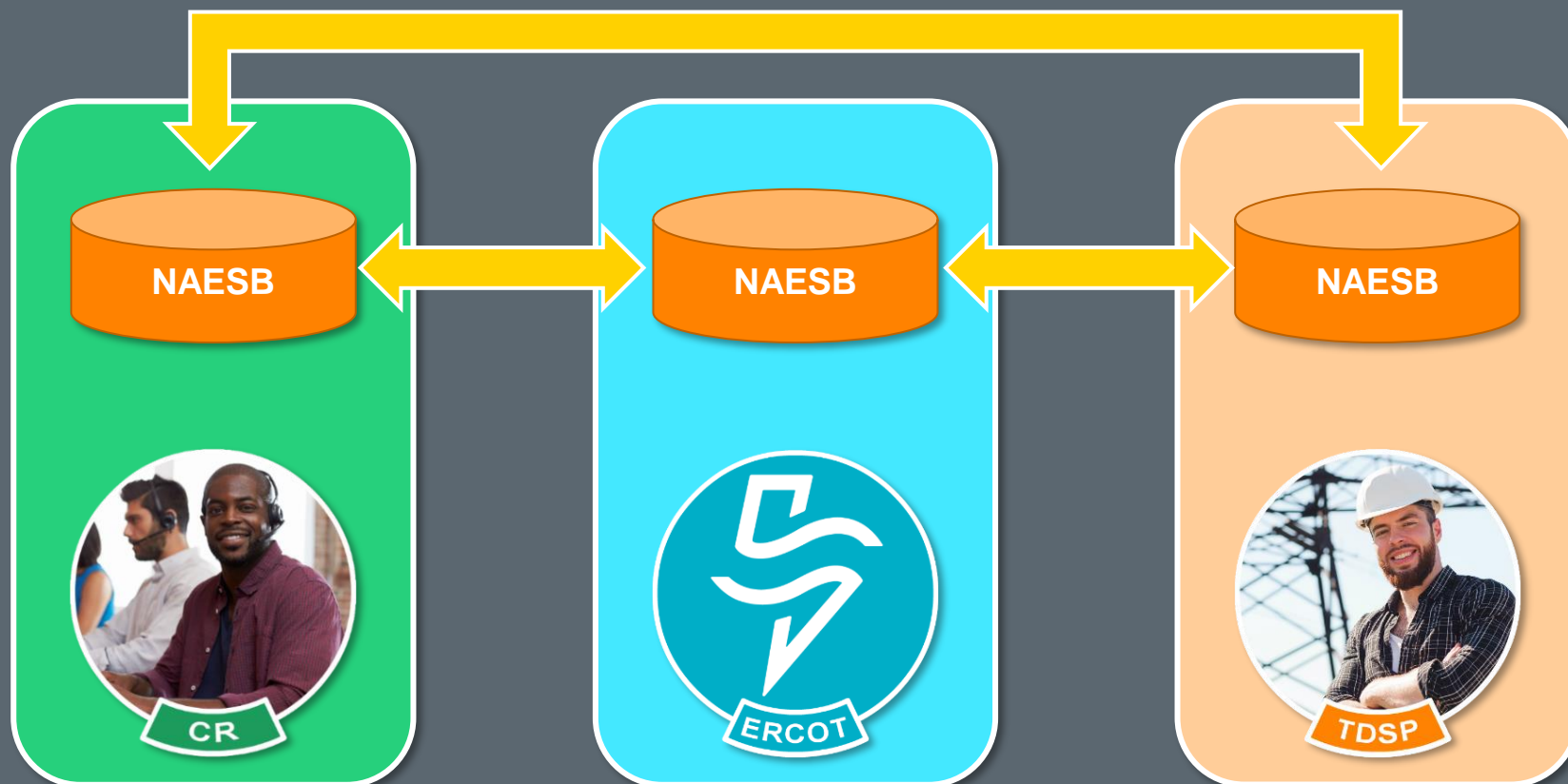
- Involves REPs, TDSPs and ERCOT
- Electronic Data Interchange (EDI) format, based on ANSI ASC X12 Standards



## Retail Transactions Are Defined By TX SET Implementation Guides

- Developed and maintained by TX SET Working Group
- Protocol Section 19
- Implementation Guides





North American Energy Standards Board (NAESB)  
Common communications protocol

Texas Standard Electronic Transa x PowerPoint - All Documents x +

ercot.com/mktrules/guides/txset

Apps Bookmarks Home - Trend Anal... ERCOT Information Reques... 658/659 Client Serv... Data Request WEBEX ZOOM SharePoint Home Market Training - H... SurveyMonkey VTA Learner RISC - VTA WCM Mkt notices

[Home](#) > [Market Rules](#) > [Market Guides](#) > [Texas Standard Electronic Transaction Guides](#)

## Texas Standard Electronic Transaction Guides

Information on each Texas Standard Electronic Transaction (Texas SET) used by the competitive retail electric market is available in this section. Implementation guides, retail market processes for transactions and Texas SET proposed and adopted changes can be found below.

### IN THIS SECTION

- [Texas SET Swimlanes](#)  
Find the current swimlanes, which outline the business process lifecycle for retail transactions.
- [Texas Standard Electronic Transaction Issues](#)  
Locate current and past Texas SET issues, including those new, under review or closed.
- [Texas SET Change Controls](#)  
New and Pending (Under Review) Change Controls, those that have been Approved for future Texas SET versions, as well as all Withdrawn and already Implemented Change Controls.
- [Current Texas SET Implementation Guides](#)  
Find the latest Texas SET guides, which provide information on the electronic transactions in the Texas retail electric market.

### Key Documents

<a href="#">Change Control Log</a> This contains a log of all change controls submitted	Oct 5, 2021 - xlsx - 176.8 KB
<a href="#">TXSET Change Control Dispute Form</a>	Jul 23, 2015 - doc - 38.5 KB
<a href="#">Texas SET Change Control Form</a> Form to be completed only by Texas SET Working Group	Feb 11, 2011 - doc - 36.5 KB
<a href="#">Texas SET Issue Form</a> Form to submit a request regarding an issue to ERCOT	Sep 30, 2010 - doc - 43.5 KB
<a href="#">Transaction Names Inventory V5.0</a> Texas SET Transactions - Version 5.0	Oct 21, 2021 - xls - 57 KB

#### Related Content

##### On this site

- [Texas SET Working Group](#)
- [Market Coordination Team for Texas SET Version Release 4.0](#)



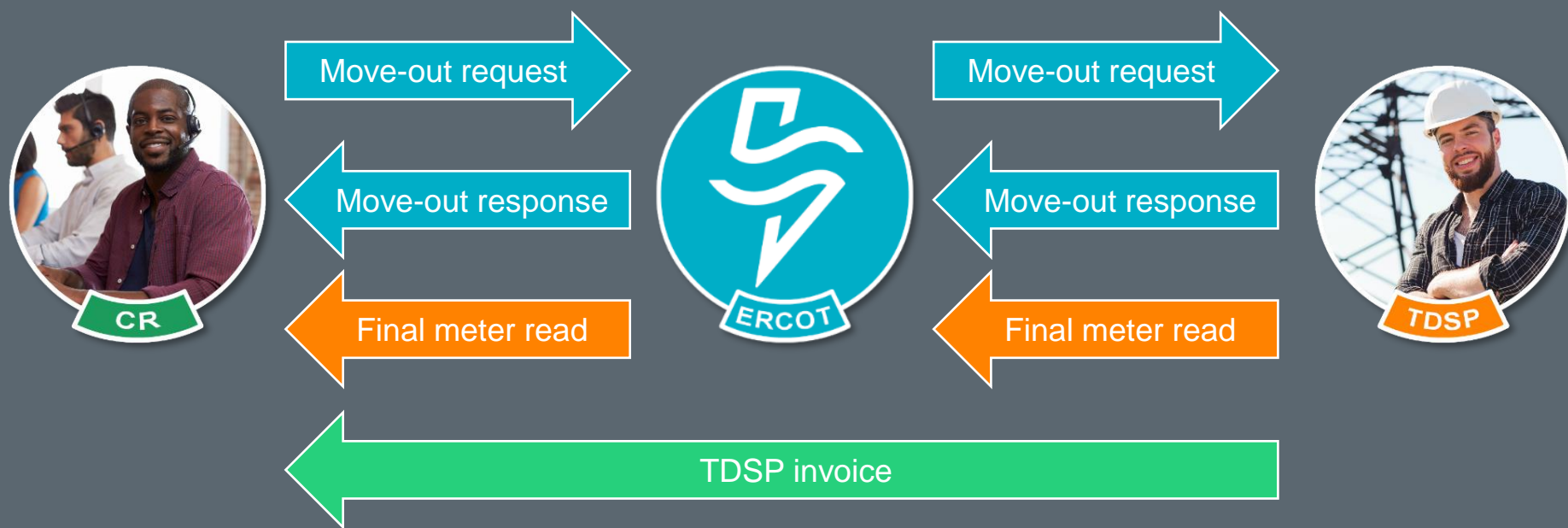
Transaction Families	
Request, Response, Maintenance for Enrollments, Drops, Switches, Maintenance & Request Consumption	<b>814_XX</b>
Interval, Non Interval, Reads & Usage Data Historical and Monthly Activity	<b>867_XX</b>
Reject Response to 810 or 867 Data	<b>824_XX</b>

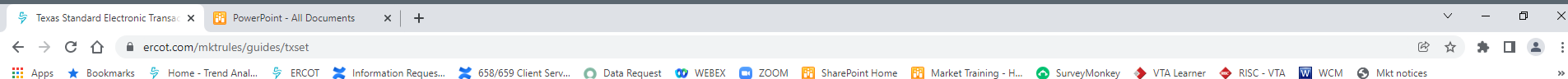
Transaction Families	
Statement, Settlement, Wire Charge Invoices	<b>810_XX</b>
Payment and Advice through Bank	<b>820_XX</b>
Maintenance Service Order - Work Orders, Meter Config. Details, Outage Notification	<b>650_XX</b>

More detailed description in Protocol Section 19

## Market Process

A series of retail transactions that must occur in a particular sequence





[Home](#) > [Market Rules](#) > [Market Guides](#) > Texas Standard Electronic Transaction Guides

# Texas Standard Electronic Transaction Guides

Information on each Texas Standard Electronic Transaction (Texas SET) used by the competitive retail electric market is available in this section. Implementation guides, retail market processes for transactions and Texas SET proposed and adopted changes can be found below.

