



KYMEA – “Go Live” May 1, 2019

Doug Buresh

April 24, 2019

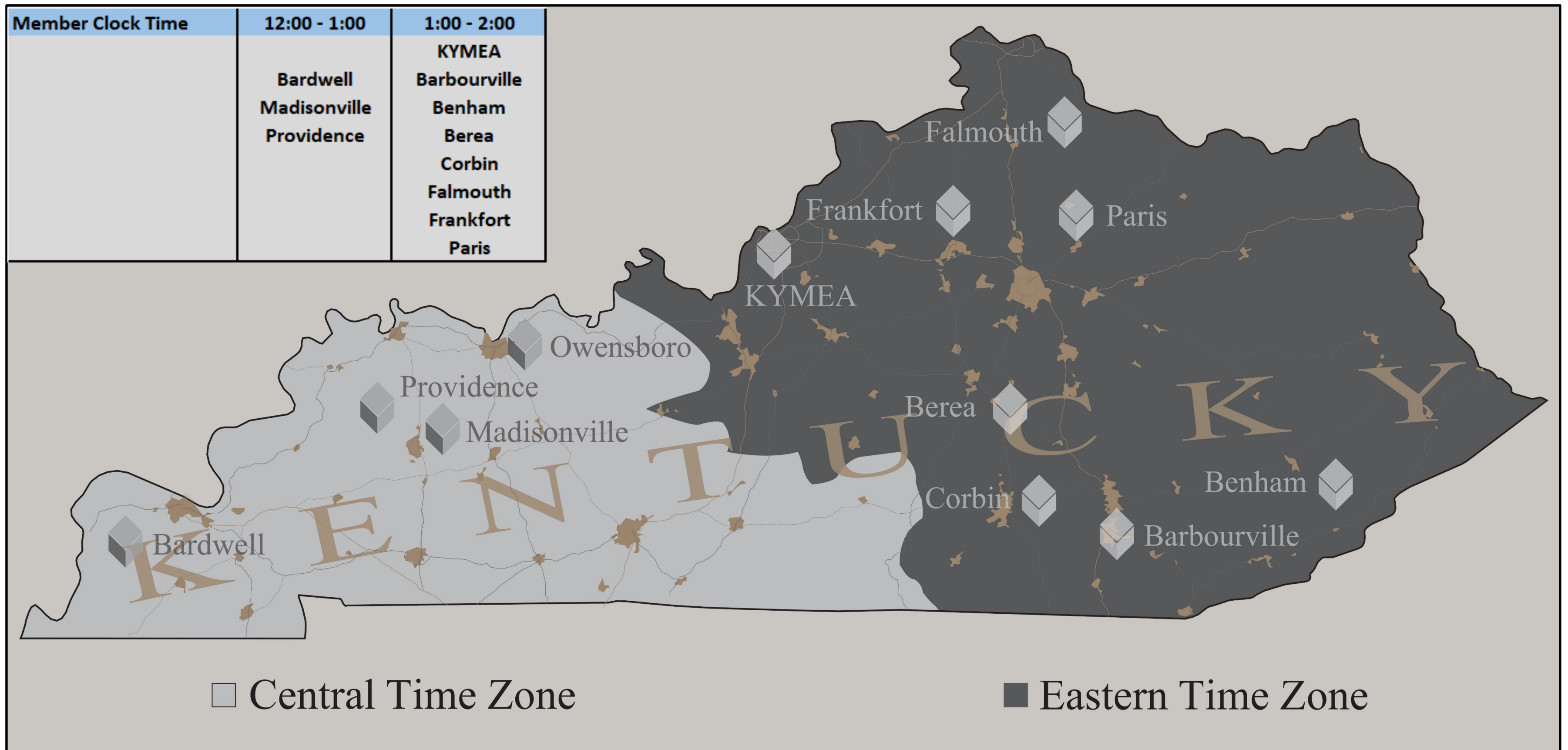
PPA Preparation Operations Meetings

- ◆ PPA Scheduling, Settlement, Contract Details
 - Participants: KYMEA Staff, nFront, ACES
- ◆ PPA Start Date: May 1, 2019
 - PPS: (Paducah Peakers) - April 10th On-Site Meeting
 - BREC: (Wilson Coal) - April 11th On-Site Meeting
 - Paris: (Diesels) - April 18th On-Site Meeting
 - SEPA: (Hydro) - April 16th Conference Call
- ◆ PPA Start Date: June 1, 2019
 - IPMC: (Joppa Coal) - April 10th On-Site Meeting

Scheduling Preparation

- ◆ Metering, Load Forecasting, Scheduling, Tagging
 - Participants: KYMEA Staff, ACES, Schneider, P&D Engineering, Strategic Communications, LG&E/KU Transmission, AMP, MISO, PJM, NewGen Strategies, ITRON, Rubin & Hays
- ◆ Load Forecasting and Data Transfer
- ◆ Daily Strategy and Dummy Tags
- ◆ Enabling Agreements
- ◆ Risk Management

