# Investigate benefit of splitting the On-Peak TOU

CAISO Initiative Catalog Meeting/Conference Call
April 22nd, 2024

Presented by Daniel Cretu

# Proposal

- Establish dual on-peak TOU defined by the following:
  - Super-Peak (HE17 to HE21)
  - On-Peak (HE07 to HE16)
  - Seasonally, intervals might change slightly (RA model)

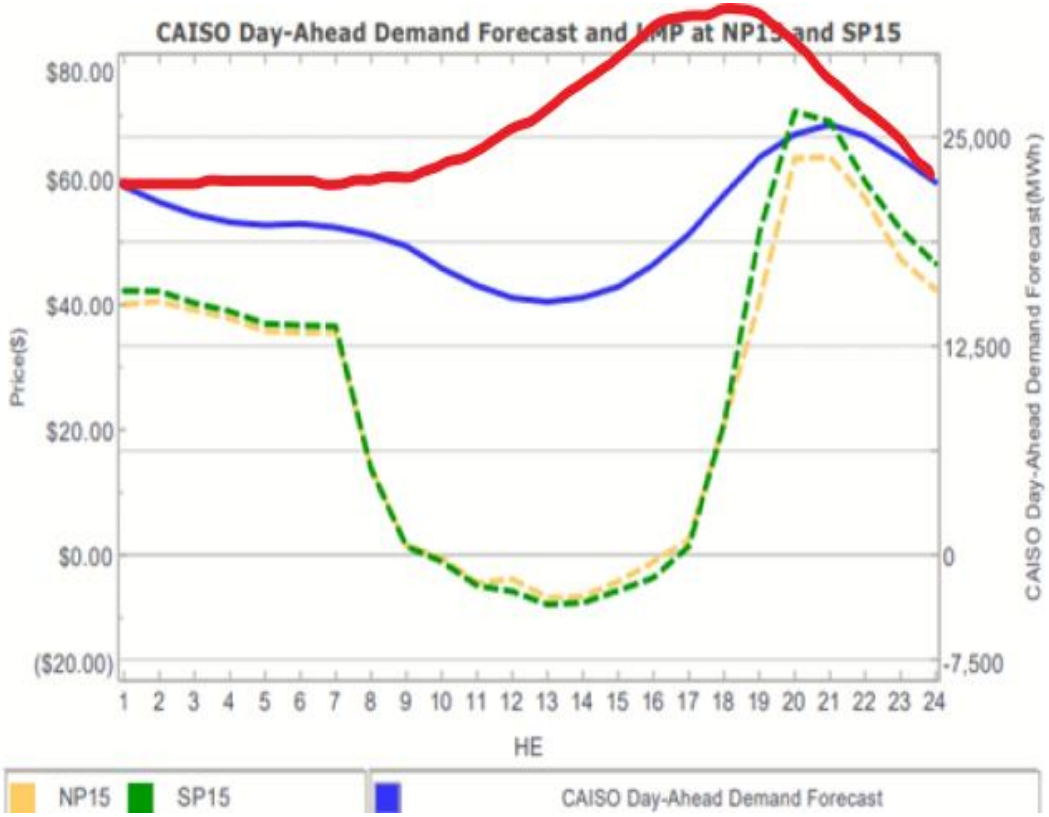
- Benefits
  - Provide transparent and predictable CRR revenue
  - Create an equitable CRR market

# On-Peak CRR revenues prior to implementation of the solar generation

The current CRR design defining On-Peak and Off-Peak TOUs, was implemented in April 2009.

Limited Solar based renewable generation resulted in the following:

- Similar load and LMP pricing shaped curves show by the Red line.
- During the On-Peak TOU, the CRR is single directional (from the CAISO generator to the CAISO load, or from adjacent BAA to CAISO as



# Today's load duration curve and pricing

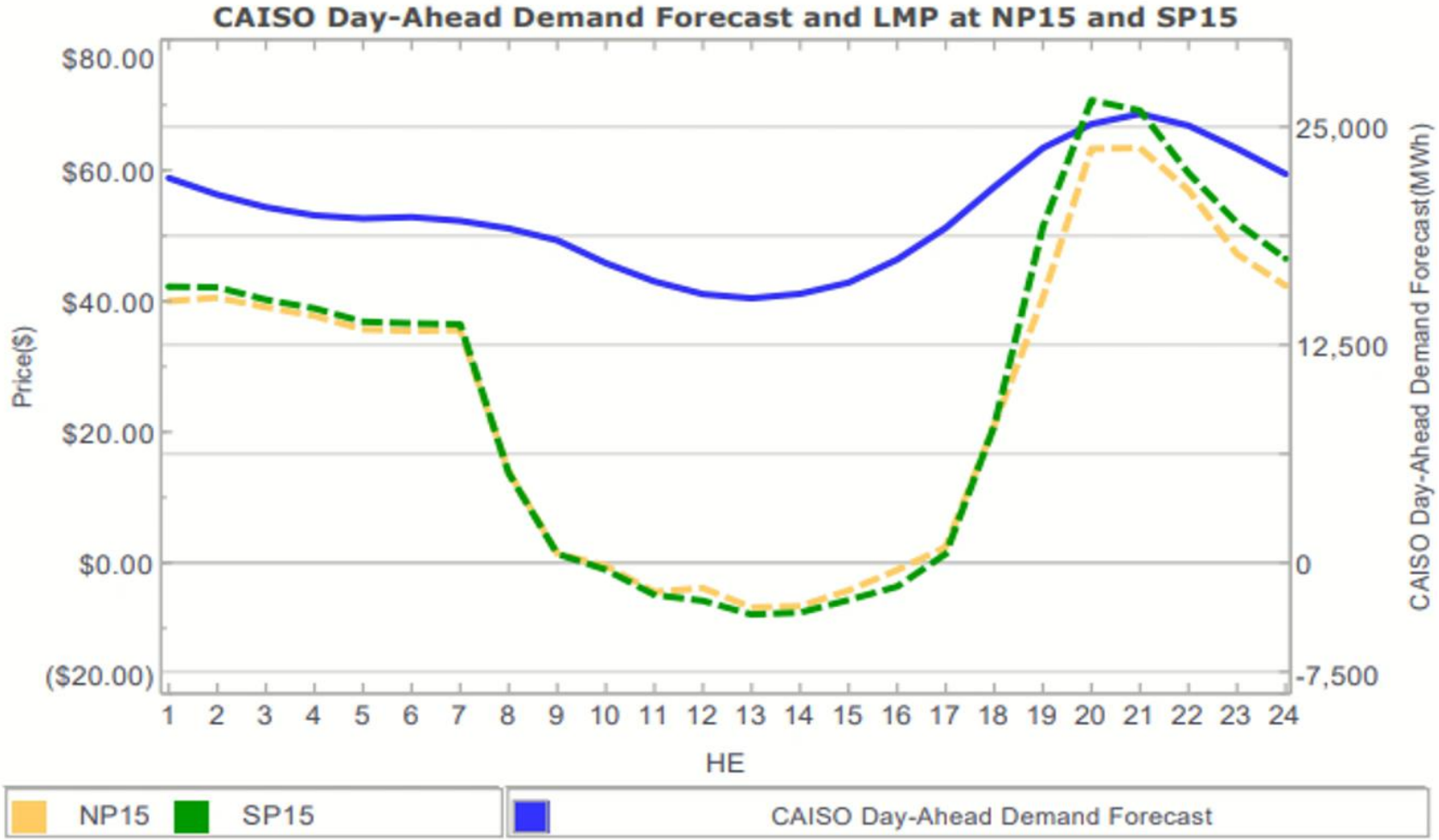
Is influenced by added solar generation due to various state mandates. During the On-Peak TOU, the CRR are changing direction

1. HE07 to HE16 congestion is from the solar generators to the CAISO load, and from the CAISO to the adjacent BAA (exports of excess solar gen)
2. HE17 to HE20 the congestion changes direction from natural gas peakers to CAISO load, or from adjacent BAA to CAISO (imports)

# Illustration of Demand and Price Curves

- The following slide will show
- Impact of past 12 months Solar Generation
- Data period 4/2023 to 4/2024
- Showing characteristics of dual daily peaking for the demand and price curves

# Video Presenting the shape of the CAISO DA Demand Forecast and THs April 2023-April 2024 (by weekly data)



# CDWR proposal

CDWR proposes splitting the current On-Peak (HE07 to HE22) into the following,

- Regular On-Peak, from HE07 to HE16, and HE21-HE22, and
- Super-Peak, from HE17 to HE20

And investigate transparency and stability impact to the CRR product.