## IN THIS SECTION

### [Texas SET Swimlanes](#)

Find the current swimlanes, which outline the business process lifecycle for retail transactions.

### [Texas Standard Electronic Transaction issues](#)

Locate current and past Texas SET issues, including those new, under review or closed.

### [Texas SET Change Controls](#)

New and Pending (Under Review) Change Controls, those that have been Approved for future Texas SET versions, as well as all Withdrawn and already Implemented Change Controls.

### [Current Texas SET Implementation Guides](#)

Find the latest Texas SET guides, which provide information on the electronic transactions in the Texas retail electric market.

## Related Content

### On this site

[Texas SET Working Group](#)

[Market Coordination Team for Texas SET Version Release 4.0](#)

## Key Documents

### [Change Control Log](#)

Oct 5, 2021 - xlsx - 176.8 KB

This contains a log of all change controls submitted

### [TXSET Change Control Dispute Form](#)

Jul 23, 2015 - doc - 38.5 KB

### [Texas SET Change Control Form](#)

Feb 11, 2011 - doc - 36.5 KB

Form to be completed only by Texas SET Working Group

### [Texas SET Issue Form](#)

Sep 30, 2010 - doc - 43.5 KB

Form to submit a request regarding an issue to ERCOT

### [Transaction Names Inventory V5.0](#)

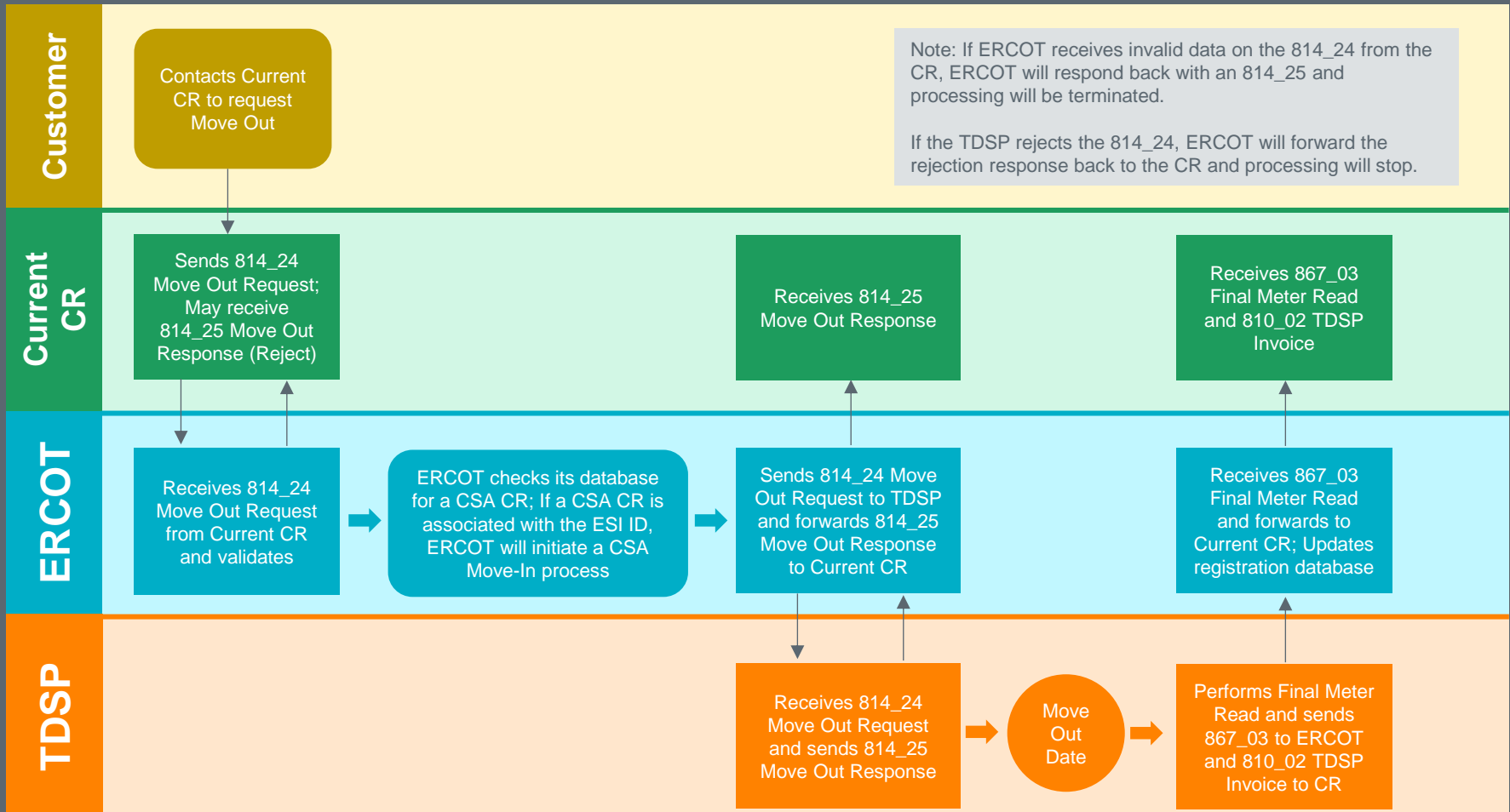
Oct 21, 2021 - xls - 57 KB

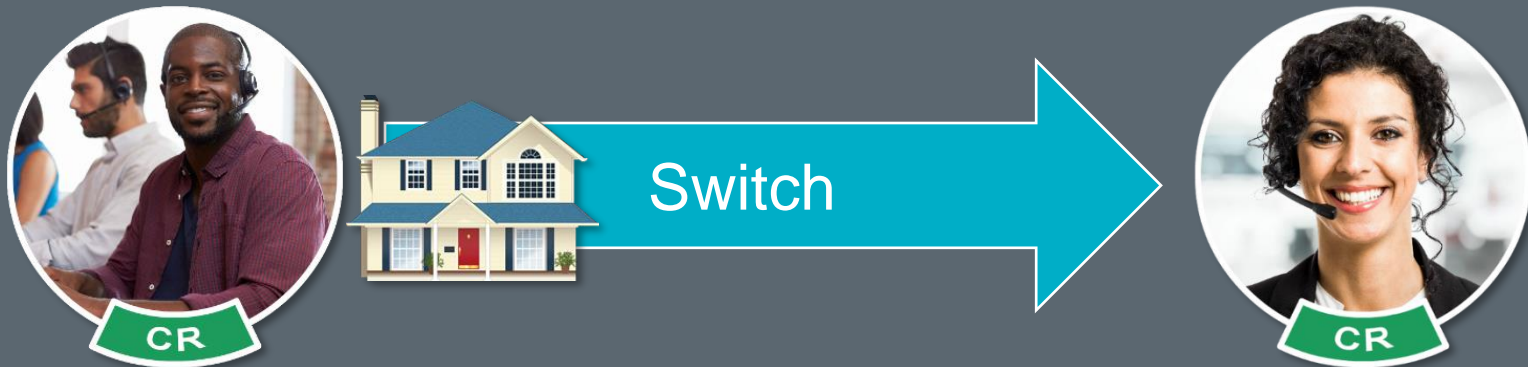
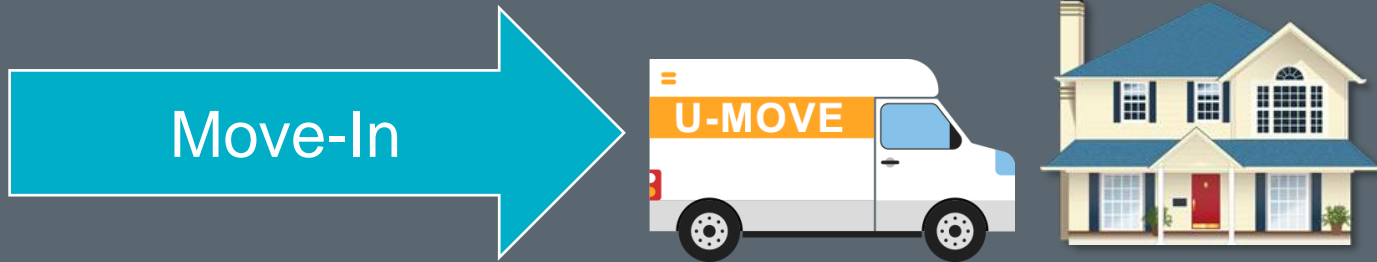
Texas SET Transactions - Version 5.0

## Move Out

Scenario: Customer Initiated Move Out No CSA Associate with ESI ID

Transactions: 814\_24, 814\_25, 867\_03, 810\_02







### Customer Decides to Select a New CR

?

Who does the customer call

?

What does the CR do

?

Who has to know ... Who does this

?

What does the TDSP do

?