KYMEA - Day 1 Go Live Time

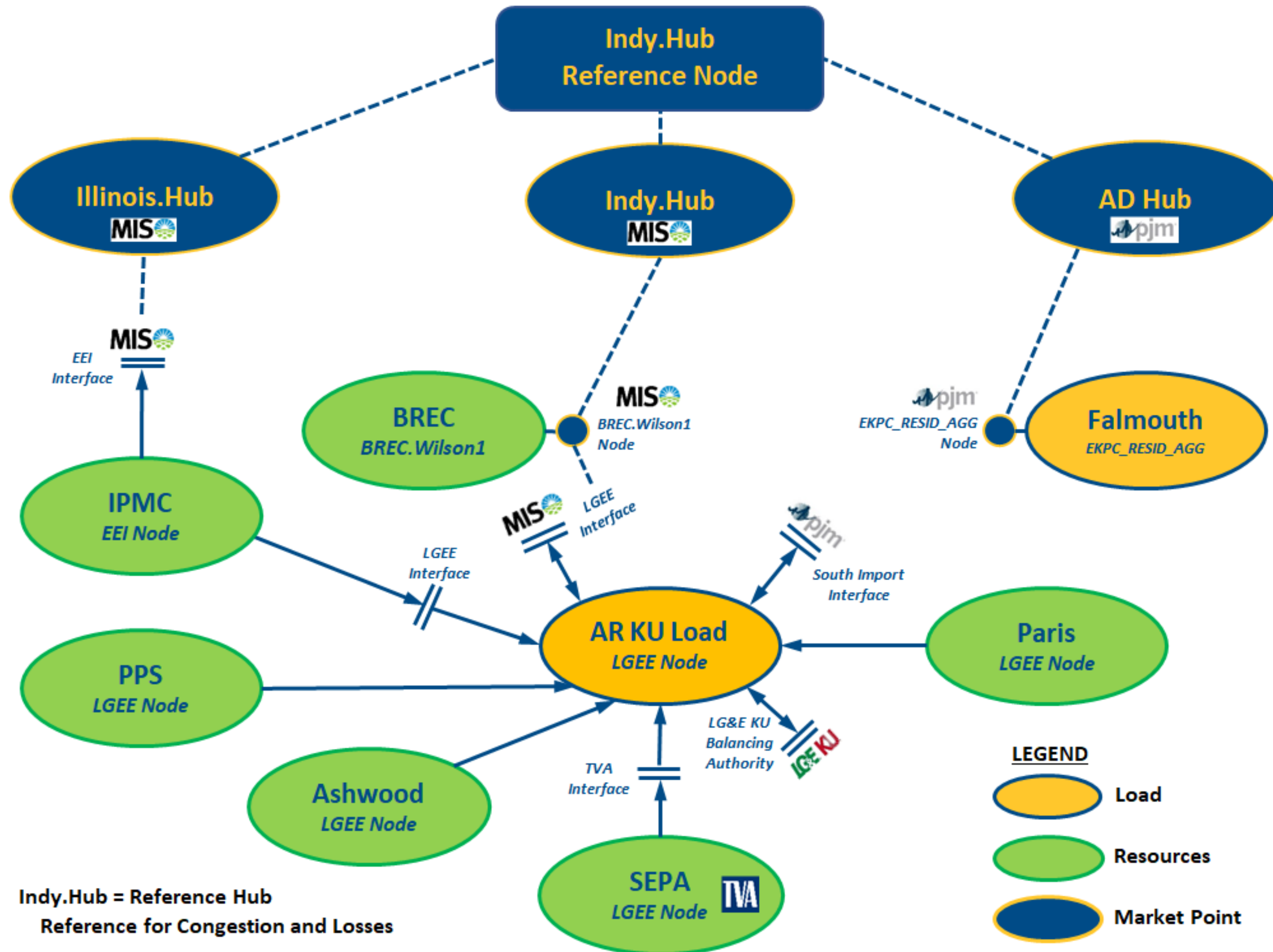


LG&E/KU provides service until HE 1 on May 1st (*Equivalent to HE 24 on April 30th - EST*)

Note: LG&E/KU stays on EST year-round.

KYMEA Power Network

Resources, Loads, and Nodes



KYMEA - Day 1

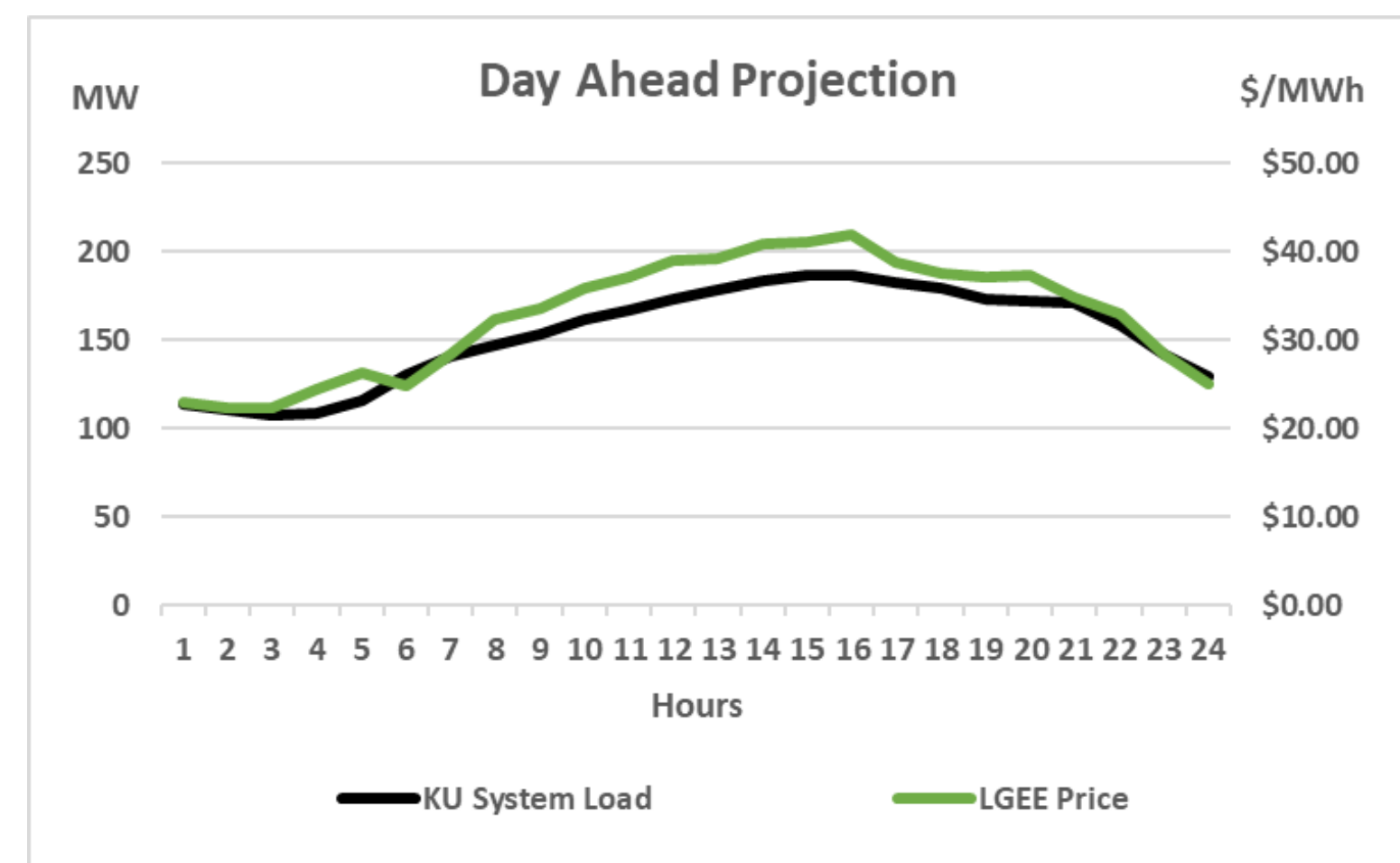
Daily Operations and Load Forecasting

Load Forecast

- Historical pattern, temperature, season, day of week, humidity, wind speed, etc.

Market Price Forecast

- Hourly price signal at a number of price points (MISO-LGEE, PJM-EKPC_RESID_AGG, MISO-BREC.WILSON1, MISO-EEI, PJM-SOUTHIMP, PJM-SOUTHEXP, etc.)