# Questions???

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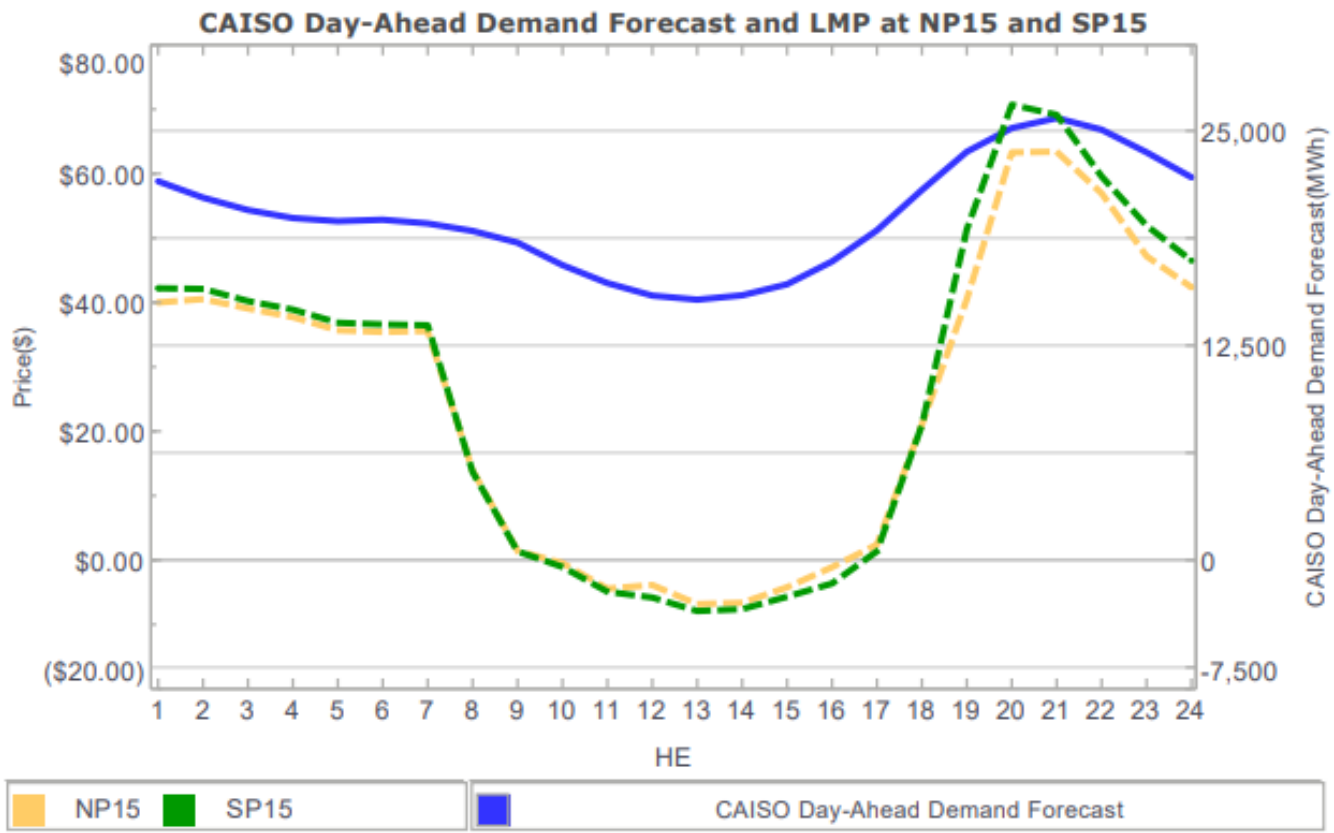
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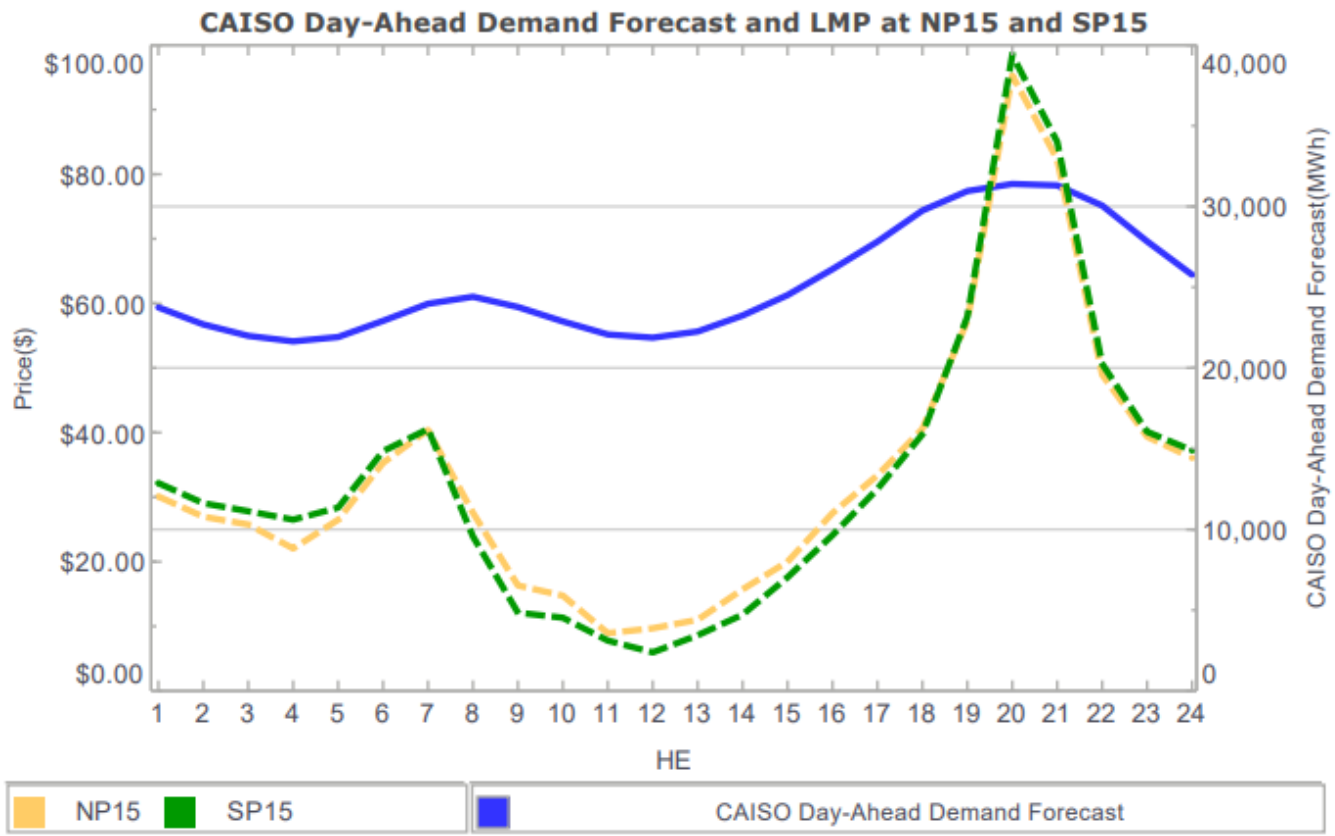
$80.00
$60.00
$40.00
$20.00
$0.00
($20.00)
Price($)
25,000
12,500
0
-7,500
CAISO Day-Ahead Demand Forecast(MWh)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
HE
NP15
SP15
CAISO Day-Ahead Demand Forecast


CAISO Day-Ahead Demand Forecast and LMP at NP15 and SP15
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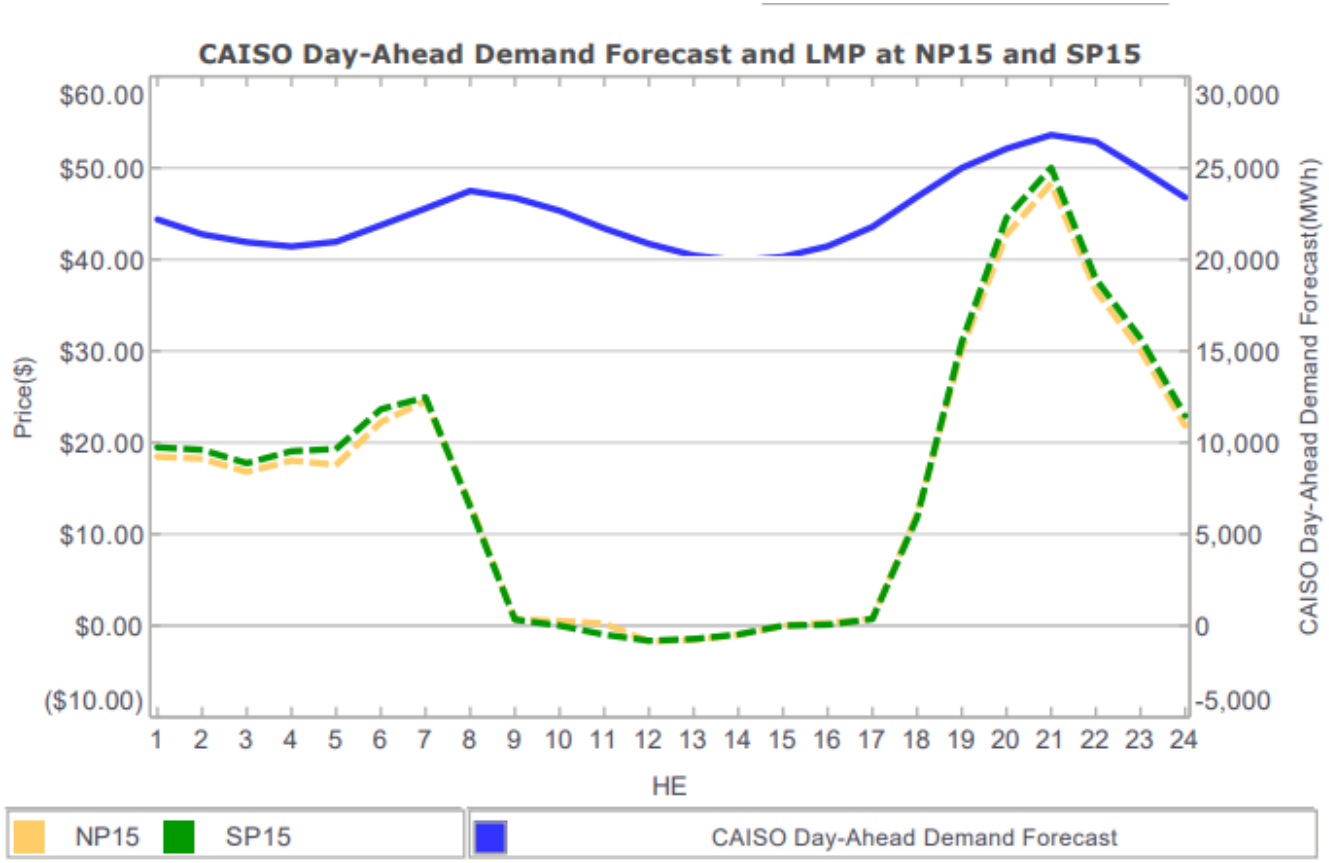
$80.00
$60.00
$40.00
$20.00
$0.00
Price($)
40,000
30,000
20,000
10,000
0
CAISO Day-Ahead Demand Forecast(MWh)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
HE
NP15
SP15
CAISO Day-Ahead Demand Forecast