Does anything else need to be done





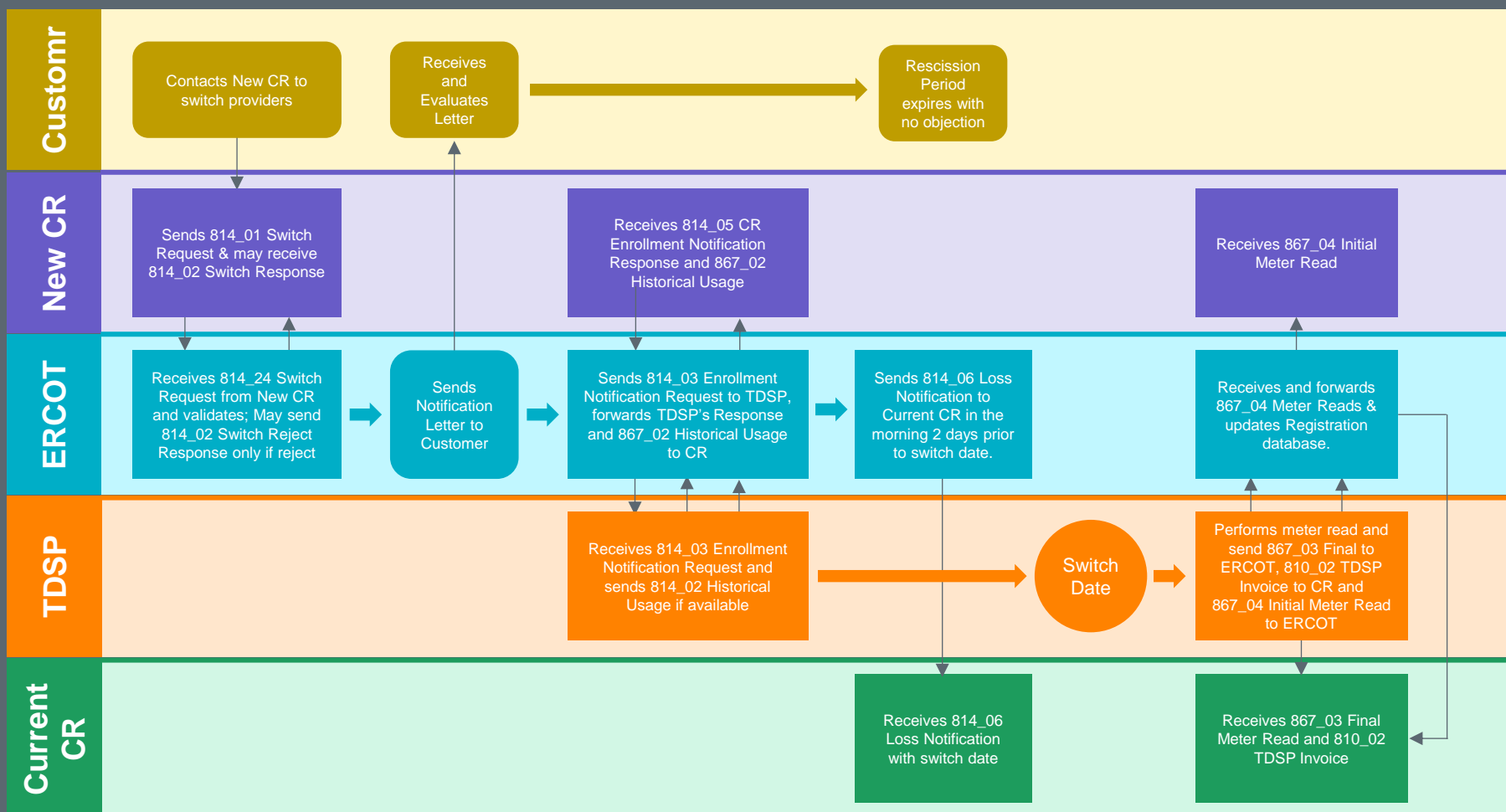
		From				To			
Transaction Type		ERCOT	Old CR	TDSP	New CR	ERCOT	Old CR	TDSP	New CR
Switch Request									
Enrollment Notification Request									
Enrollment Notification Response									
CR Enrollment Notification Response									
Loss Notification									
Final Usage									
Initial Meter Read									

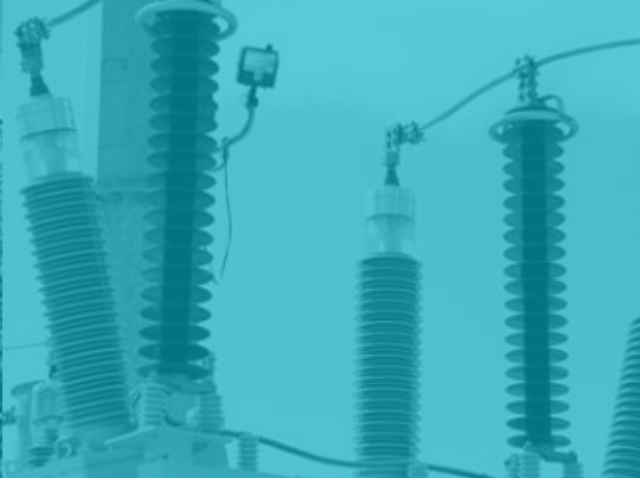


## Switch

Scenario: Customer Switch, No Customer Objection

Transactions: 814\_01, 814\_02 (Reject Only), 814\_03, 814\_04, 814\_05, 814\_06, 867\_02, 867\_03, 810\_02, 867\_04



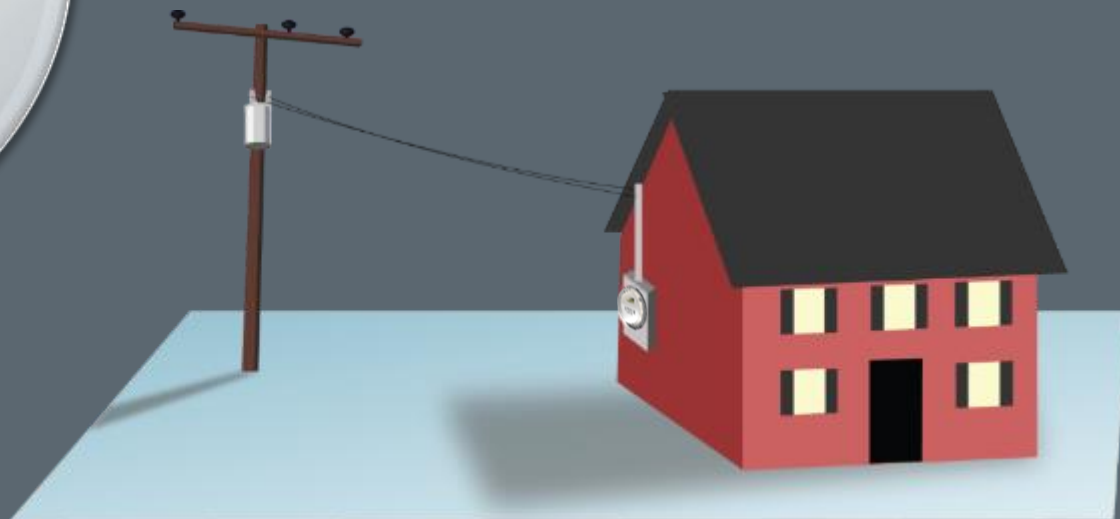


## Module 4 Metering



## Meter:

A device that measures electrical usage over a period of time.



## What are we measuring?

$$\text{WATTS} = (\text{Current}) \times (\text{Voltage})$$

Ex: 100 W Light bulb

$$\text{Energy} = \text{Watt-Hours}$$

Ex: (10) x (100 W Light bulbs for 1 Hour)  
= 1000 WHr (or 1 kWH)

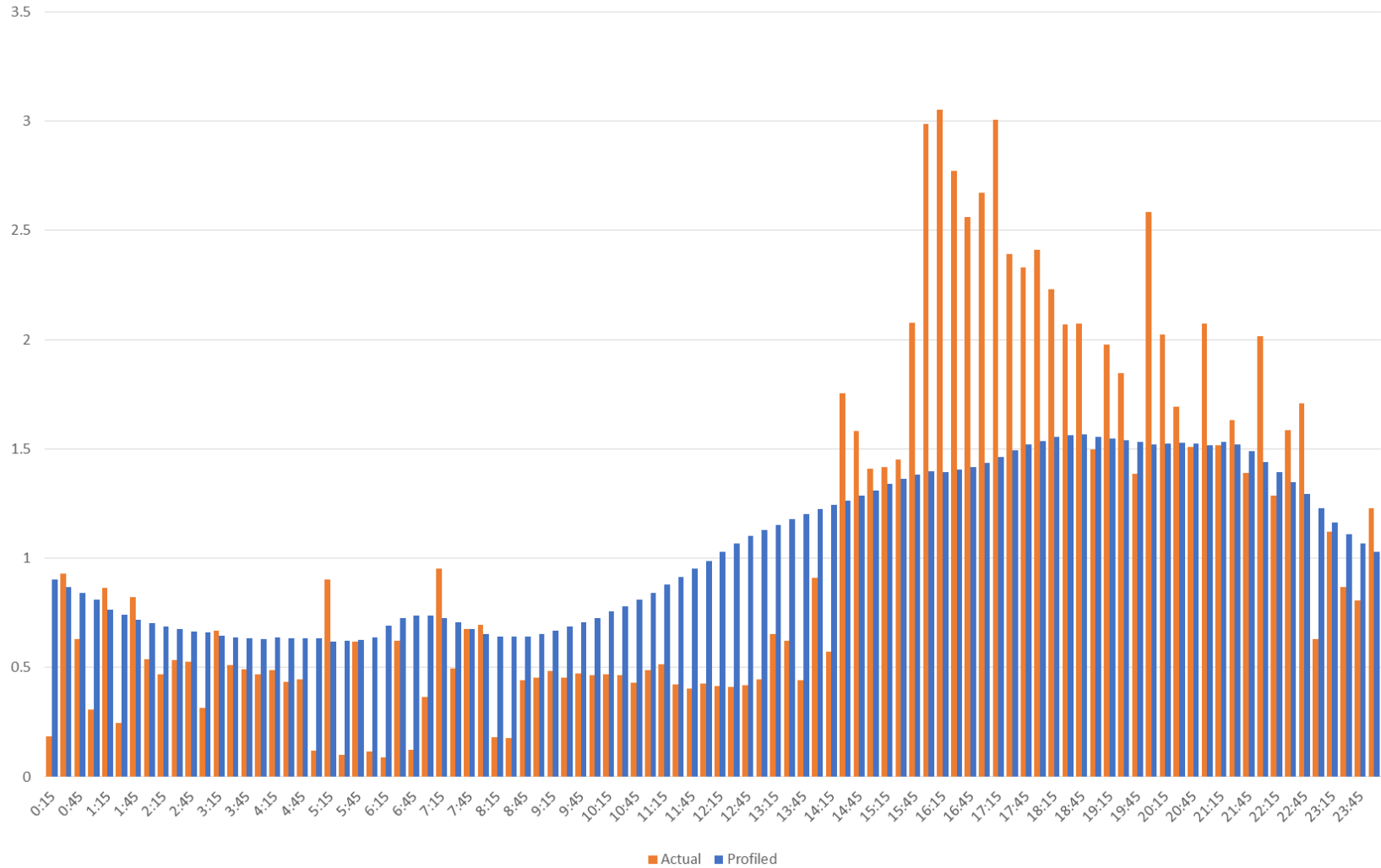


## Non-IDR/Scalar/Analog Meter Characteristics

- “Traditional” Meter
- Scalar measurement for an entire month
- Data must be shaped for Wholesale Settlement
- Manual field activities