Current Day (April 30th)

Next Day (May 1st)

April 25, 2019 (Thursday)

- SEPA - 7 Day Projection to TVA
- Load Forecast – 7 Day Projection to LG&E/KU

Day Ahead Activities

April 30th



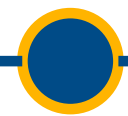
7:00



Creation of Next Day Position Workbook

1. Retrieve KYMEA/AMP load forecasts, internal next day price forecasts for MISO:LGEE & EEI interfaces, INHub, BREC.WILSON1, ADHub, EKPC_RESID_AGG
2. Transmit file to LGEE BA containing data for: 14 Days Hourly load forecasts, 37 Days Daily peak loads, 5 weeks Weekly peak loads, 19 months Monthly peak loads
3. Gather market intelligence from visible ICE market activity for INHub/ADHub, NYMEX prompt gas, TetcoM3 physical gas
4. Submit Demand bid for Falmouth load to PJM Markets Gateway portal
5. Transmit updated load forecast information to KYMEA

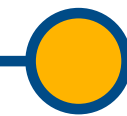
7:30



Notification/Optimization

1. Receive notification from PPA counterparties of next day resource availability
2. Evaluate optimal strikes of PPA contracts/Economic purchases based on pricing/load forecast, resource availability and market intelligence, to cover next day load position
3. Transmit required notification of next day strike hours/MW volume to PPA counterparties

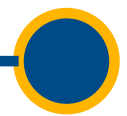
8:00



Scheduling

1. Purchase/redirection of transmission capacity (if required)
2. Creation of next day OATI e-tags
3. Creation of Initial Day-Ahead MISO Finschedules
4. Capture of transactional data in ACES risk management/deal capture system

8:30



Daily Actions including but not limited to:

Respecting MISO timeline requirements:

1. Adjust DA MISO Finschedules for Next Day if applicable
2. Creation of RT MISO Finschedules based on adjustments of DA Finschedules if applicable
3. Transmit next-day position/operational information to KYMEA