CAISO Day-Ahead Demand Forecast and LMP at NP15 and SP15
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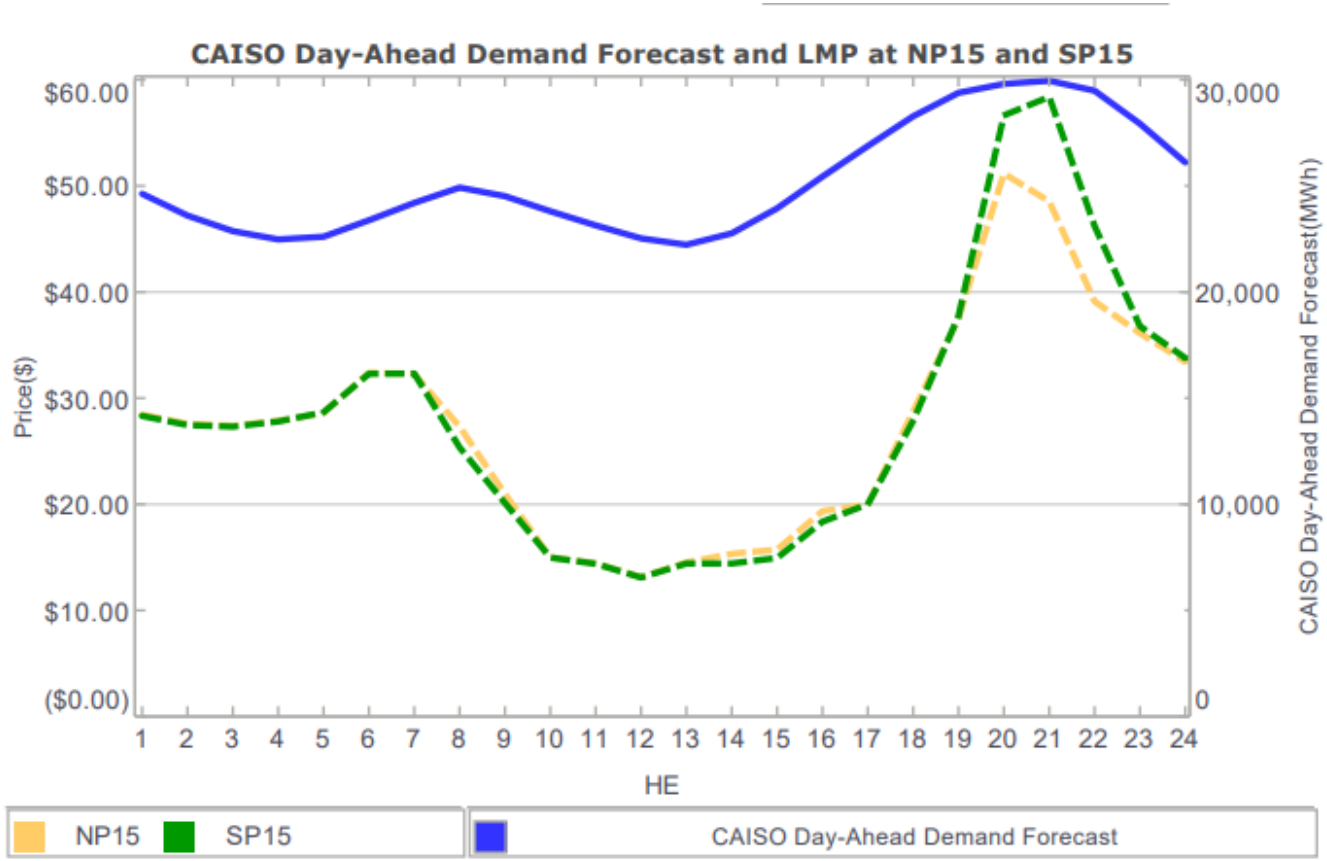
$50.00
$40.00
$30.00
$20.00
$10.00
$0.00
($10.00)
Price($)
30,000
25,000
20,000
15,000
10,000
5,000
0
-5,000
CAISO Day-Ahead Demand Forecast(MWh)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
HE
NP15
SP15
CAISO Day-Ahead Demand Forecast


CAISO Day-Ahead Demand Forecast and LMP at NP15 and SP15
$60.00
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$40.00
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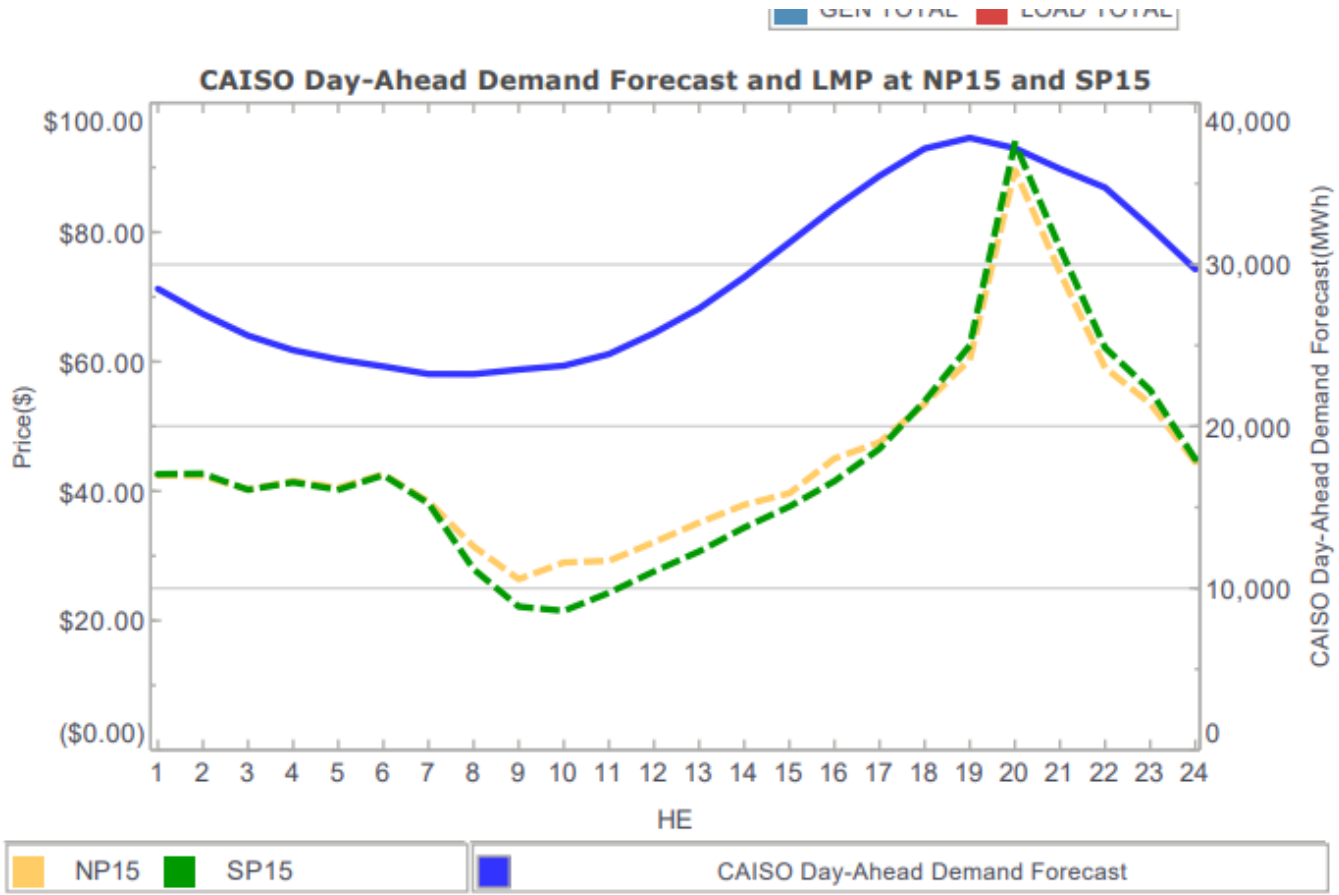
$10.00
($0.00)
Price($)
30,000
20,000
10,000
0
CAISO Day-Ahead Demand Forecast(MWh)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
HE
NP15
SP15
CAISO Day-Ahead Demand Forecast


GEN TOTAL
LOAD TOTAL
CAISO Day-Ahead Demand Forecast and LMP at NP15 and SP15
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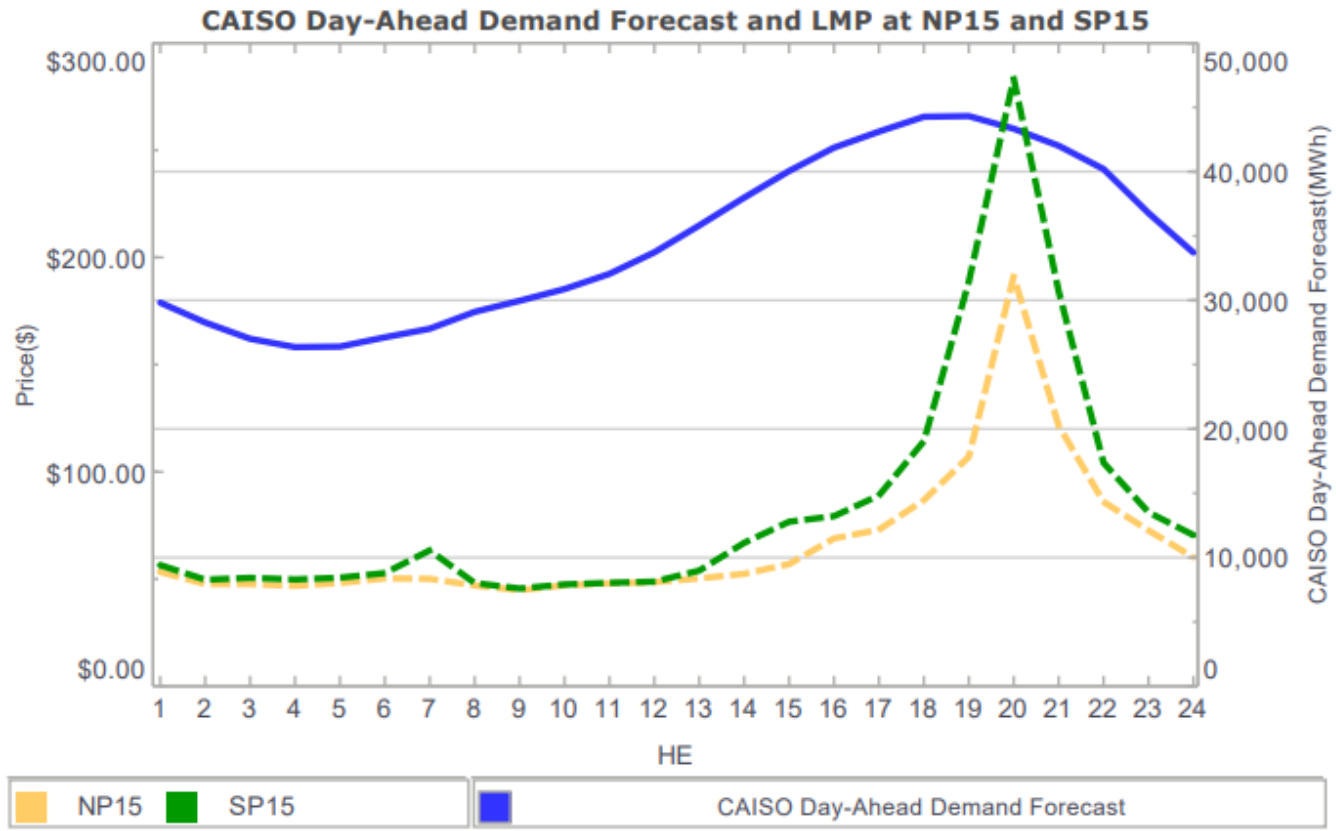
$60.00
$40.00
$20.00
($0.00)
Price($)
40,000
30,000
20,000
10,000
0
CAISO Day-Ahead Demand Forecast(MWh)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
HE
NP15
SP15
CAISO Day-Ahead Demand Forecast