Profile vs Actual





## Non-Interval Data

- Usage is recorded in ~30 day intervals
- Data must be shaped for 15 minute Wholesale Settlement

VS



## Interval Data

- Usage is recorded in 15 minute intervals (96 intervals per 24 hrs)
- Data is already shaped for 15 minute Wholesale Settlement



## Characteristics

- Wholesale Settlement ready
- Remotely read



### **AMSR ( $\leq 200$ amp)**

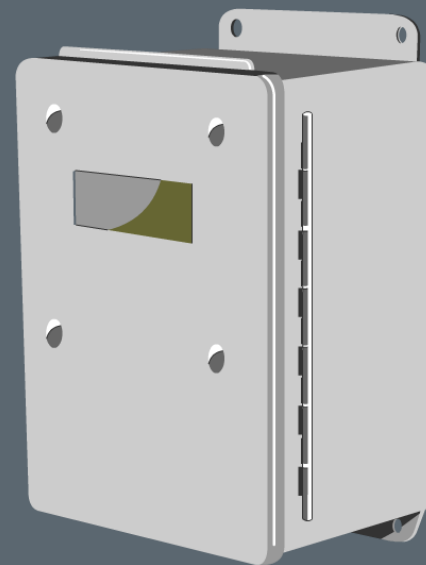
Remote connect /  
disconnect

### **AMSM**

Manual connect /  
disconnect

## Interval Data Recorder (IDR) Meter Characteristics

- Wholesale Settlement ready
- Typically reported monthly
- Predominantly on large customers  
> 700 kW/kVA demand
- May require manual field activities



## AMS benefits to the market

- 99.5% competitive load using interval data
- REP and Customer can see actual usage
- More accurate CR Settlement with QSE

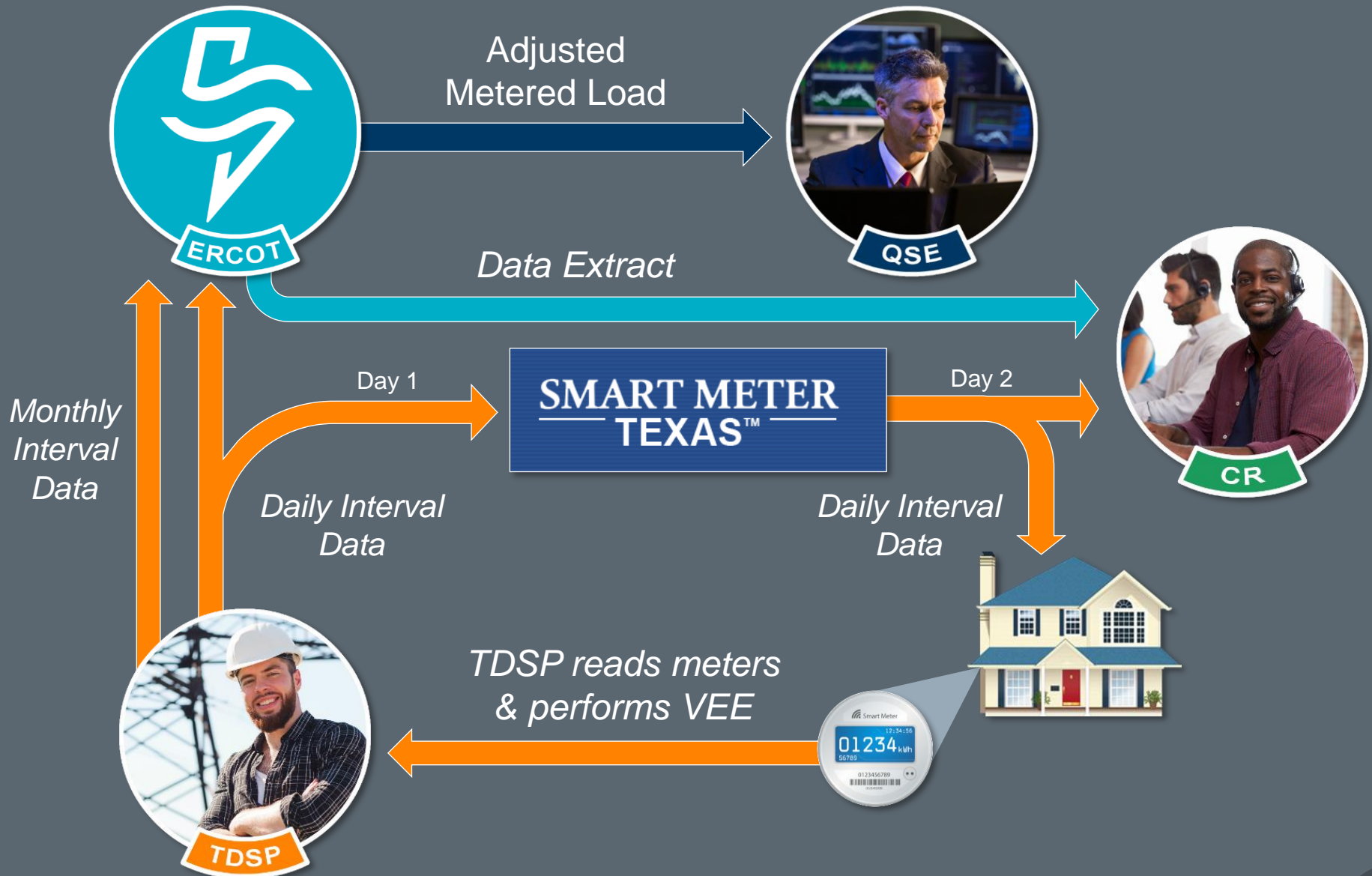


## AMS benefits to the market

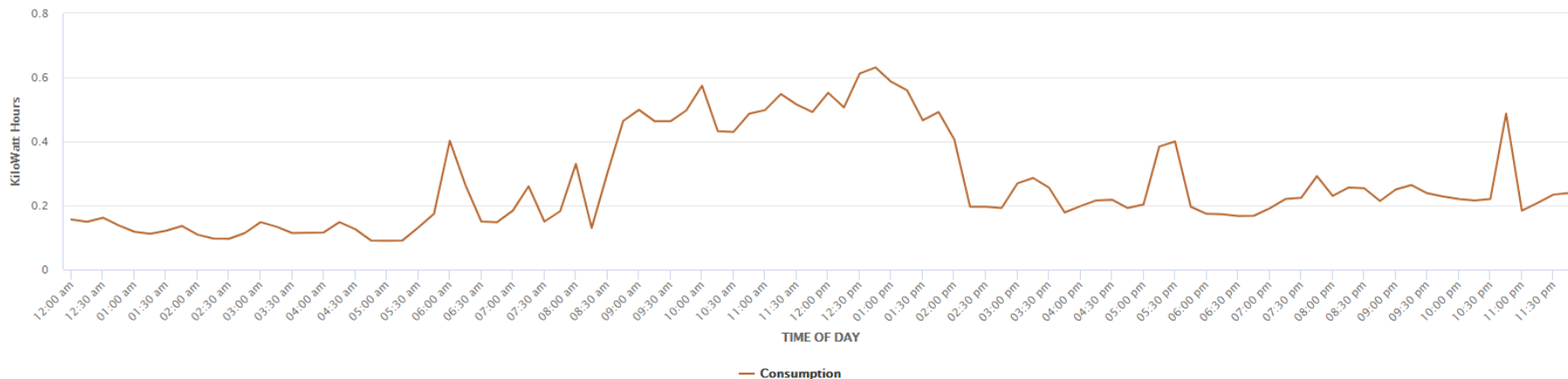
- 73% actual data used on Initial Settlement
- Faster execution of retail market processes



<u>Enrollment type</u> Initiating Transaction	<u>AMS Remote</u> (AMSR)	<u>AMS Manual</u> (AMSM)	<u>Non-AMS</u>
<b>Move-In</b> 814_16	Same Day	2 Business Days	2 Business Days
<b>Standard Switch</b> 814_01	Same Day	Same Day	Within Next 4 Business Days
<b>Self Selected Switch</b> 814_01	Same Day	Same Day	At Least 2 Business Days
<b>Move-Out</b> 814_24	Same Day	2 Business Days	2 Business Days



Energy Data Graph (15 Minute Intervals) - Kilowatt Hours for 03/29/2021



Energy Data Table (15 Minute Intervals) - Kilowatt Hours for 03/29/2021

Consumption = Consumption in excess of Generation ; Surplus Generation = Generation in excess of Consumption

[View in Excel](#)