“Dummy” Tag Tests

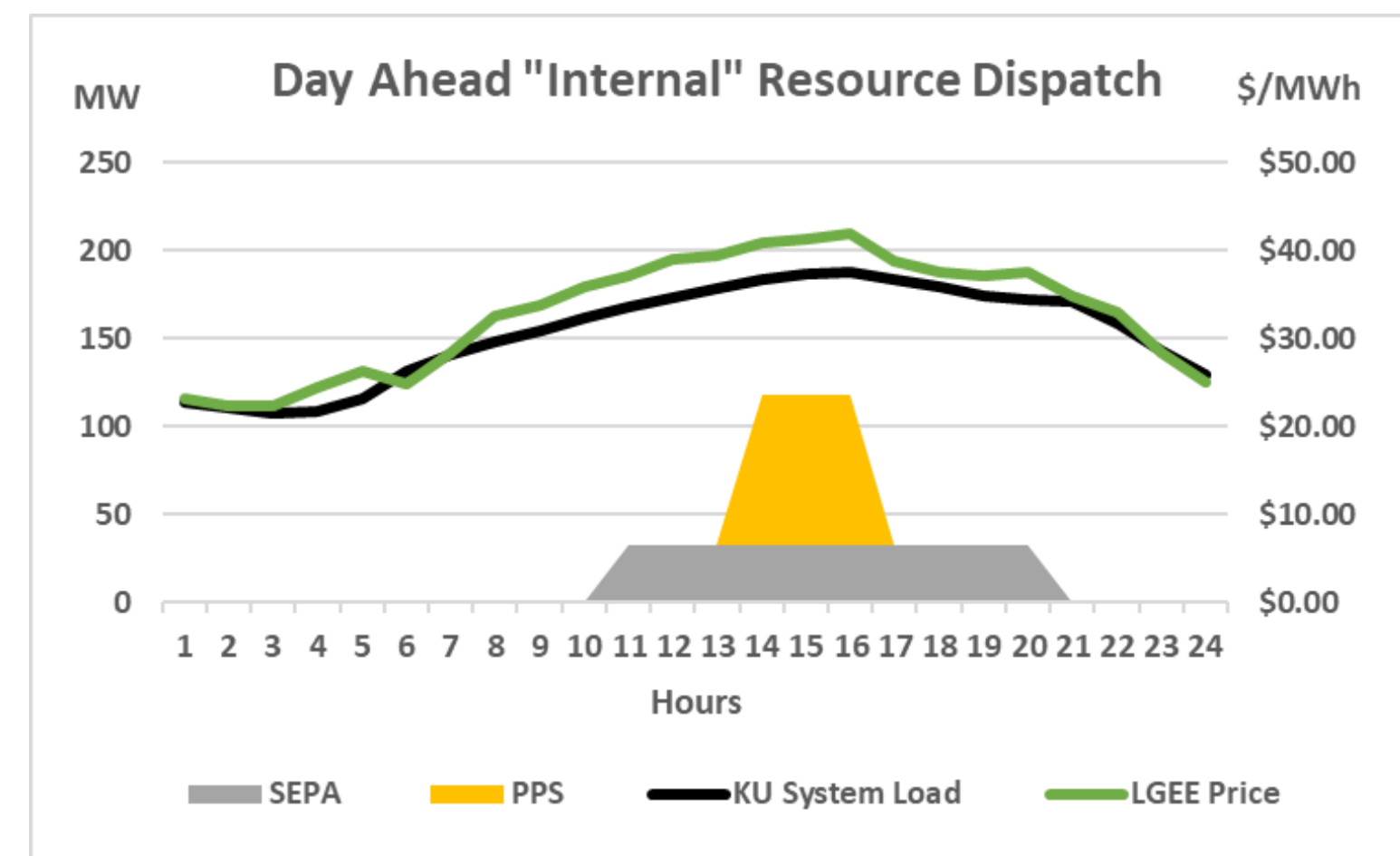
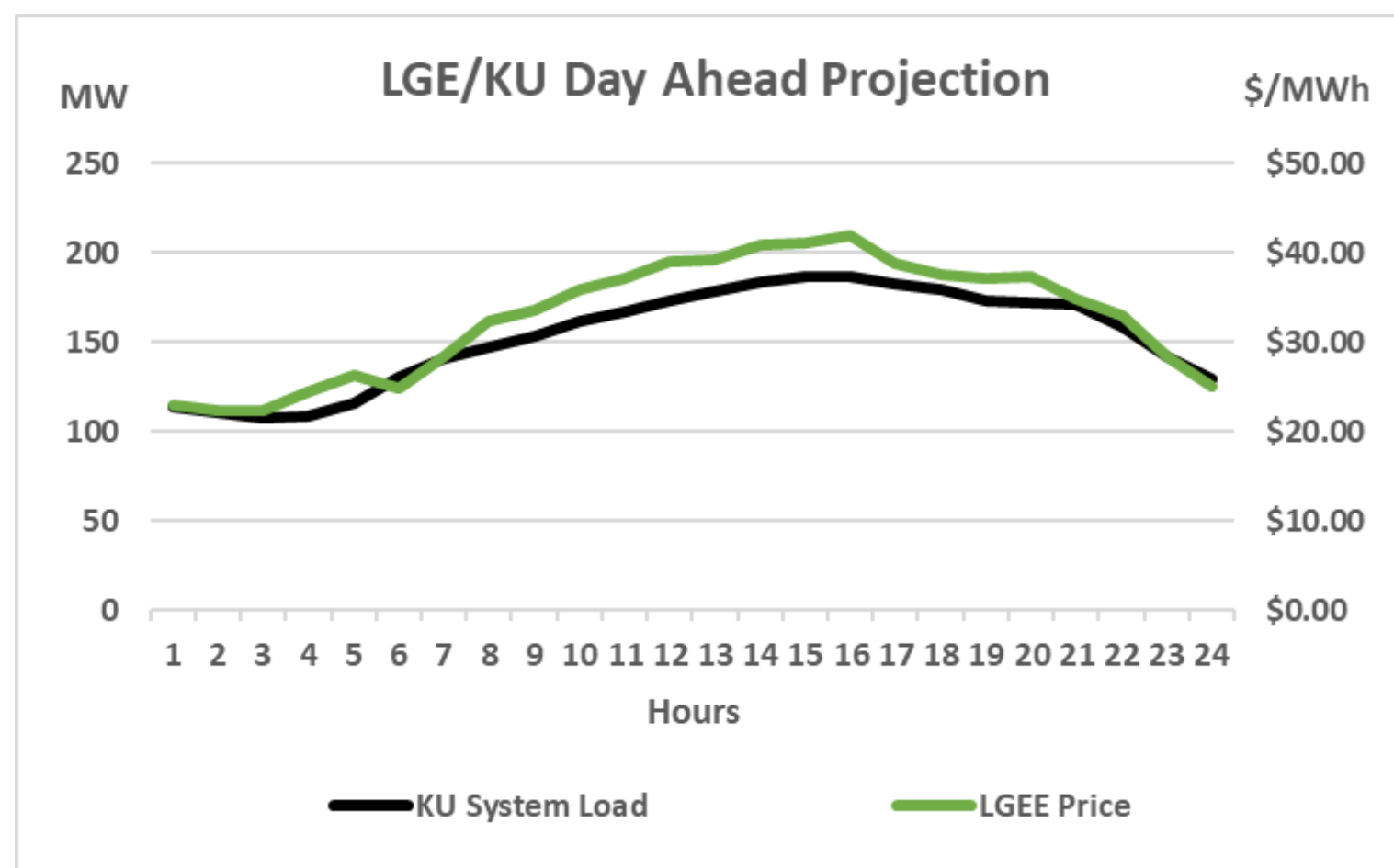