CAISO Day-Ahead Demand Forecast and LMP at NP15 and SP15
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Price($)
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40,000
30,000
20,000
10,000
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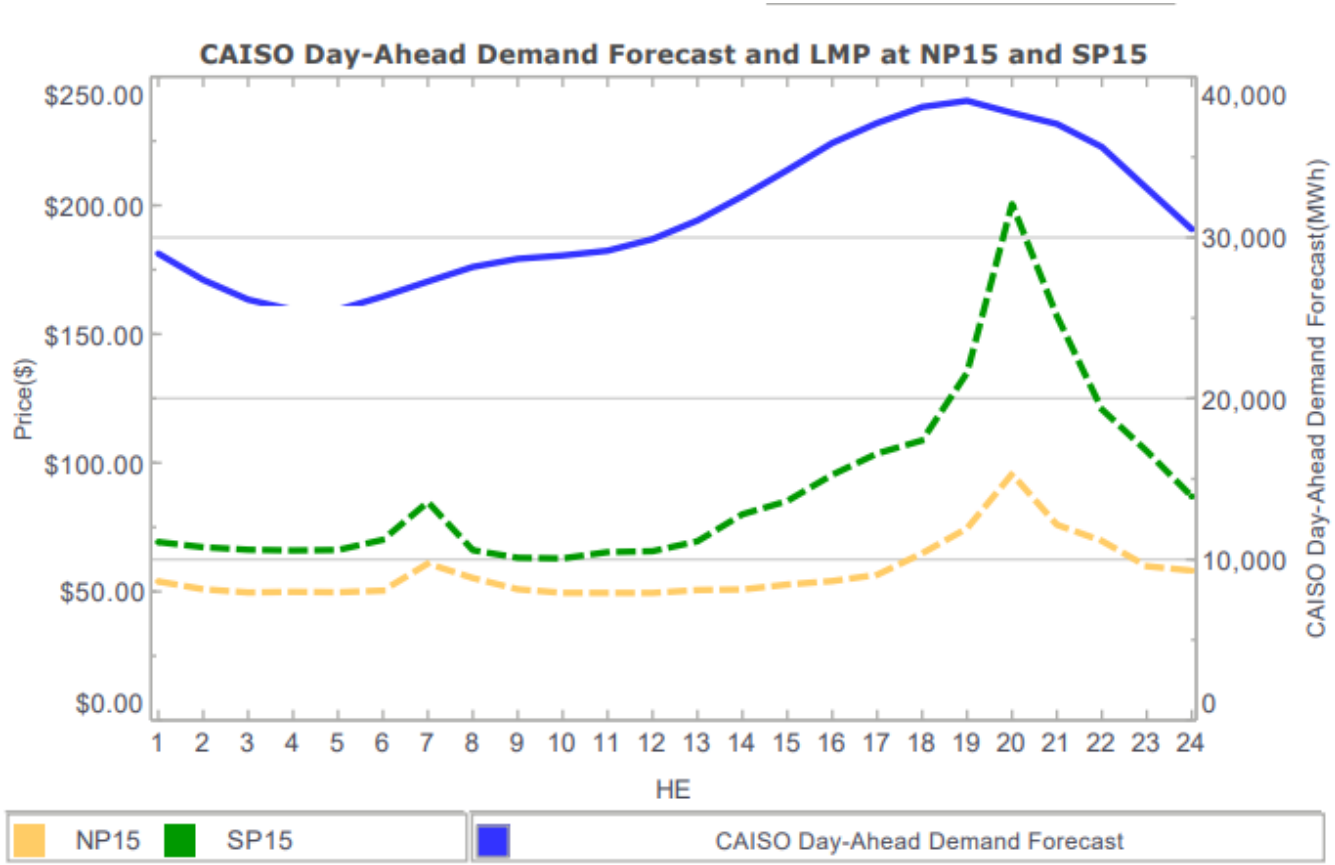
CAISO Day-Ahead Demand Forecast(MWh)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
HE
NP15
SP15
CAISO Day-Ahead Demand Forecast