Start Time	End Time	Consumption(Kwh)	Act./Est.	Surplus Generation(KwhH)	Act./Est.
01:00 am	01:15 am	0.118	Actual	0	NA
01:15 am	01:30 am	0.112	Actual	0	NA
01:30 am	01:45 am	0.121	Actual	0	NA
01:45 am	02:00 am	0.136	Actual	0	NA
02:00 am	02:15 am	0.109	Actual	0	NA
02:15 am	02:30 am	0.097	Actual	0	NA
02:30 am	02:45 am	0.096	Actual	0	NA
02:45 am	03:00 am	0.114	Actual	0	NA
03:00 am	03:15 am	0.148	Actual	0	NA
03:15 am	03:30 am	0.134	Actual	0	NA
03:30 am	03:45 am	0.114	Actual	0	NA
03:45 am	04:00 am	0.115	Actual	0	NA

## Other AMS Benefits



Allows for pre-pay programs



Allows for demand response



Allows for Time-of-Use rate offerings

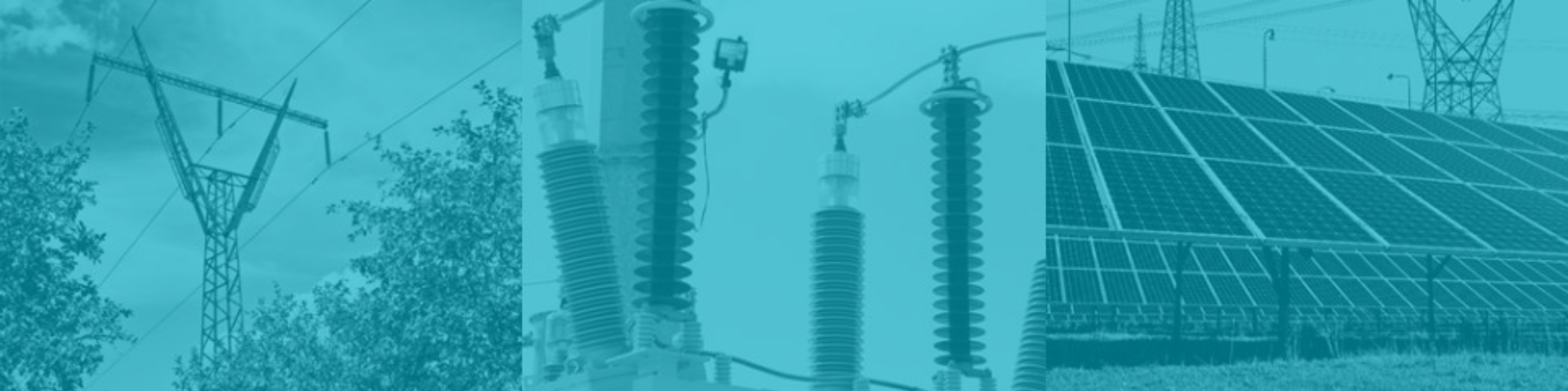


Improved service reliability



Early detection of faulty meters or tampering

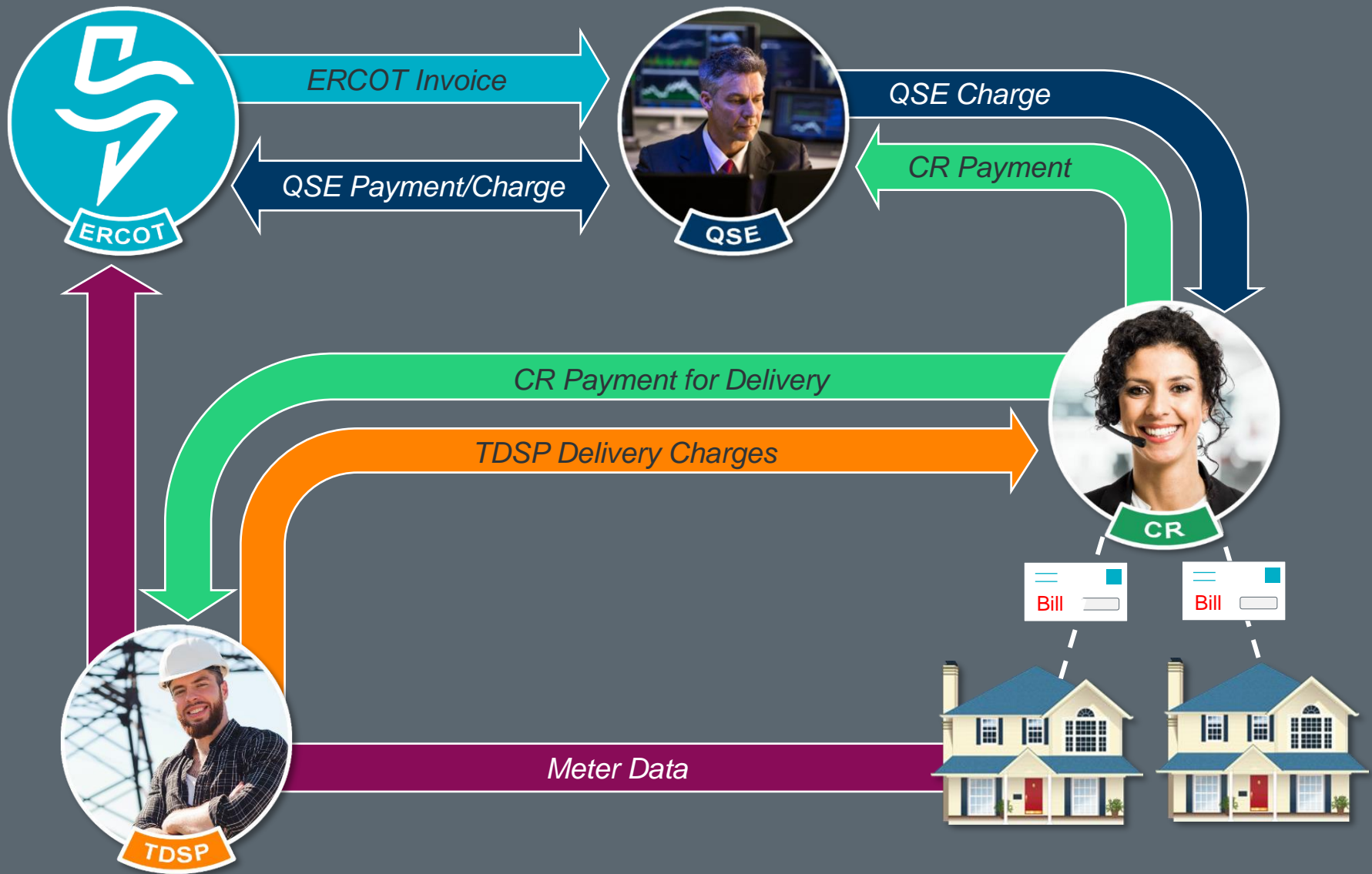




## Module 5

# Settlement of Retail Load





## ERCOT Settles with QSE based on Adjusted Metered Load



### Adjusted Meter Load

Unaccounted for Energy

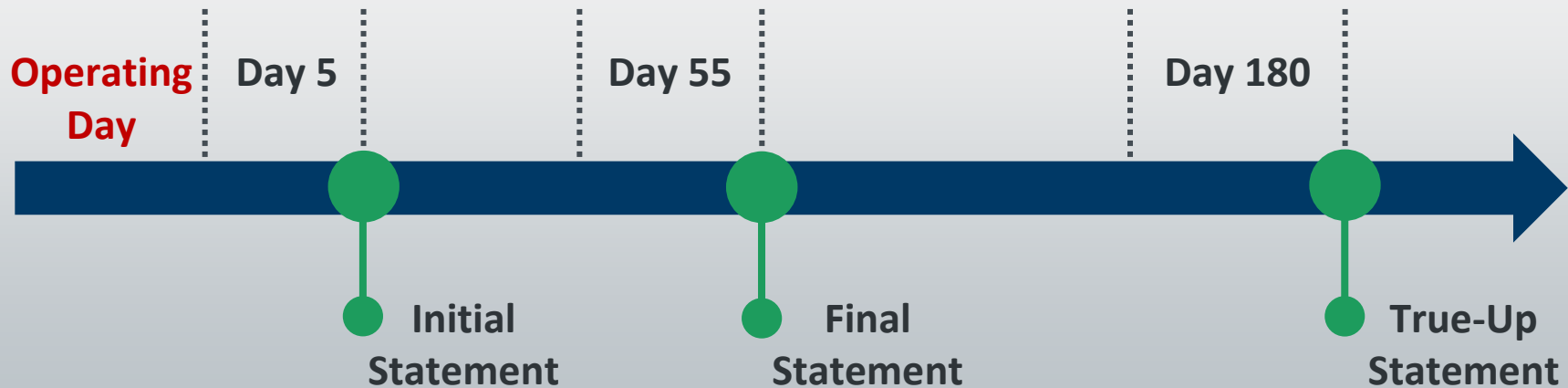
Transmission Loss Factors

Distribution Loss Factors

Aggregation by QSE and LSE

- Each Operating day is settled a minimum of three times
- Most settlement is transacted on the Initial Settlement

## ERCOT Real-Time Settlements Timeline





## Important Questions



Module 6

## Data Transparency & Availability







Also available  
on [ercot.com](http://ercot.com)