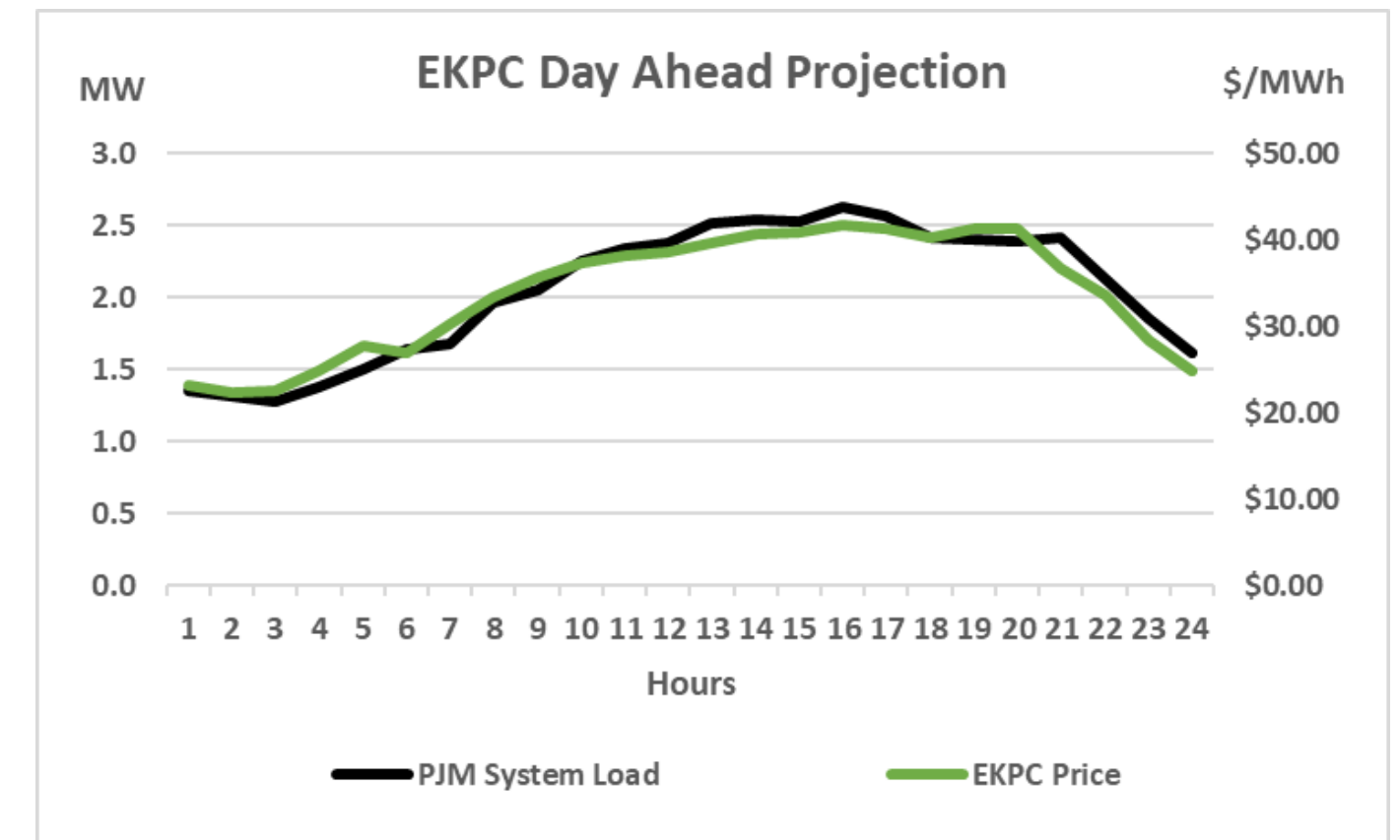
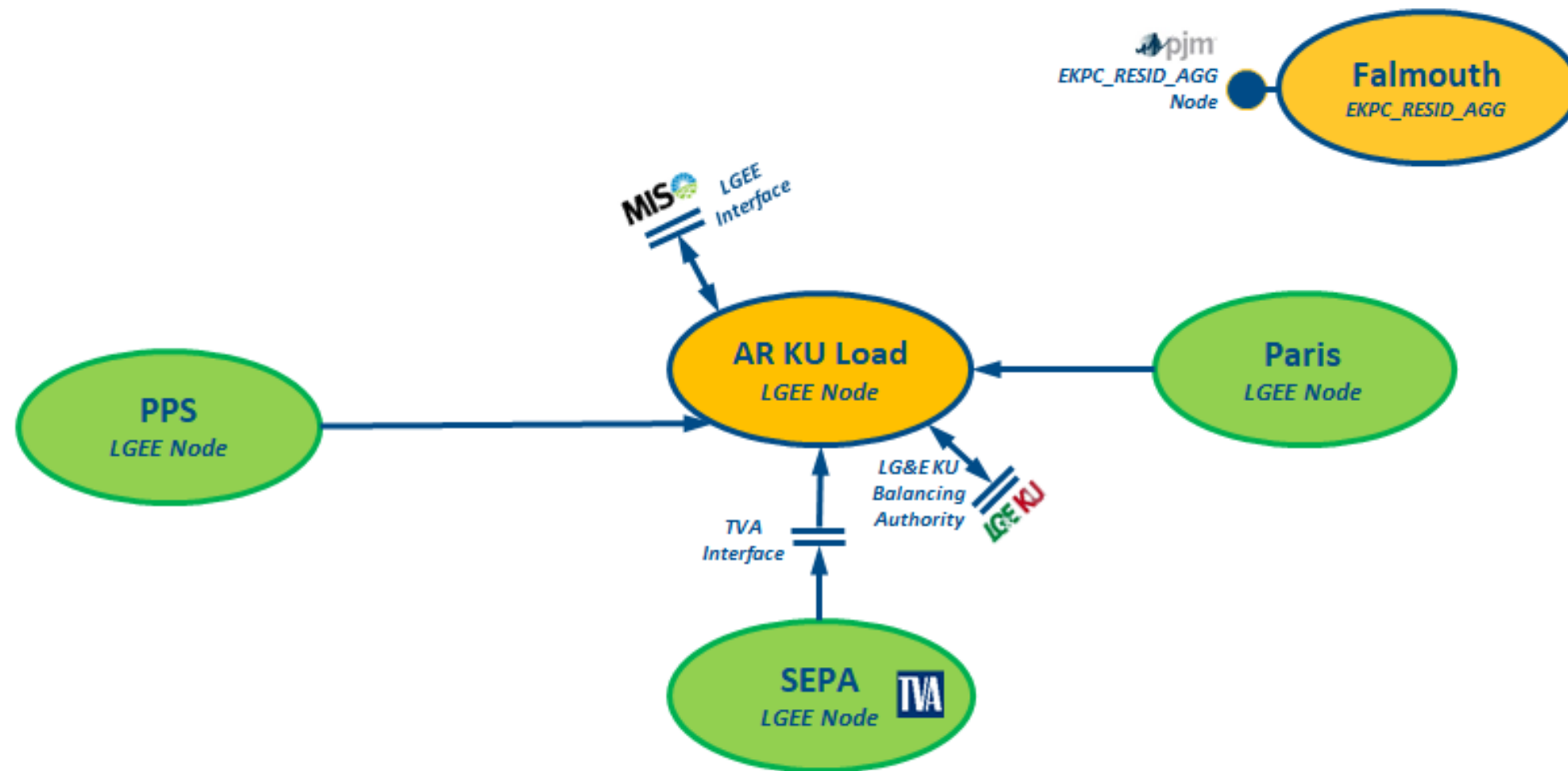
April 23th