CAISO Day-Ahead Demand Forecast and LMP at NP15 and SP15
$250.00
$200.00
$150.00
$100.00
$50.00
$0.00
Price($)
40,000
30,000
20,000
10,000
0
CAISO Day-Ahead Demand Forecast(MWh)
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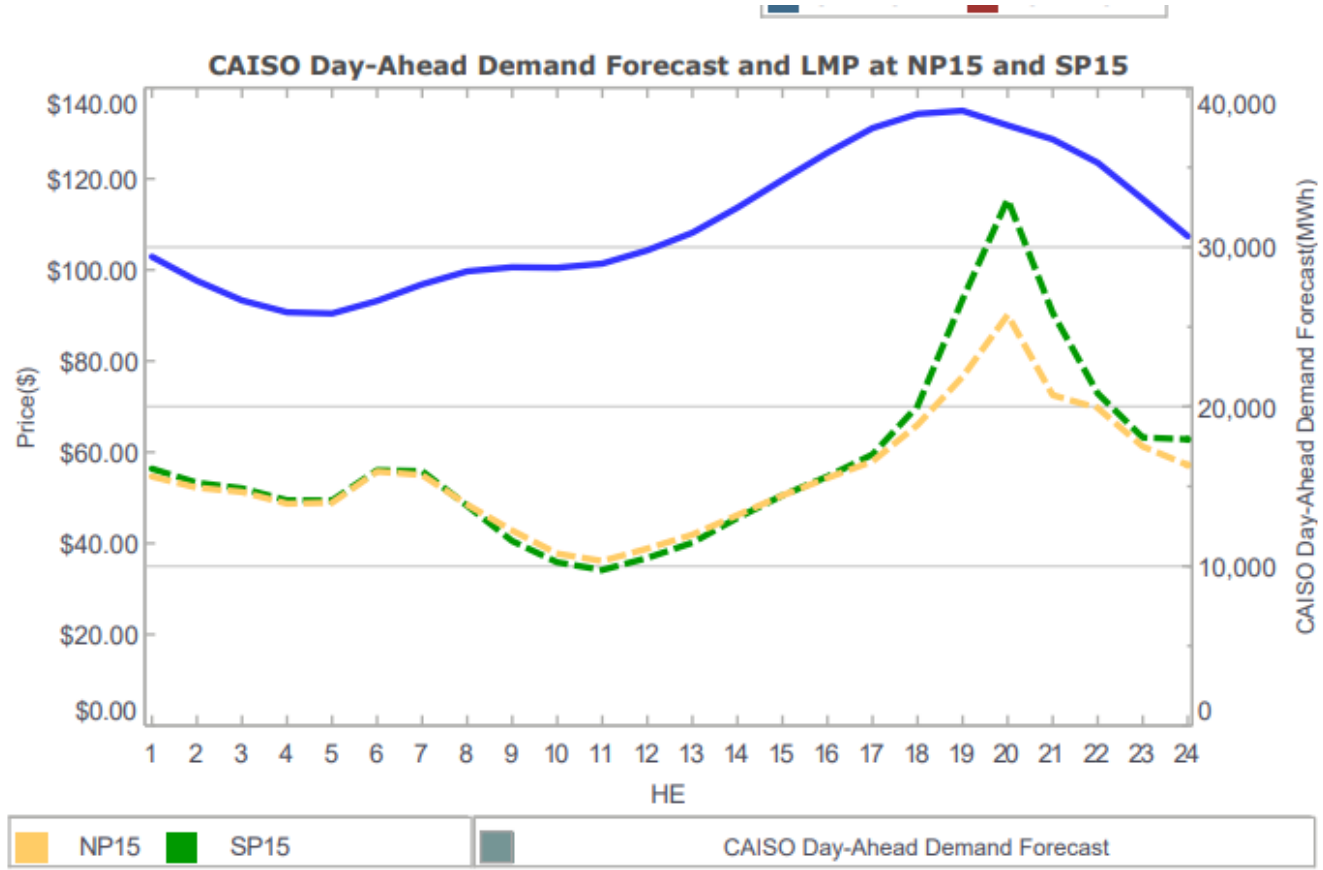
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$40.00
$20.00
$0.00
Price($)
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10,000
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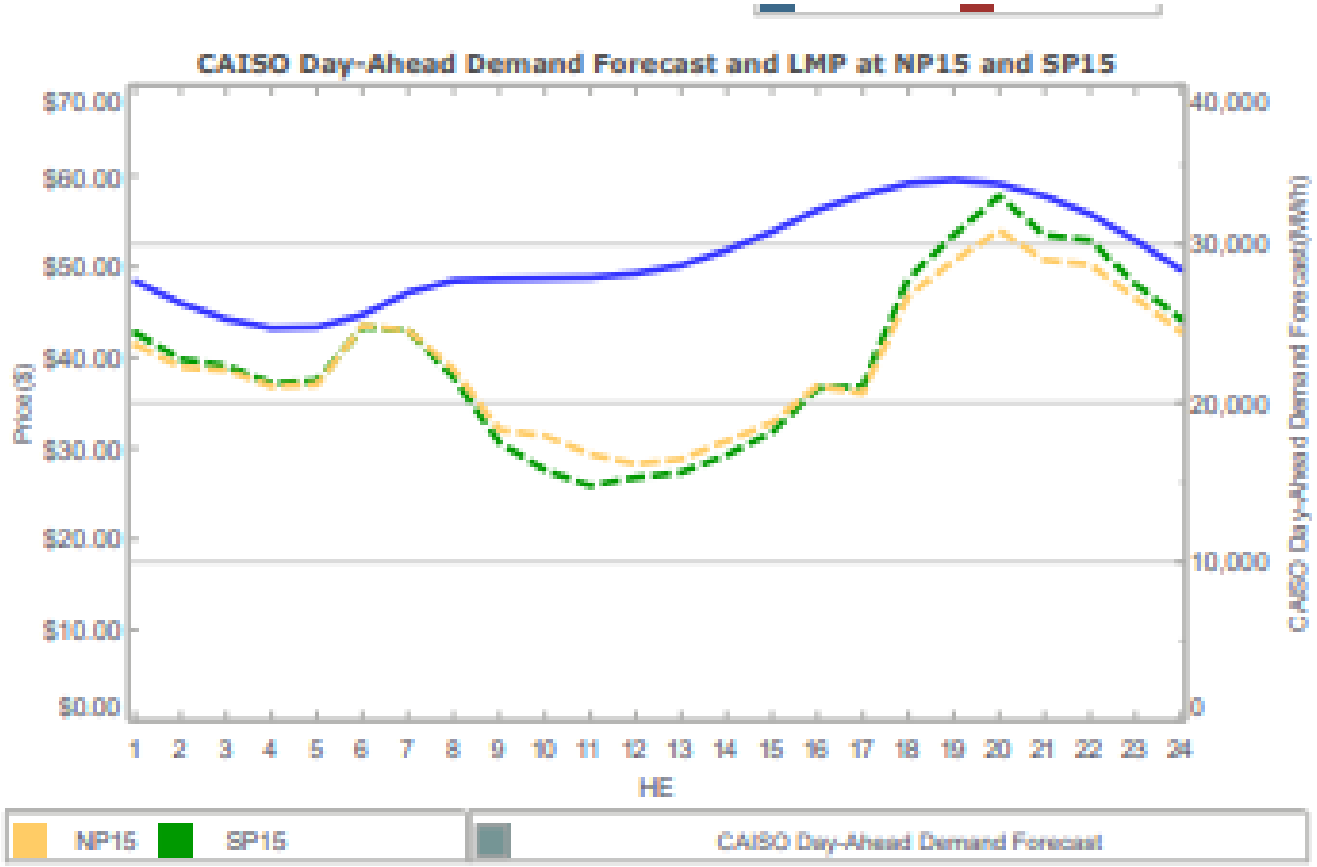
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$40.00
$30.00
$20.00
$10.00
$0.00
Price($)
40,000
30,000
20,000
10,000
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CAISO Day-Ahead Demand Forecast(MWh)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
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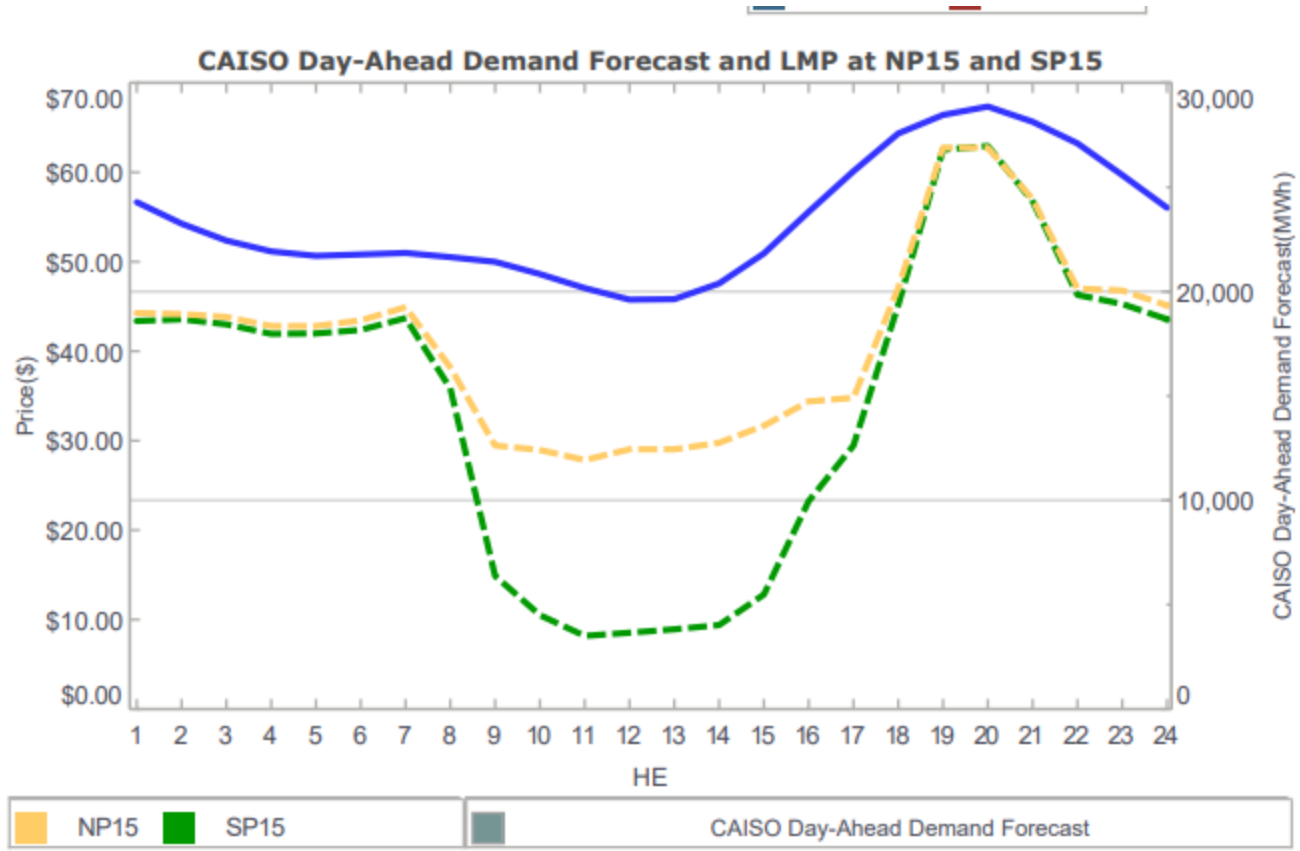