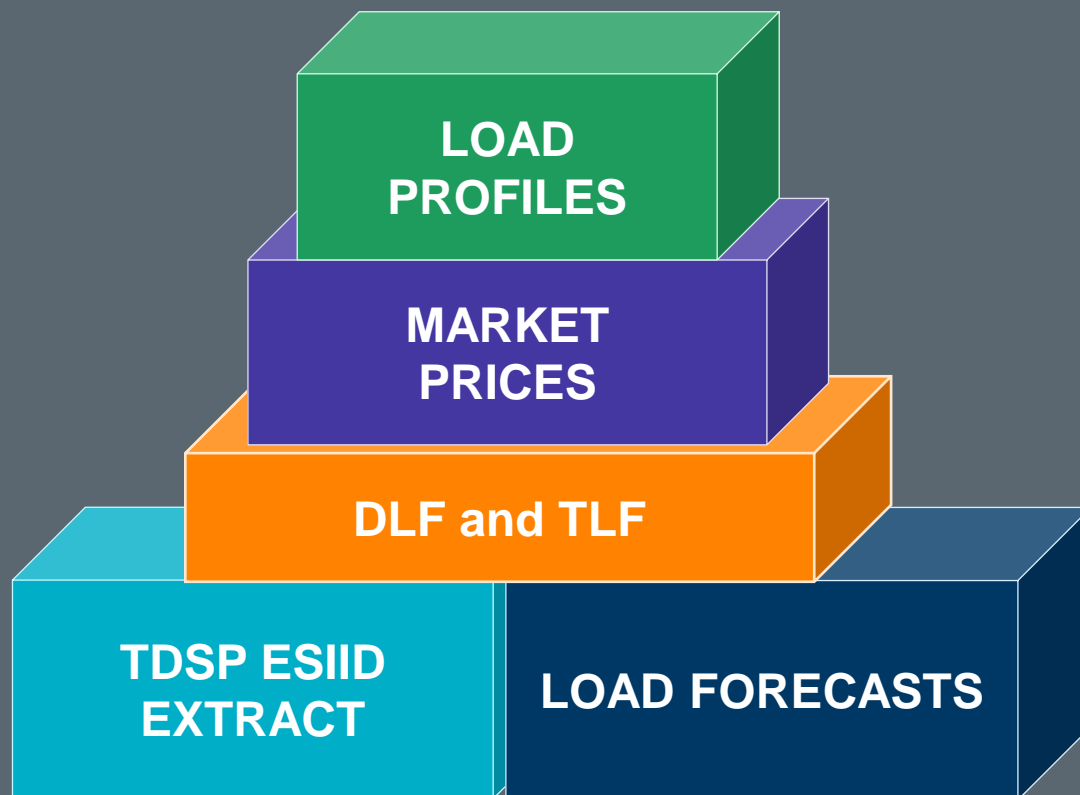
Available to  
all Market  
Participants



Only available  
to a specific  
Market  
Participant

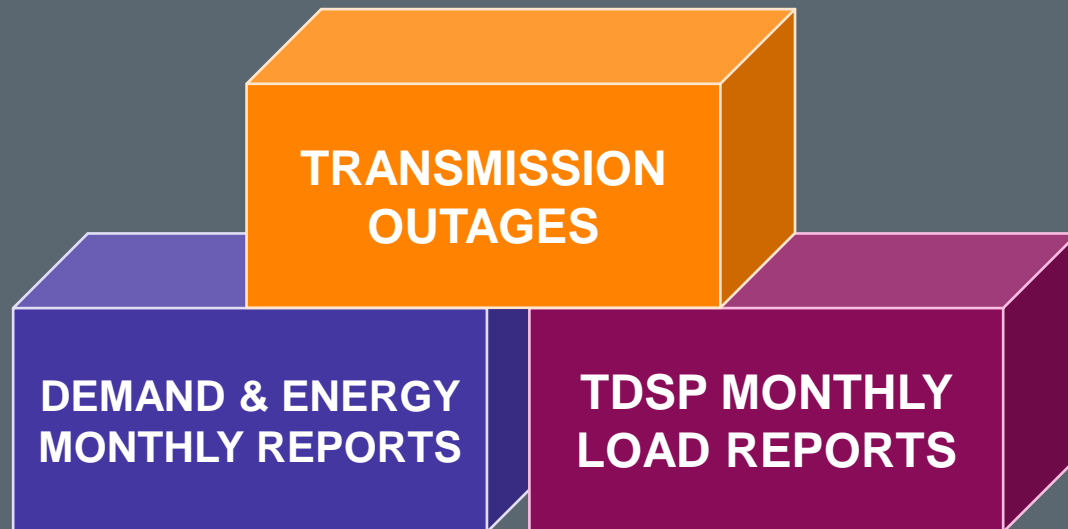


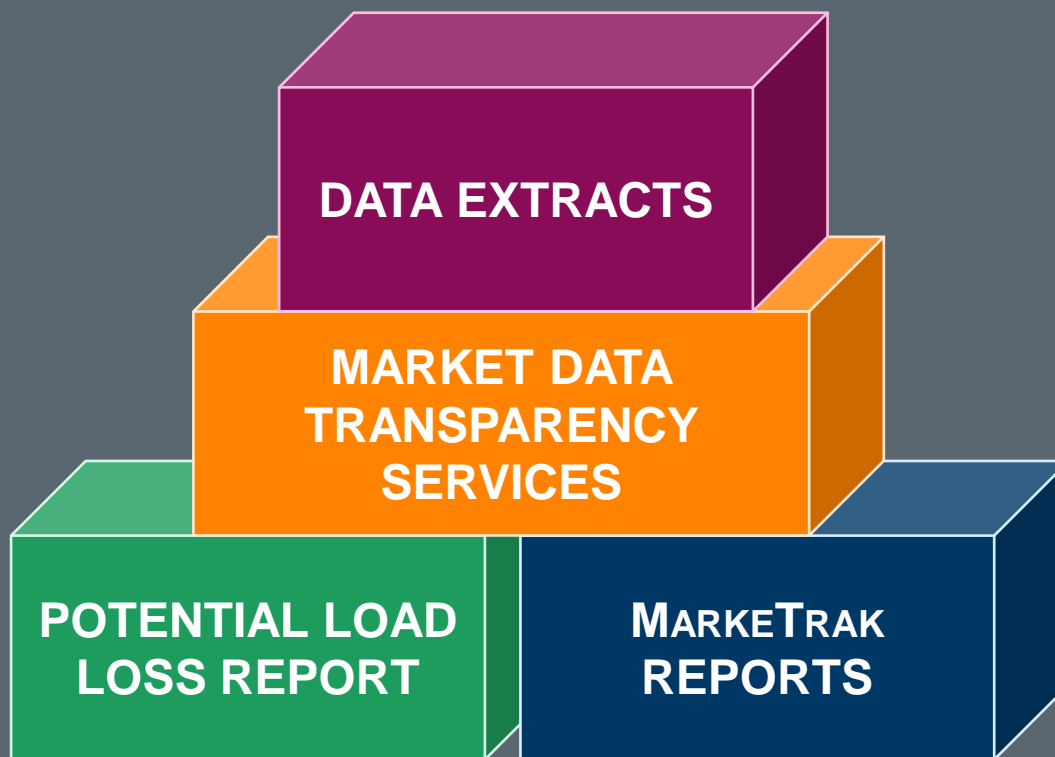
Access managed by assigned roles



Public Data is also available on [ercot.com](http://ercot.com)





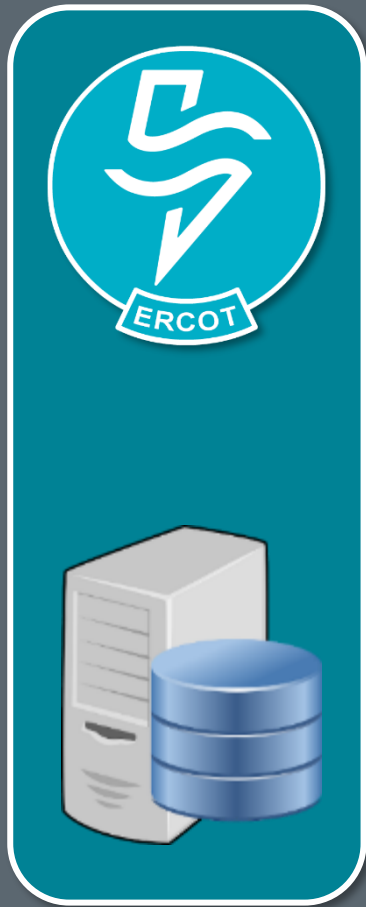


## ESIID Service History and Usage Extract

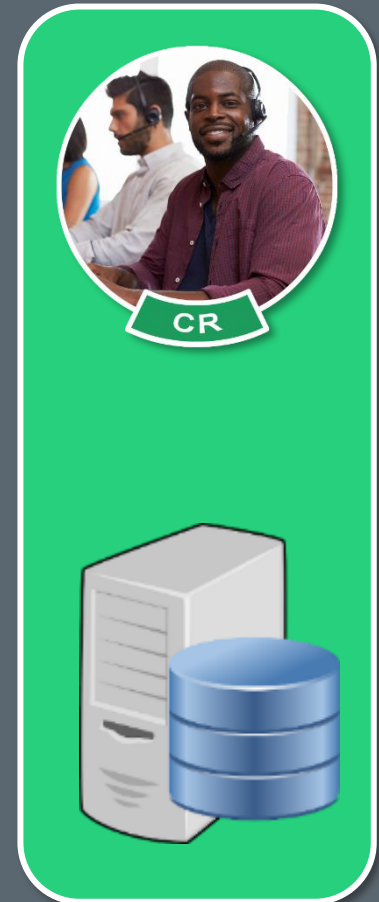
- ESI ID Relationships and Characteristics
- Provides data needed to perform shadow settlements of Retail load.
  - Supplemental IDR Required Interval Data Extract
  - Supplemental AMS Interval Data Extract



See ERCOT  
courses on MIS and  
Intro to Extracts



CSV or XML





## 1. Construct a Database

The screenshot shows the ERCOT website's Market Data Transparency page. The browser's address bar displays `ercot.com/services/mdt`. The page header includes the ERCOT logo and navigation links: About ERCOT, Services, Committees and Groups, Market Rules, Market Information, Grid Information, and Market Participants. The 'Services' link is highlighted with a yellow box. The main content area is titled 'Market Data Transparency' and includes a breadcrumb trail: Home > Services > Market Data Transparency. Below the title, a paragraph states: 'As a service to the market, ERCOT publishes helpful guides on how to use data extracts and applications.' A section titled 'IN THIS SECTION' lists several resources: DDLs (Data Definition Language files), User Guides (helpful ERCOT guides), Digital Certificate Security Information (certificates and public key information), and XSDs (XML Schema Definitions files). A yellow box highlights the 'User Guides' link and its description. A dark blue navigation menu is overlaid on the right side of the page, listing various services and programs. The 'Market Data Transparency' link within this menu is also highlighted with a yellow box. The bottom of the page features a 'Key Documents' section with a table of links and file details.