<div> Dashboard Request Summary Template Summary </div> <div> Request Summary </div> <div> (All times are in EST) </div>																	
<div> Filtered By: PSE: KYMEA Data Source: Operational Database Time - Active Next Day Forward: 04/24/2019 - 01/01/3000 </div>																	
<div> <div> GCA: ALL LCA: ALL CPSE: ALL Tag Code: POR/POD: Time: Active Next Day Forward 04/24/2019 01/01/3000 </div> <div> CA: ALL TP: ALL PSE: KYMEA Tag Index: OASIS #: Status: ALL Apply Reset To Default </div> </div>																	
Tag Data							Request Data			Status of Approvers							
Tag Code	Owner	PSE Comment	Start Time	Stop Time	Tag	Final MW...	Req Type	Req Status	Timing	GPE	GCA	LCA	LSE	TSPs	Sched Entities	TX Cust	
TESTKYM	KYMEA	WILSON to KYMEA	05-09 00:00	05-10 00:00		0	Cancellation	APPROVED	DA/On time	MISO	MISO	LGEE		MISO	LGEE	MISO	LGEE
							Creation	APPROVED	DA/On time	MISO	MISO	LGEE		MISO	LGEE	MISO	LGEE
KYPARIS	KYMEA	Paris Peaking	05-09 00:00	05-10 00:00		0	Cancellation	APPROVED	DA/On time		LGEE	LGEE		LGEE	LGEE		
							Creation	APPROVED	DA/On time		LGEE	LGEE		LGEE	LGEE		
KYPADUC	KYMEA	Paducah Peaking	05-09 00:00	05-10 00:00		0	Cancellation	APPROVED	DA/On time		LGEE	LGEE		LGEE	LGEE		
							Correction	APPROVED	DA/On time		LGEE	LGEE		LGEE	LGEE		
							Creation	APPROVED	DA/On time		LGEE	LGEE		LGEE	LGEE		
KYJOPPA	KYMEA	JOPPA to KYMEA	05-09 00:00	05-10 00:00		0	Cancellation	APPROVED	DA/On time	EEI	EEI	LGEE		LGEE	LGEE		
							Creation	APPROVED	DA/On time	EEI	EEI	LGEE		LGEE	LGEE		
THA8960	TEA01		04-24 00:00	04-25 00:00		128	Creation	APPROVED	DA/On time	MISO	MISO	LGEE		MISO	LGEE	MISO	LGEE