CAISO Day-Ahead Demand Forecast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Price($)
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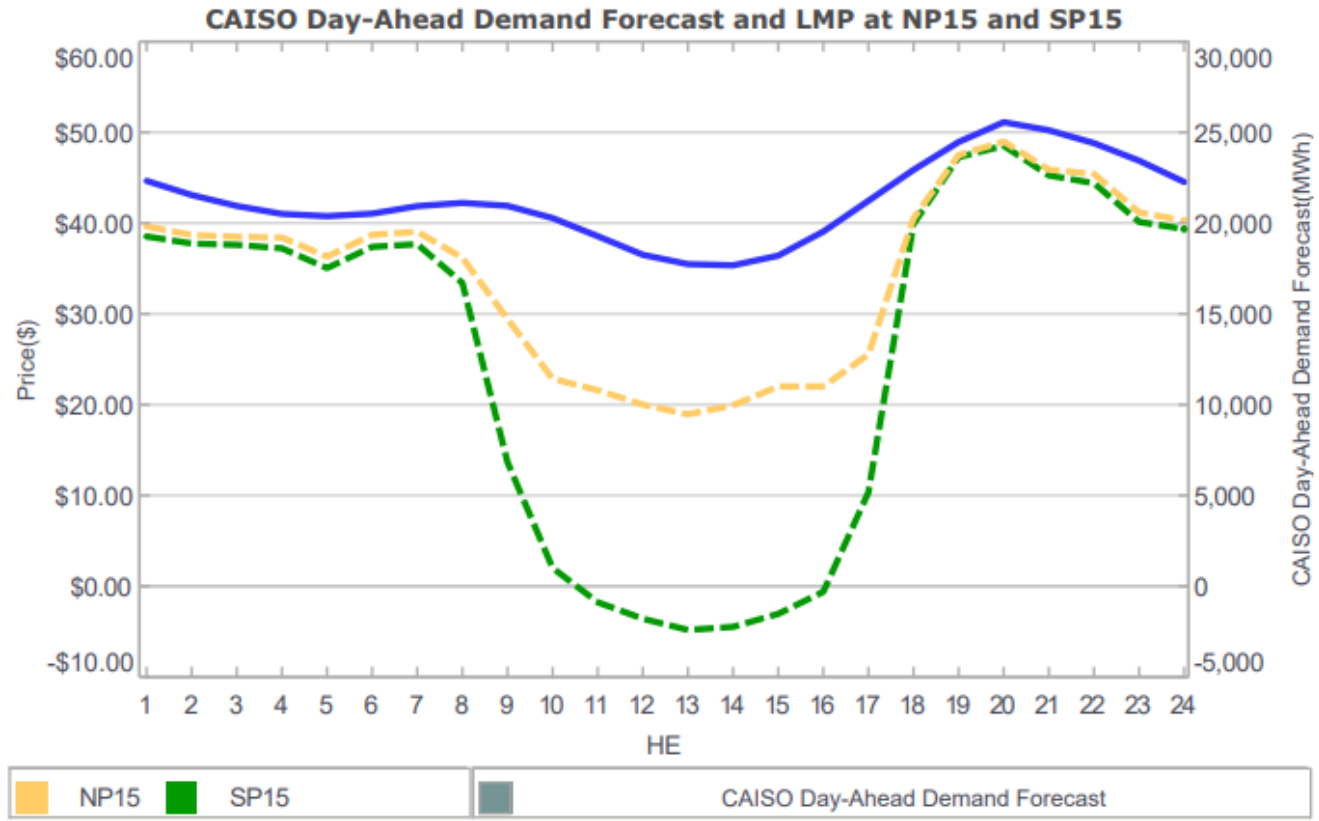
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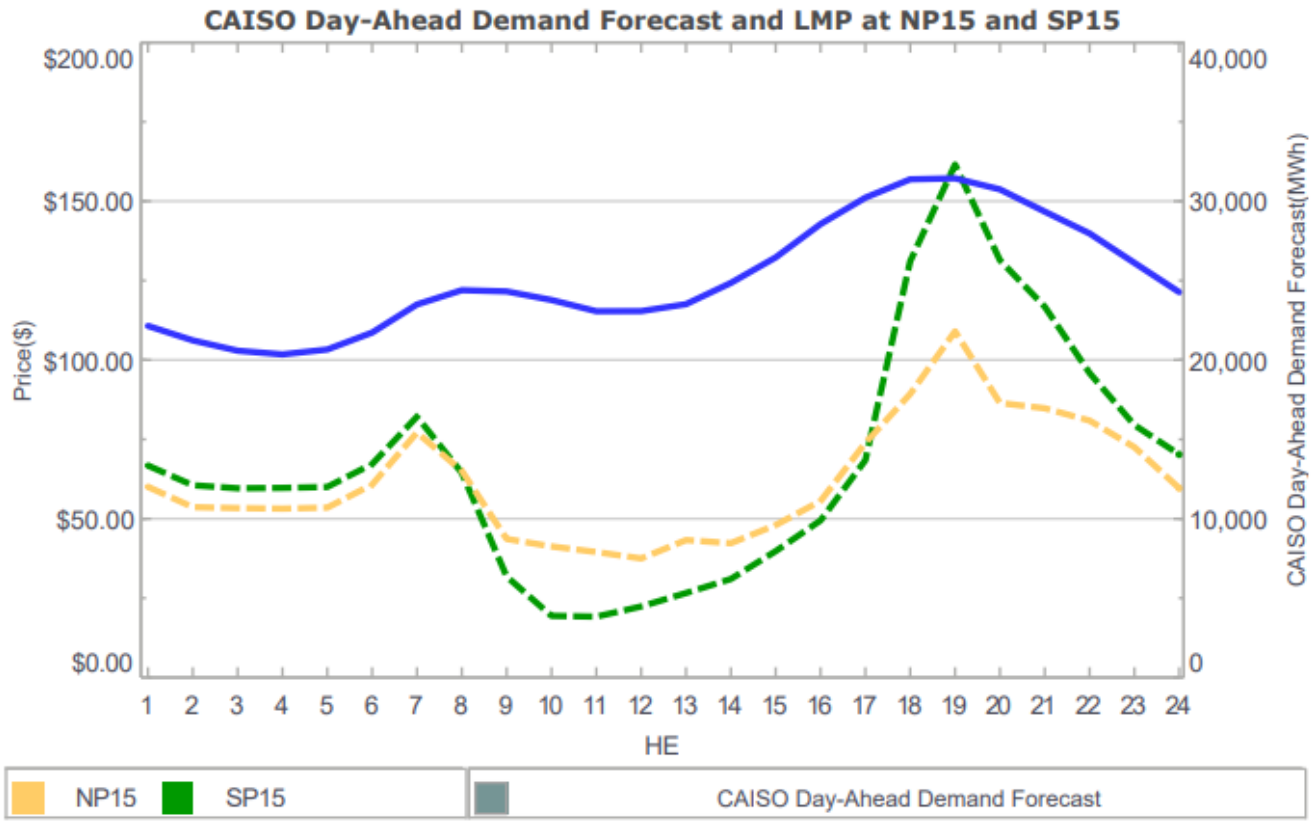
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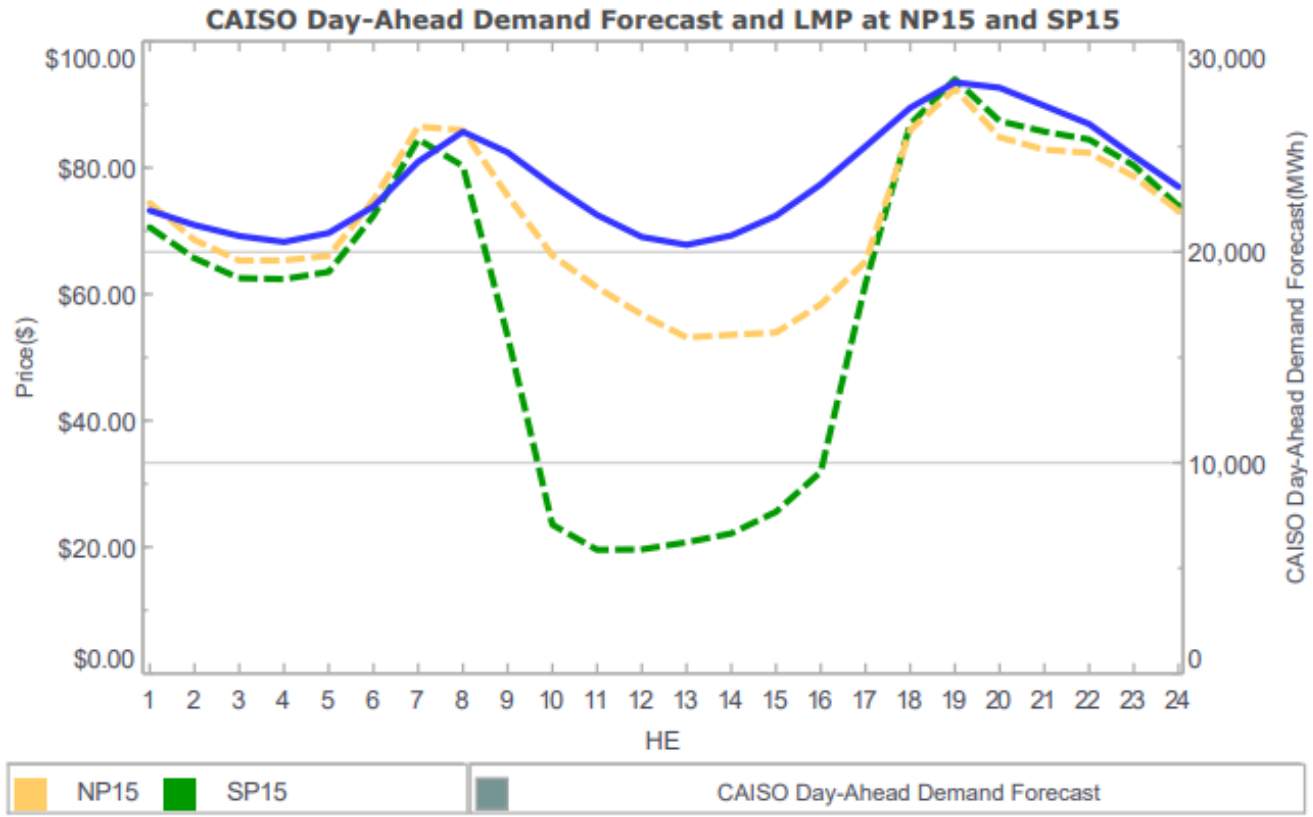
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Price($)
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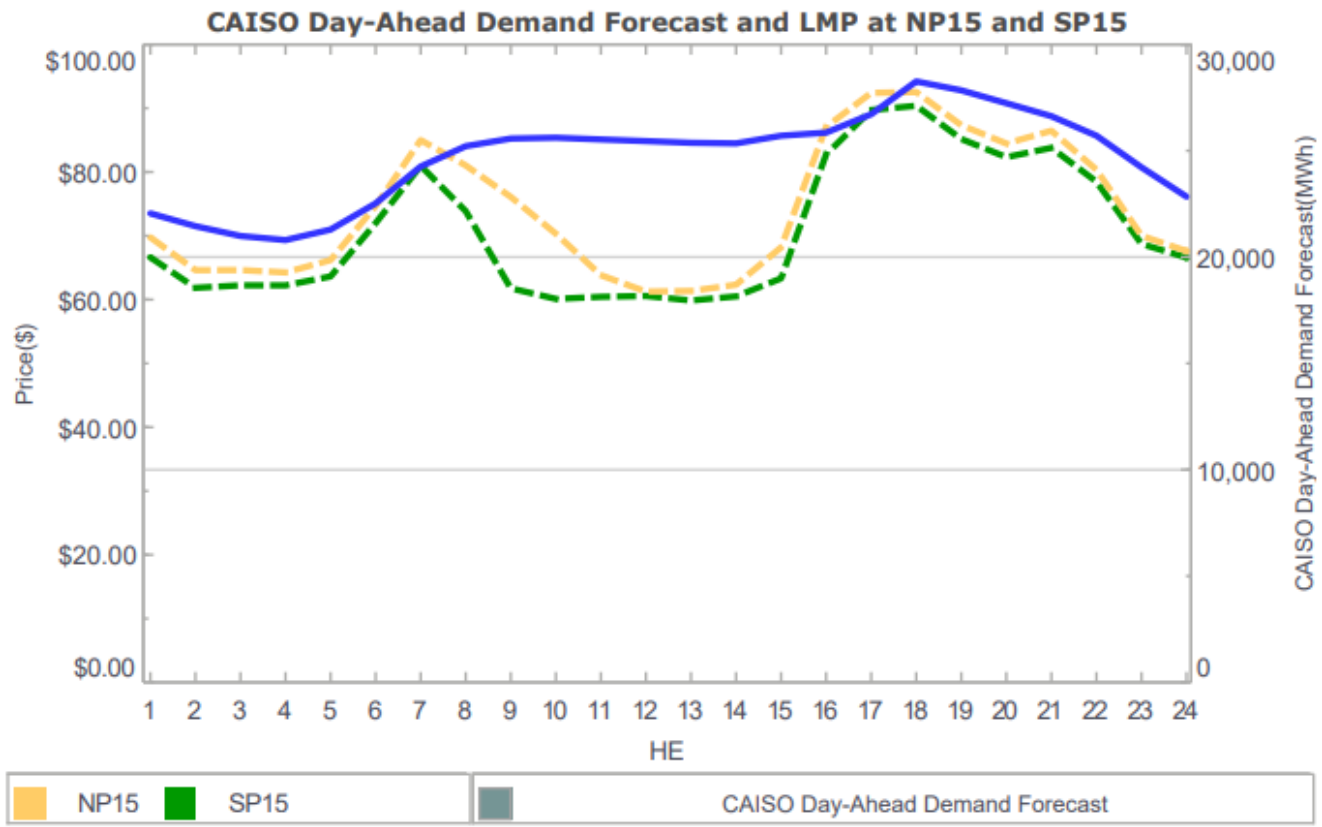
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Price($)
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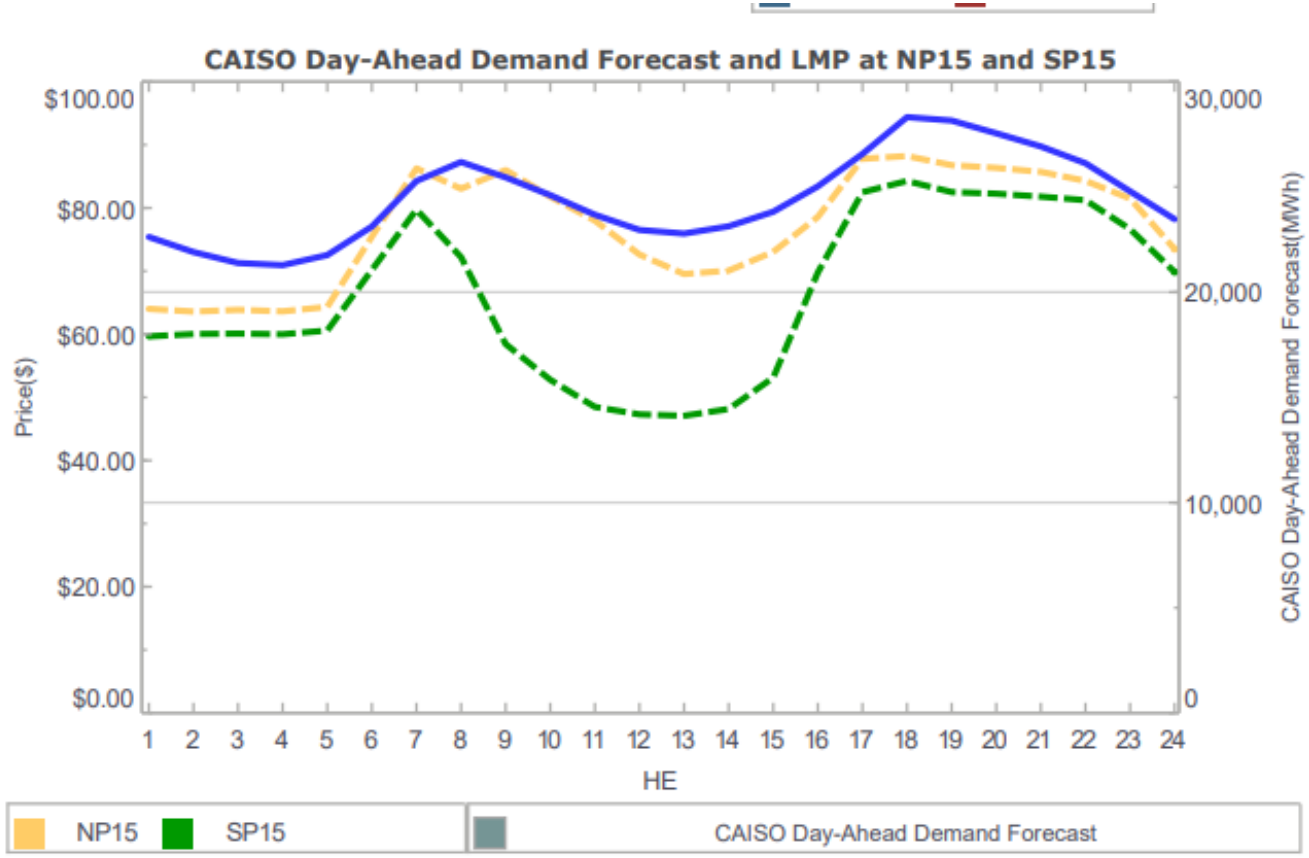
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$100.00
$80.00
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$40.00
$20.00
$0.00
Price($)