Market Data Transparency

ercot

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

Home > Services > Market Data Transparency

### Market Data Transparency

As a service to the market, ERCOT publishes helpful guides on how to use data extracts and applications.

#### IN THIS SECTION

- DDLs**  
Data Definition Language (DDL) files are provided to Market Participants from ERCOT in order to create and manage data extracts.
- User Guides**  
Find helpful ERCOT guides on how to use various data extracts and applications.
- Digital Certificate Security Information**  
This page contains root and intermediate certificates and public key information needed to interface with ERCOT systems.
- XSDs**  
XML Schema Definitions (XSD) files are used to define extracts provided in an Extensible Markup Language (XML) format.

#### Key Documents

MDT Missed Posting Archive 2021	Jan 3, 2022 - xlsx - 23.9 KB
MDT Missed Posting Archive 2020	Jan 4, 2021 - xlsx - 26.4 KB
MDT Missed Posting Archive 2019	Jan 11, 2020 - xlsx - 55.9 KB



## 2. Subscribe



EMIL Applications Notices

[Home](#) > Applications

# Application Library

These are the applications available based on your Digital Certificate's permissions.



### CRR MOI

Internal Congestion Revenue Rights (CRR)  
Market Operator Inte...

Certified



### Extract Subscriber

Subscribe/unsubscribe to/from specific  
certified retail and s...

Certified



### Find ESIID

Find Electric Service Identifier (ESI ID)  
information.

Secure



### Market Data Transparency Web Services

Self-service data request access for a subset of  
AMS, Service...

Certified

Help





[Home](#) > Applications

## Application Library

These are the applications available based on your Digital Certificate's permissions.



### CRR MOI

Internal Congestion Revenue Rights (CRR) Market Operator Inte...

Certified



### Extract Subscriber

Subscribe/unsubscribe to/from specific certified retail and s...

Certified



### Find ESIID

Find Electric Service Identifier (ESI ID) information.

Secure



### Market Data Transparency Web Services

Self-service data request access for a subset of AMS, Service...

Certified



### Market Manager (MMSUI)

Market Manager (MMSUI) is used to create and review market su...

Certified



### NMMS MOD

NMMS Model on Demand (MOD) allows for submission, modificatio...

Certified



### NMMS PTC

NMMS Project Tracker and Coordinator (PTC) allows for submiss...

Certified



### Outage Scheduler

Outage Scheduler (OS) is used to view, submit, and modify Out...

Certified



### Renewable Energy Credits

Link to Texas Renewable Energy Credits (REC) website.



### Service Requests

Create or find Service Requests.

Certified



### Settlement Disputes

Create or find Settlement Disputes.

Certified



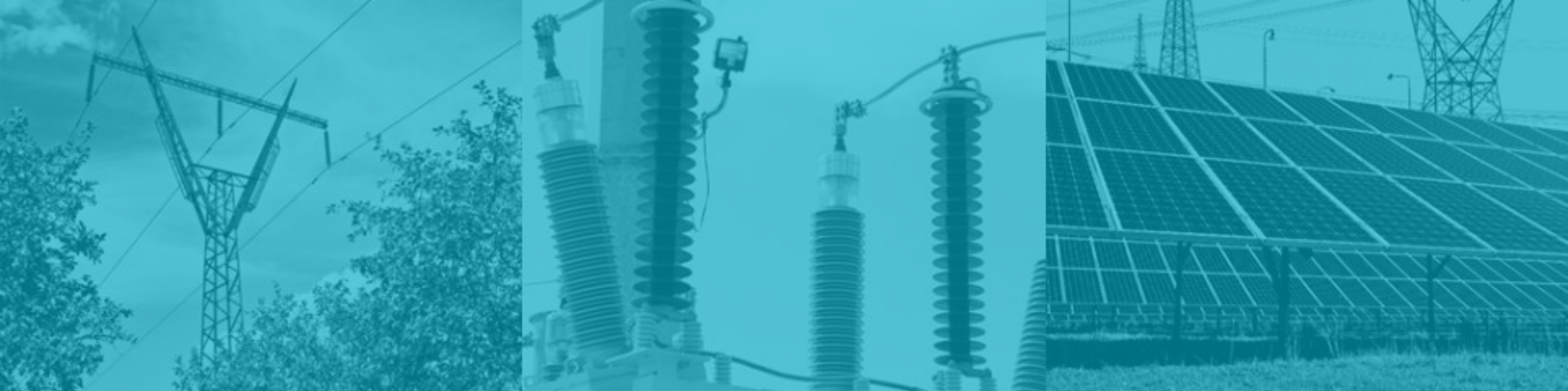
## Provides Similar Information on Ad Hoc Basis

ercot	
Data Request Services	
Status	
Request Information	
Provide ESIID account records	?
Provide ESIIDs I own for a trade date	?
Provide Non-IDR transaction data for ESIIDs I own	?
Provide ESIIDs where AMS interval data not loaded for a trade date	?
Provide IDR usage data for ESIIDs I own (IDR required)	?
Provide all extract records for ESIID Service History and Usage extract	?
Provide AMS interval data for a trade date	?
Transaction Information	

90



**What does a CR do with all this data?**



Module 7

## Issue Resolution



## Retail responsibilities

- Investigate customer issues
- Maintain customer records
- Verify billing accuracy





**Missing  
Transactions**

**Usage &  
Billing Issues**

**Inadvertent  
Gains &  
Losses**

**Switch Hold**



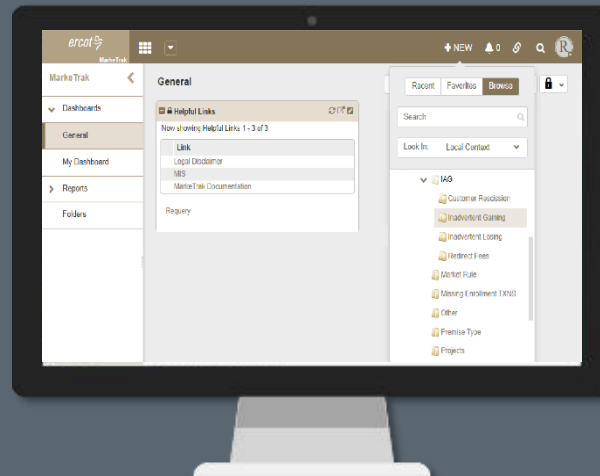


**What tools are available to identify  
& resolve issues?**

Market Participants turn to ...

# MarkeTrak

The Market issue resolution tool





Applications

mis.ercot.com/secure/applications

Home - Trend Anal...

ERCOT

Information Reques...

658/659 Client Serv...

WEBEX

SharePoint Home

Mkt training

Data Request

Market Training - H...

SurveyMonkey

Mkt notices

Site Dashboard - Cr...

Deller, Art - Outloo...

DuckDuckGo

DUNS: 183529049 | ART DELLER

ercot

Market Information System


Data Products

Applications

Notices

## Application Library


These are the applications available based on your Digital Certificate's permissions.



CRR MOI

Internal Congestion Revenue Rights (CRR) Market Operator Inte...


Certified



Extract Subscriber

Subscribe/unsubscribe to/from specific certified retail and s...


Certified



Find ESIID

Find Electric Service Identifier (ESI ID) information.


Secure



Market Data Transparency Web Services

Self-service data request access for a subset of AMS, Service...


Certified



Market Manager (MMSUI)

Market Manager (MMSUI) is used to create and review market su...


Certified



NMMS MOD

NMMS Model on Demand (MOD) allows for submission, modificatio...


Certified



NMMS PTC

NMMS Project Tracker and Coordinator (PTC) allows for submiss...


Certified



Outage Scheduler


Outage Scheduler (OS) is used to view, submit, and modify Out...

Certified



Renewable Energy Credits


Link to Texas Renewable Energy Credits (REC) website.



Service Requests

Create or find Service Requests.

Certified



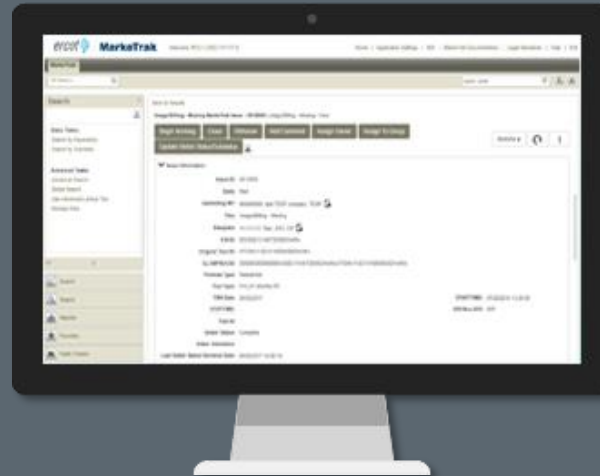
Settlement Disputes

Create or find Settlement Disputes.

Certified

## Goals of MarkeTrak

- Facilitate resolution of issues between Market Participants
  - Discovery and visibility
  - Tracking and status
- Enable historical reporting of issues





## What Happened?

- Customer should be with CR #1
- Customer is now receiving bills from CR #2





## Application Library

These are the applications available based on your Digital Certificate's permissions.



### CRR MOI

Internal Congestion Revenue Rights (CRR) Market Operator Inte...

Certified



### Extract Subscriber

Subscribe/unsubscribe to/from specific certified retail and s...