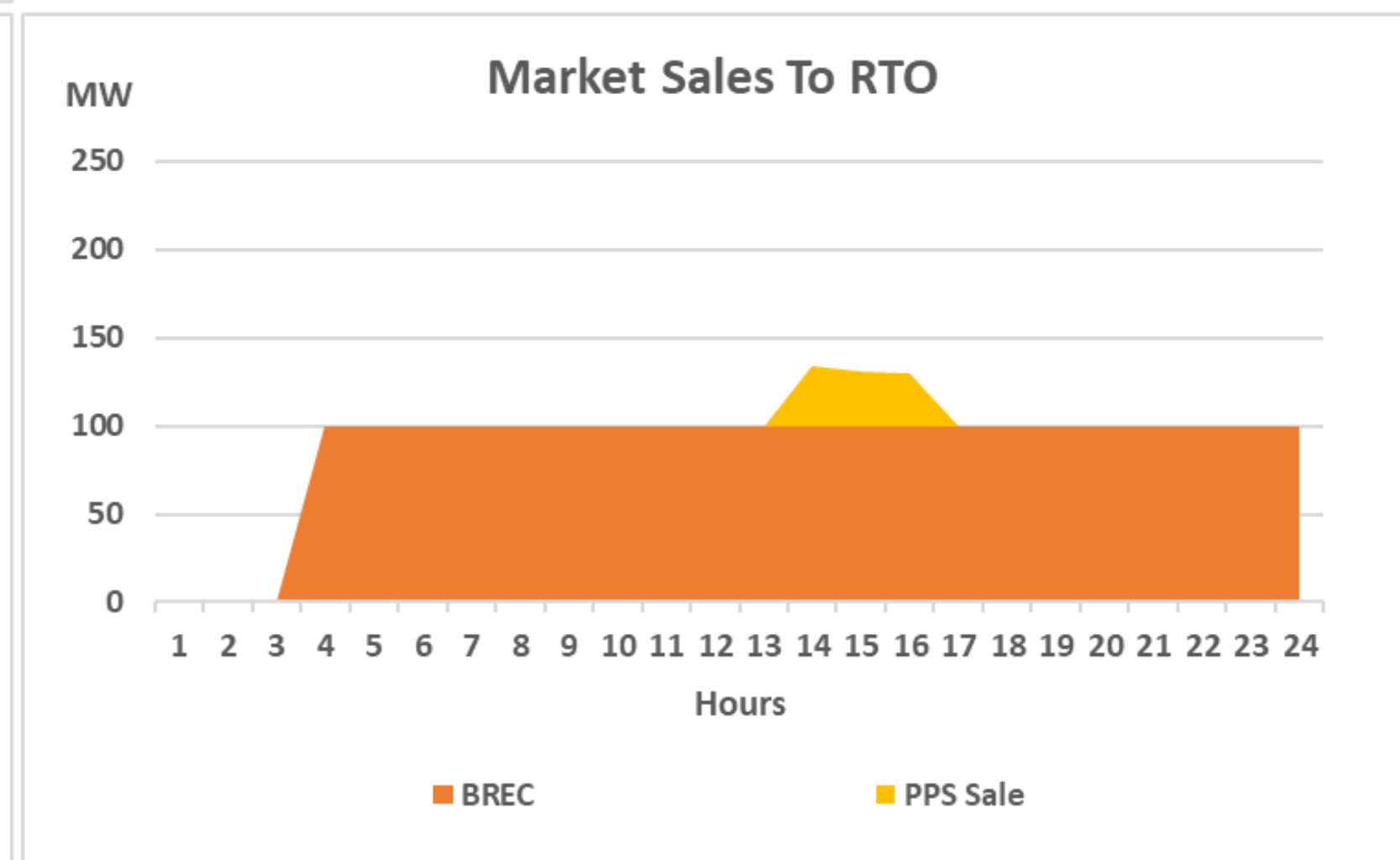
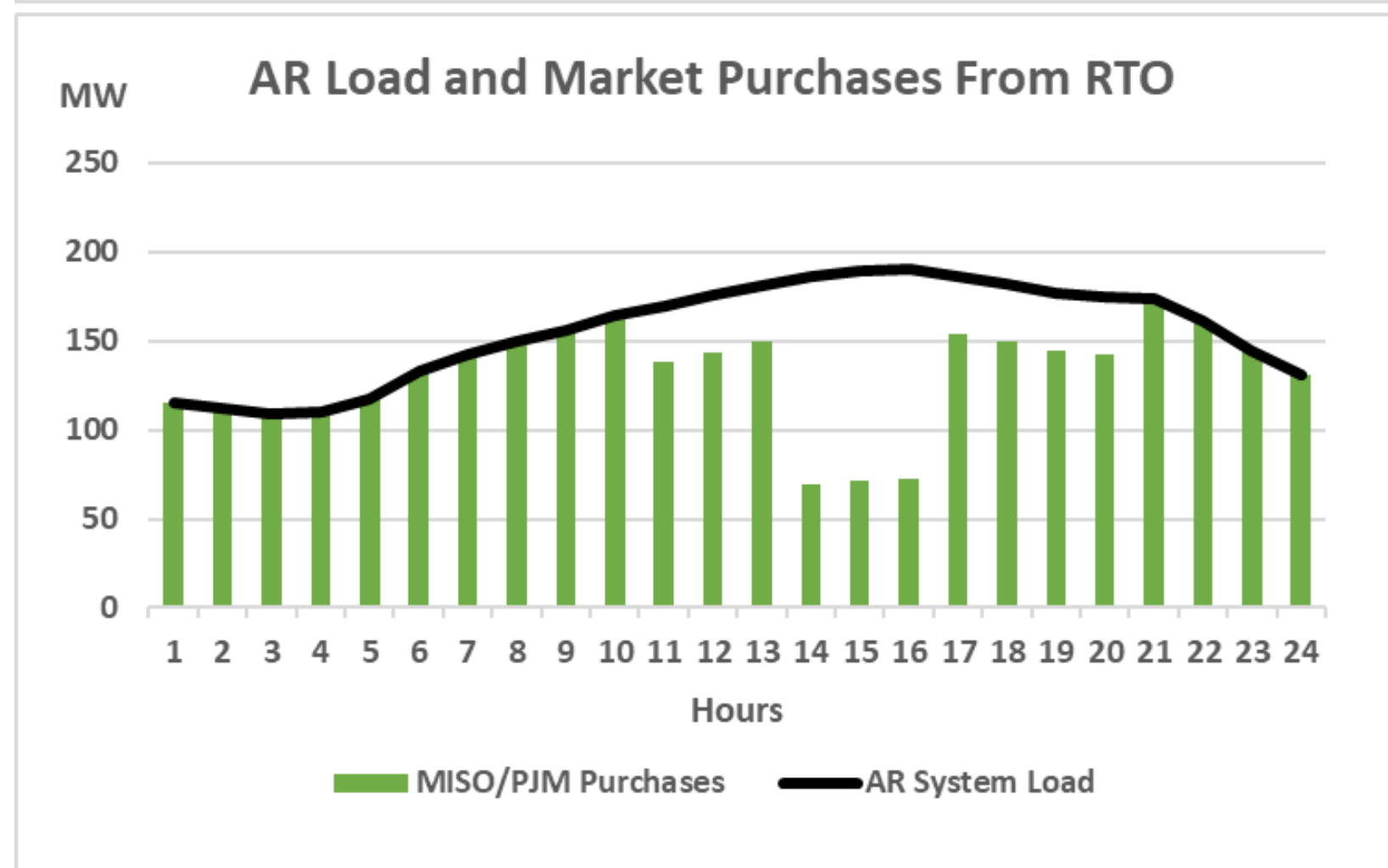
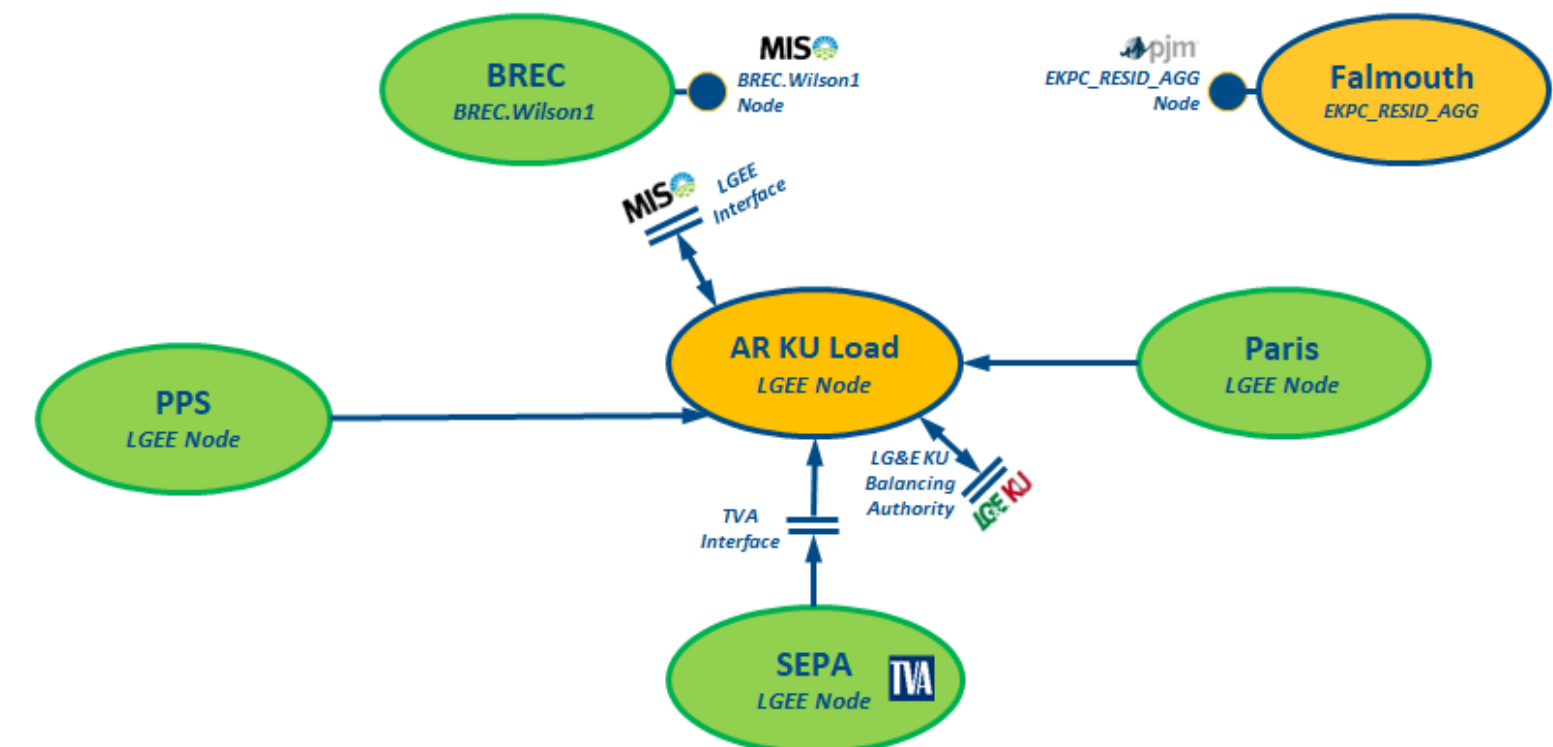
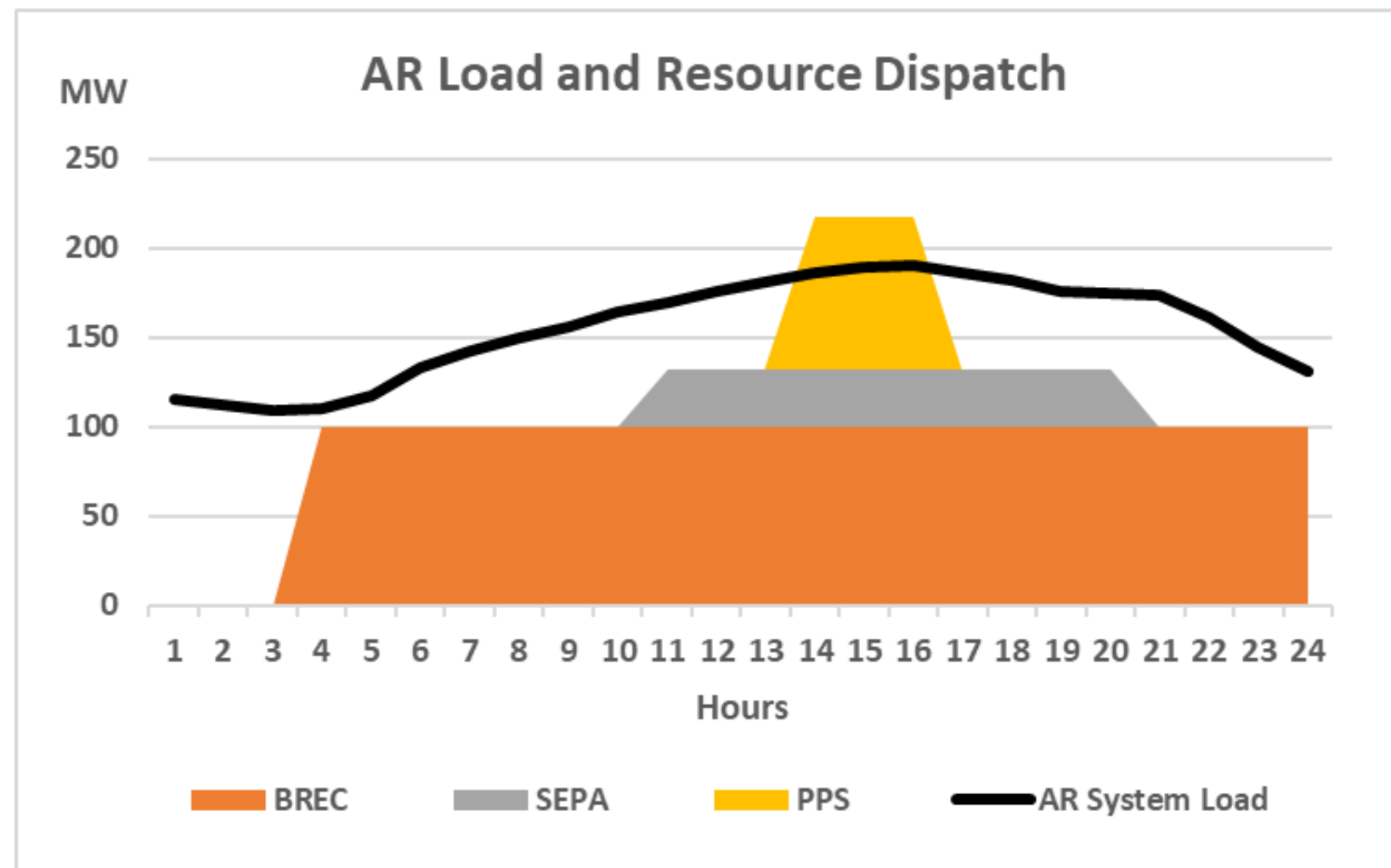
All Requirements System Requirements