30,000
20,000
10,000
0
CAISO Day-Ahead Demand Forecast(MWh)
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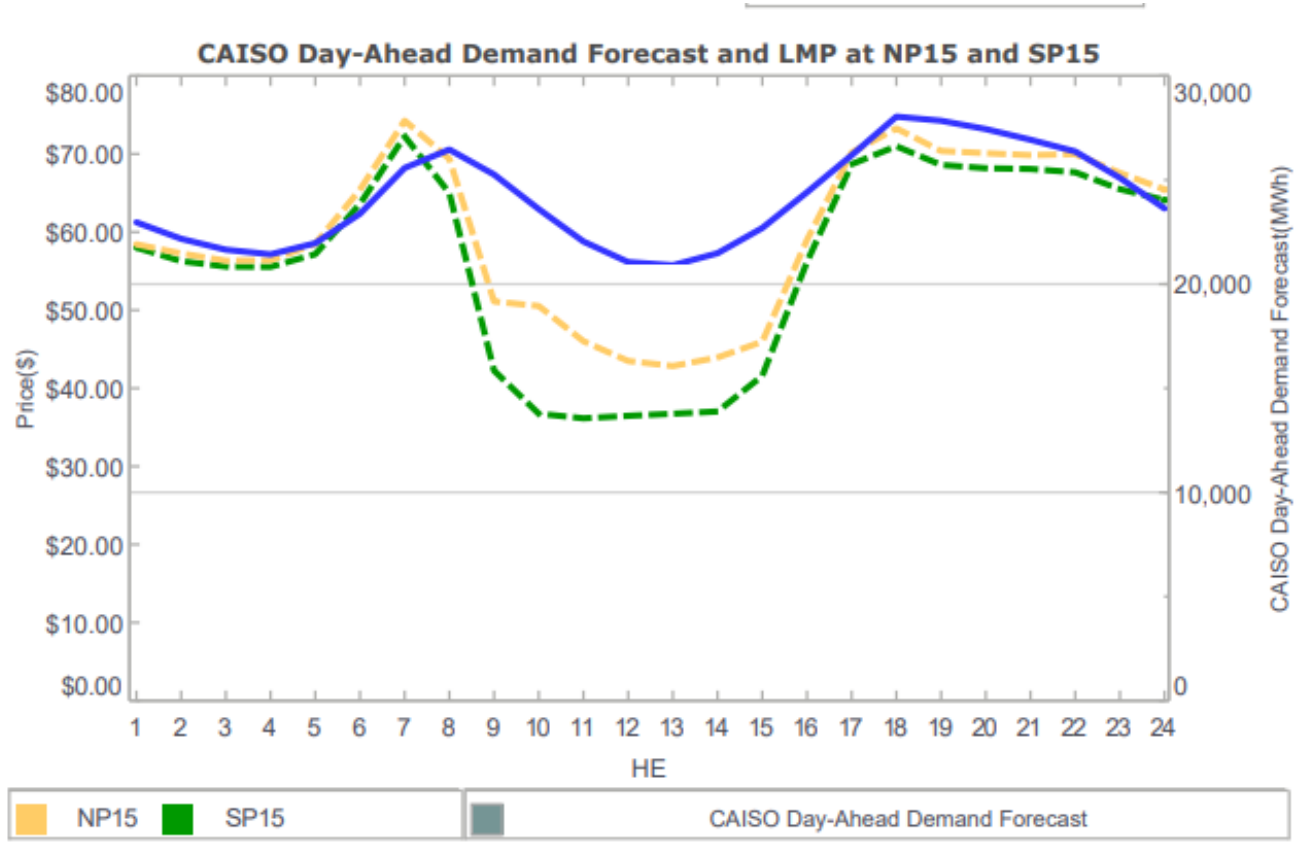
HE
NP15
SP15
CAISO Day-Ahead Demand Forecast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$40.00
$30.00
$20.00
$10.00
$0.00
Price($)
30,000
20,000
10,000
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CAISO Day-Ahead Demand Forecast(MWh)
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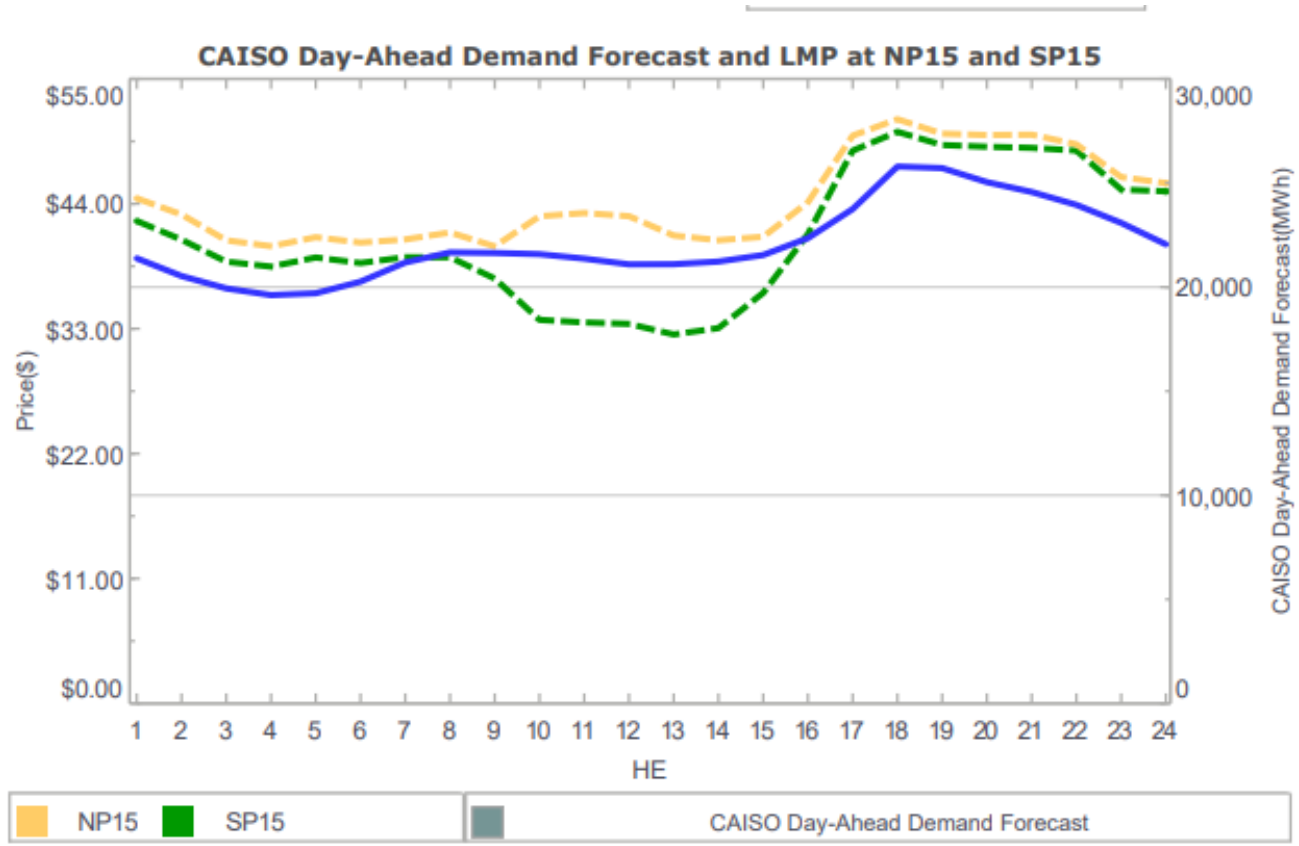
HE
NP15
SP15
CAISO Day-Ahead Demand Forecast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Price($)
30,000
20,000
10,000
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CAISO Day-Ahead Demand Forecast(MWh)
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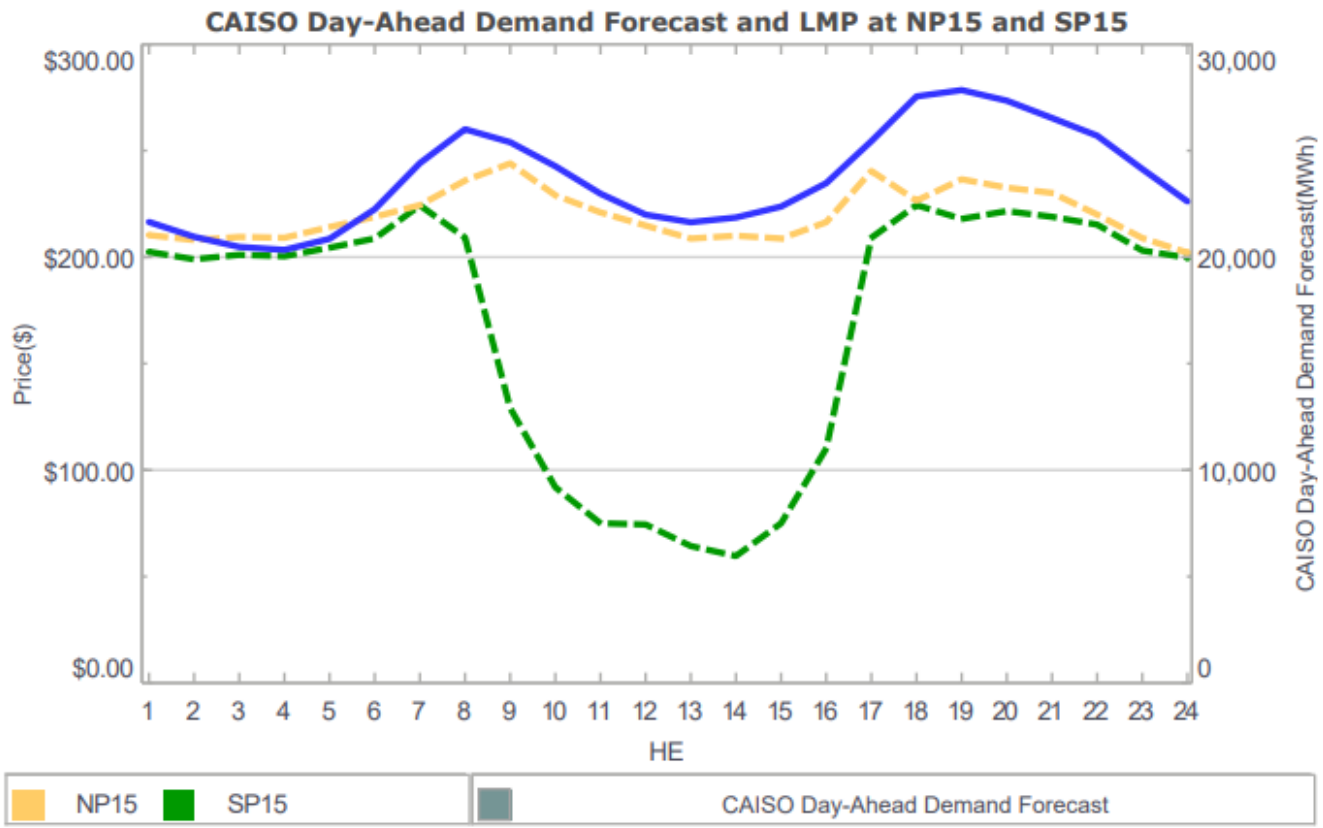
HE
NP15
SP15
CAISO Day-Ahead Demand Forecast