Certified



### Find ESIID

Find Electric Service Identifier (ESI ID) information.

Secure



### Market Data Transparency Web Services

Self-service data request access for a subset of AMS, Service...

Certified



### Market Manager (MMSUI)

Market Manager (MMSUI) is used to create and review market su...

Certified



### NMMS MOD

NMMS Model on Demand (MOD) allows for submission, modificatio...

Certified



### NMMS PTC

NMMS Project Tracker and Coordinator (PTC) allows for submiss...

Certified



### Outage Scheduler

Outage Scheduler (OS) is used to view, submit, and modify Out...

Certified



### Renewable Energy Credits

Link to Texas Renewable Energy Credits (REC) website.



### Service Requests

Create or find Service Requests.

Certified



### Settlement Disputes

Create or find Settlement Disputes.

Certified



## ESI ID Summary

[Print Summaries](#)

ESI ID	Found	Status	Street ▲	Address Line 2	City	ZIP	CSA	REP of Record	Open Svc Ord	Premise Type	POLR Customer Class	Select Dwnld
ESIID100563425MHOST	✓	A	728 Pacman Blvd		Pflugerville	78660	No	No	No	RES	RES	<input type="checkbox"/>

✓ Selected ESI ID

Select All ☐

[Download Summary](#)

## ESI ID Detail: ESIID100563425MHOST

[View Transactions](#)[Print Details](#)

Address 728 Pacman Blvd  
Pflugerville, TX 78660

Current Status	Active	Utility Name	ERCOTTEST_TDSP	ESI ID Eligibility Date	Oct 27, 2010
Effective Date	Sep 11, 2010	DUNS #	666666666	ESI ID Start Date	Sep 11, 2010
Premise Type	Residential			ESI ID Create Date	Aug 28, 2010
POLR Customer Class	Residential	Metered Flag	true	ESI ID Retired Date	
Settlement AMS Indicator	false	Meter Read Cycle	21		
Switch Hold	N	Power Region	ERCOT		
TDSP AMS Indicator	AMSR	Station Name	DEVILS HILL		
		Station Code	DEVIHI		



CR





Transaction Summary for ESI ID: ESIID100545313MHOST

Print Summaries



REP of Record: Jul 08 2019

+ Switch

+ Move In

+ 1st Unknown 814\_20 Process





# View Transactions – CR1

## Transaction Summary for ESI ID: ESIID100563425MHOST

[Download Results](#)
[Print Summaries](#)


### Switch

Status: **Complete** Original Trxn #: OTIDSW1100563427MHOST

Type	From	To	ERCOT Time Stamp ▲	Trxn Status	Key Date	Retry Status	Duplicate
814_01	LSE	ERCOT	Aug 28, 2019 0132 PM	Accept			No
814_03	ERCOT	ERCOTTEST_TDSP	Aug 28, 2019 0132 PM	Accept	Aug 28 2019		No
814_04	ERCOTTEST_TDSP	ERCOT	Aug 28, 2019 0134 PM	Accept	Aug 28 2019		No
814_05	ERCOT	LSE	Aug 28, 2019 0134 PM	Accept	Aug 28 2019		No
814_06	ERCOT	ERCOTTEST_LSE_1	Aug 28, 2019 0135 PM	Accept	Aug 28 2019		No
867_04	ERCOTTEST_TDSP	LSE	Aug 28, 2019 0137 PM	Accept			No

### Details: 814\_06

[Print Details](#)


From	ERCOT	To	ERCOTTEST_LSE_1
DUNS #	183529049	DUNS #	111111111
Request Submitted	20190828		
Trxn Ref #	SBSW201908281335131WP4SF7	Status/Action	Request Delete
Orig Trxn Ref #	OTIDSW1100563427MHOST	Reason	CHA
Service Period End	20190828		



CR





ESI ID Summary

Print Summaries ?

ESI ID	Found	Status	Street	Address Line 2	City	ZIP	CSA	REP of Record	Open Svc Ord	Premise Type	POLR Customer Class	Select Dwnld
ESIID100563425MHOST	✓	A	728 Pacman Blvd		Pflugerville	78660	No	Yes	No	RES	RES	<input type="checkbox"/>

✓ Selected ESI ID

Select All ☐

Download Summary

ESI ID Detail: ESIID100563425MHOST

View Transactions

Print Details ?

REP of Record as of: Aug 28, 2019

Address 728 Pacman Blvd  
Pflugerville, TX 78660

Current Status	Active	Utility Name	ERCOTTEST_TDSP	ESI ID Eligibility Date	Oct 27, 2010
Effective Date	Sep 11, 2010	DUNS #	666666666	ESI ID Start Date	Sep 11, 2010
Premise Type	Residential			ESI ID Create Date	Aug 28, 2010
POLR Customer Class	Residential	Metered Flag	true	ESI ID Retired Date	
Settlement AMS Indicator	false	Meter Read Cycle	21		
Switch Hold	N	Power Region	ERCOT		
TDSP AMS Indicator	AMSR	Station Name	DEVILS HILL		
		Station Code	DEVIHI		







Transaction Summary for ESI ID: ESIID100545313MHOST

Print Summaries



REP of Record: Aug 28 2019

- + Switch
- + Move In
- + 1st Unknown 814\_20 Process





# View Transactions – CR2

## Transaction Summary for ESI ID: ESIID100563425MHOST

[Download Results](#)[Print Summaries](#)

REP of Record: Aug 28 2019

### Switch

Status: **Complete** Original Trxn #: OTIDSW1100563427MHOST

Type	From	To	ERCOT Time Stamp ▲	Trxn Status	Key Date	Retry Status	Duplicate
814_01	ERCOTTEST_LSE_2	ERCOT	Aug 28, 2019 0132 PM	Accept			No
814_03	ERCOT	ERCOTTEST_TDSP	Aug 28, 2019 0132 PM	Accept	Aug 28 2019		No
814_04	ERCOTTEST_TDSP	ERCOT	Aug 28, 2019 0134 PM	Accept	Aug 28 2019		No
814_05	ERCOT	ERCOTTEST_LSE_2	Aug 28, 2019 0134 PM	Accept	Aug 28 2019		No
814_06	ERCOT	LSE	Aug 28, 2019 0135 PM	Accept	Aug 28 2019		No
867_04	ERCOTTEST_TDSP	ERCOTTEST_LSE_2	Aug 28, 2019 0137 PM	Accept			No

### Details: 814\_01

[Print Details](#)

From	REP2	To	ERCOT
DUNS #	111111112	DUNS #	183529049
Request Submitted	20190828	Service ZIP	78660
Trxn Ref #	OTIDSW1100563427MHOST	Action/Status	Request Addition
Orig Trxn Ref #		Special Switch Date	
TDSP Name		Billing Type	ESP
DUNS #		Bill Calc Code	DUAL
Request Type	Historical Interval Usage,	Special Needs?	N

### CUSTOMER INFORMATION

Contact Name	TRENT REZNOR
Phone	8005551212
Notification Name	NOTICE NAME
Address	728 PACMAN BLVD PFLUGERVILLE, TX 78660

Billing Name  
Address

CR



**What Happened?  
How Is It Fixed?**





MarkeTrak

MarkeTrak

Dashboards

General

My Dashboard

Reports

Folders

### General

Now showing Helpful Links 1 - 3 of 3

Link
Legal Disclaimer
MIS
MarkeTrak Documentation

Requery

RecentFavoritesBrowse

Search

Look In: Local Context

IAG

Customer Rescission

Inadvertent Gaining

Inadvertent Losing

Redirect Fees

Market Rule

Missing Enrollment TXNS

Other

Premi

Proje

See ERCOT courses on MarkeTrak





## Course Conclusion



### Pre-requisites

- ERCOT the ISO– WBT
- ERCOT the Market– WBT
- ERCOT the Retail Transaction Clearinghouse - WBT

### For more info, see ...

- TxSET – ILT
- MarkeTrak – WBT
- LSE 201 – ILT and WBT

Course Recommendations
PowerPoint - All Documents

ercot.com/services/training/recommendations

Apps
Bookmarks
Home - Trend Anal...
ERCOT
Information Reques...
658/659 Client Serv...
Data Request
WEBEX
ZOOM
SharePoint Home
Market Training - H...
SurveyMonkey
VTA Learner
RISC - VTA
WCM
Mkt notices

MIS LOG IN
Search

ercot

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

Home > Services > Training > Course Recommendations

## Course Recommendations

QSE

– Qualified Scheduling Entity

QSE-L

– Qualified Scheduling Entity Serving Load

QSE-R

– Qualified Scheduling Entity Serving Resources

RE

– Resource Entity

CR

– Competitive Retailer (Includes Retail Electric Provider and Opt-In)

NOIE

– Municipal or Cooperative Entity serving load

CRR

– Congestion Revenue Rights Account Holder

TDSP

– Transmission and/or Distribution Service Provider

### — Foundational Market Courses

	QSE	QSE-L	QSE-R	RE	CR	NOIE	CRR	TDSP
ERCOT Foundations   <a href="#">WBT</a>	✓	✓	✓	✓	✓	✓	✓	✓
Market Participant Relationships   <a href="#">WBT</a>	✓	✓	✓	✓	✓	✓	✓	✓
Locational Marginal Pricing   <a href="#">WBT</a>	✓	✓	✓	✓	✓	✓	✓	✓

- ERCOT Client Services  
[Clientservices@ercot.com](mailto:Clientservices@ercot.com)
- ERCOT Mailing Lists  
<http://lists.ercot.com/>
- ERCOT Nodal Market Protocols  
<http://www.ercot.com/mktrules/nprotocols/>
- ERCOT Training  
<http://www.ercot.com/services/training/>
- Market Education Contact  
[Training@ercot.com](mailto:Training@ercot.com)



*Scan this QR code to take the course survey!*

<https://www.surveymonkey.com/r/ERCOTILT>