“LG&E/KU Internal” Resources, Loads, Prices



Energy Accounting

Dispatch, RTO Purchases, RTO Sales



Real Time Activities

May 1st

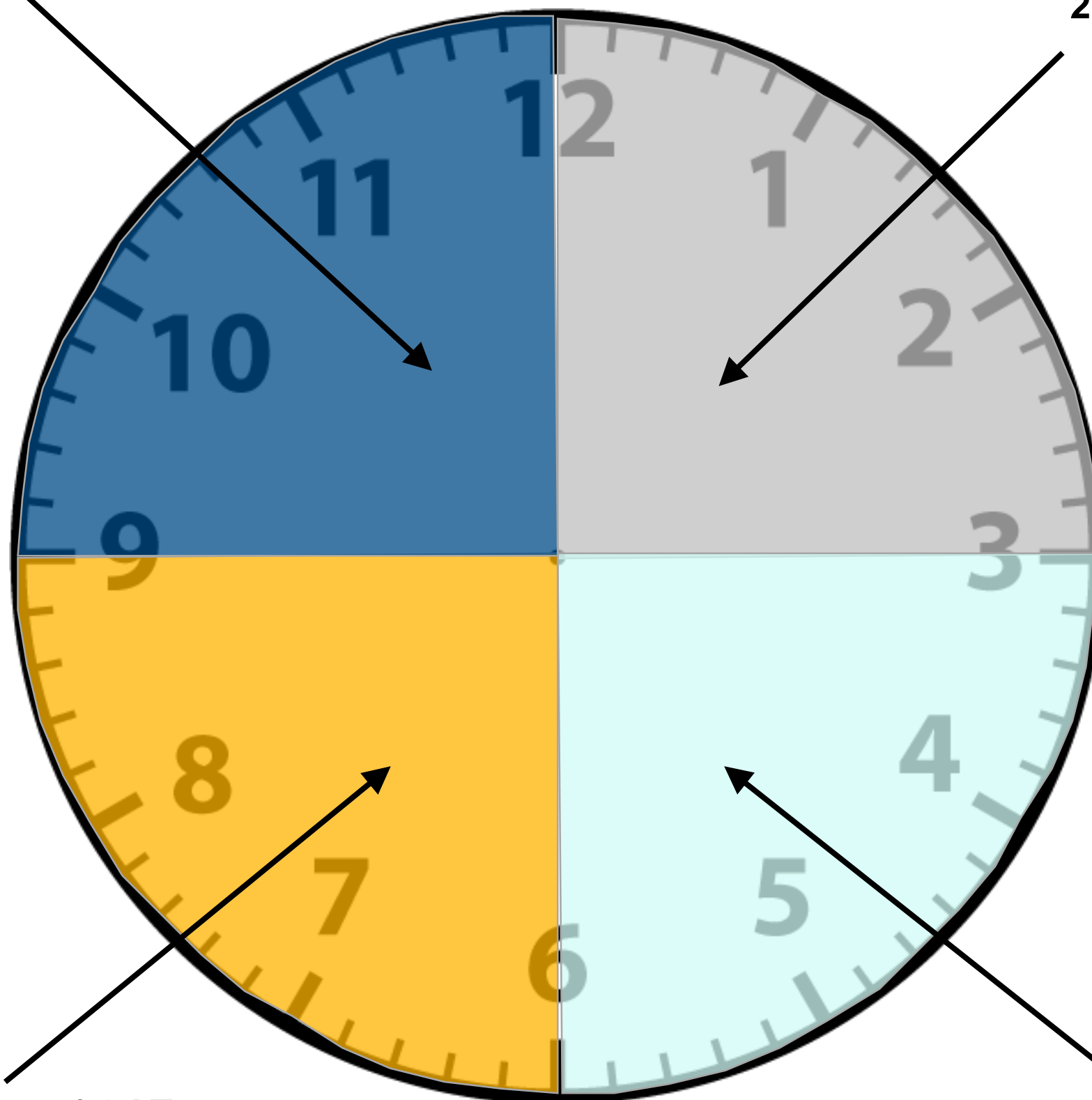


6. Retrieve intra-hour 5min load data

Every Hour

1. Retrieve previous hour actual load data

2. Retrieve current next hour forecast



Daily Actions including but not limited to:

1. Adjust DA MISO Finschedules for Next Day if applicable
2. Creation of RT MISO Finschedules based on adjustments of DA Finschedules if applicable
3. Transmit updated load forecast data to LGEE BA as applicable (frequency TBD)
4. Transmit updated load forecast/schedule adjustments to KYMEA as applicable

5. Adjustment of OATI tags for next hour if required to follow actual loads

3. Retrieve intra-hour 5min load data

4. Comparison of actual load tracking to forecast

Board Action

- ◆ KYMEA MAC will be staffed all-day April 30th through early morning May 1st
 - KYMEA Staff, ACES, nFront, Strategic Communications, etc.
- ◆ Authorize KYMEA CEO and Officers to do all things necessary to accomplish successful “Go Live” launch