CAISO Day-Ahead Demand Forecast and LMP at NP15 and SP15
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Price($)
30,000
20,000
10,000
0
CAISO Day-Ahead Demand Forecast(MWh)
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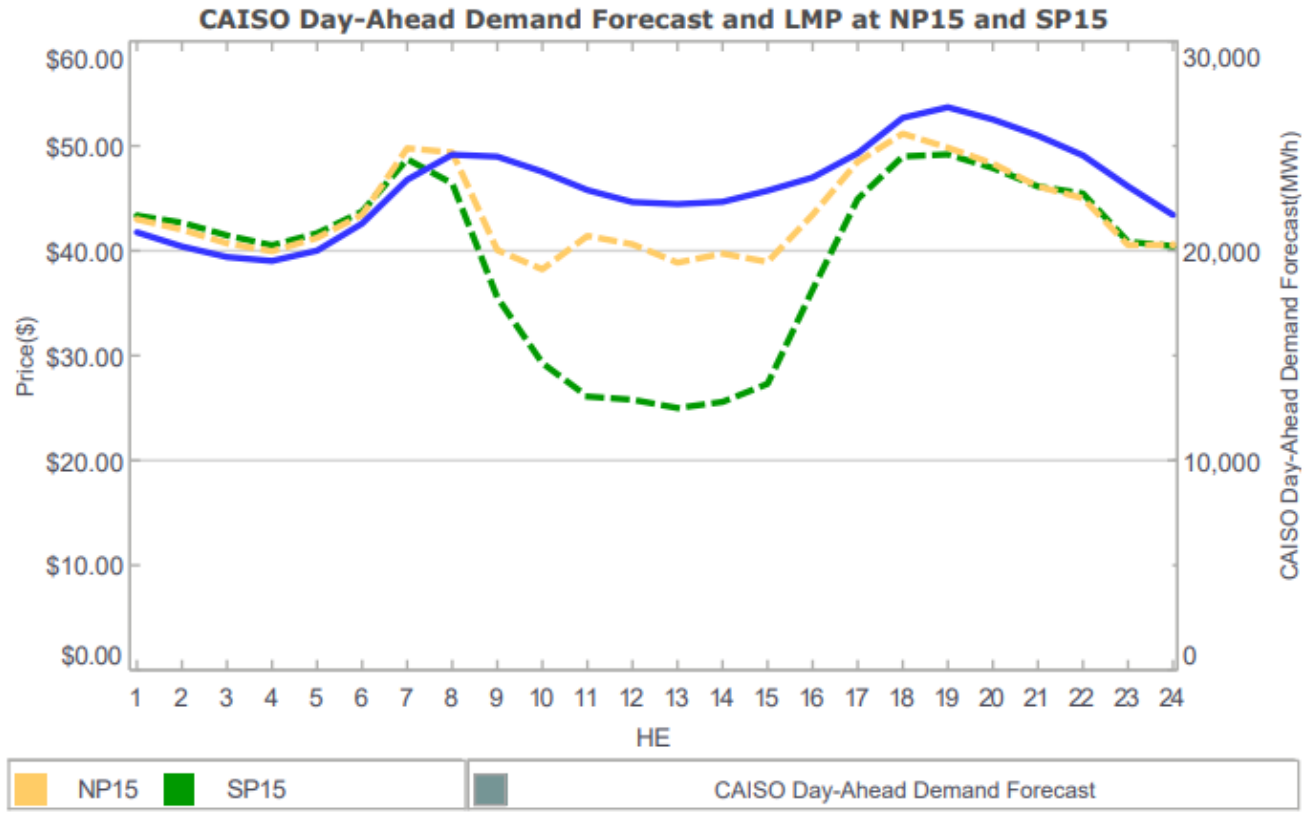
HE
NP15
SP15
CAISO Day-Ahead Demand Forecast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$40.00
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$20.00
$10.00
$0.00
Price($)
30,000
20,000
10,000
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CAISO Day-Ahead Demand Forecast(MWh)
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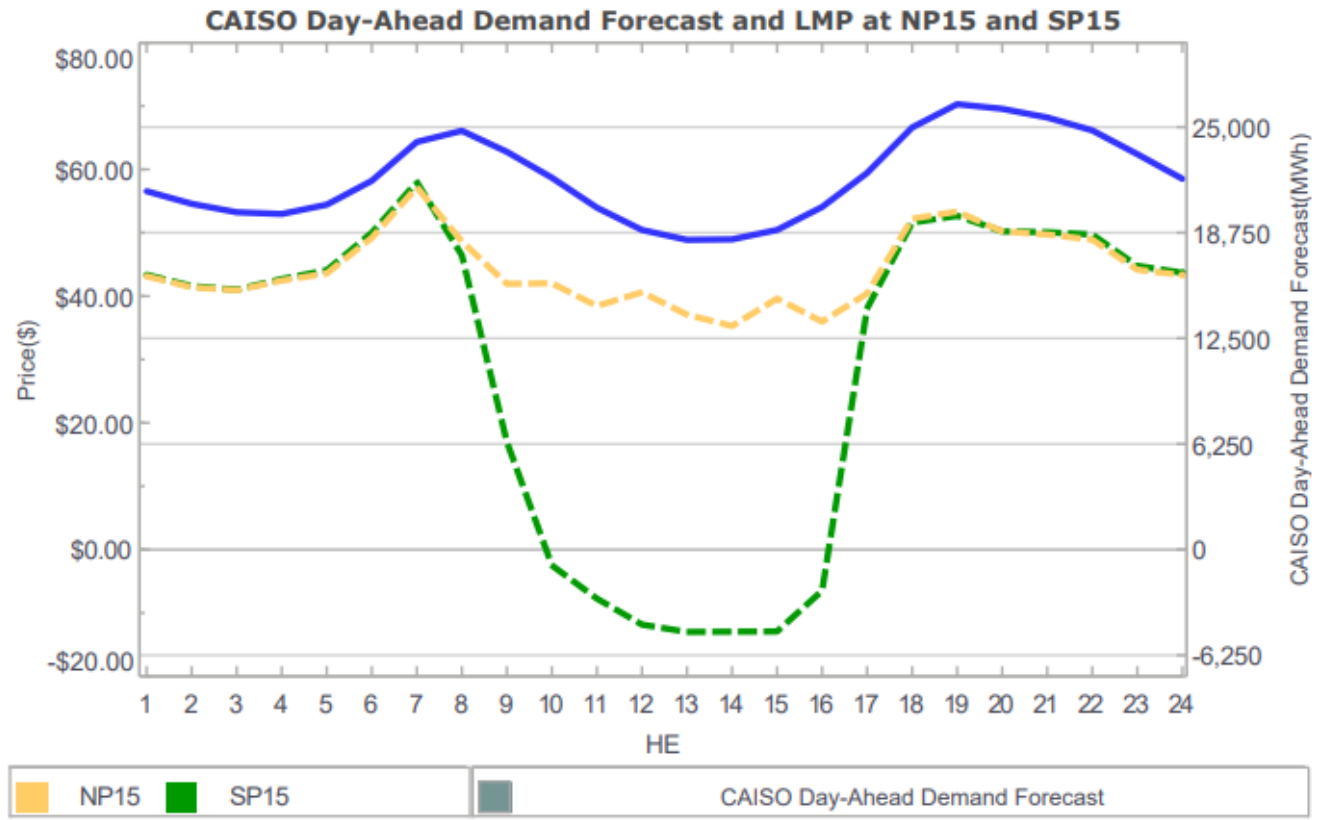
HE
NP15
SP15
CAISO Day-Ahead Demand Forecast


CAISO Day-Ahead Demand Forecast and LMP at NP15 and SP15
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$40.00
$20.00
$0.00
-$20.00
Price($)
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18,750
12,500
6,250
0
-6,250
CAISO Day-Ahead Demand Forecast(MWh)
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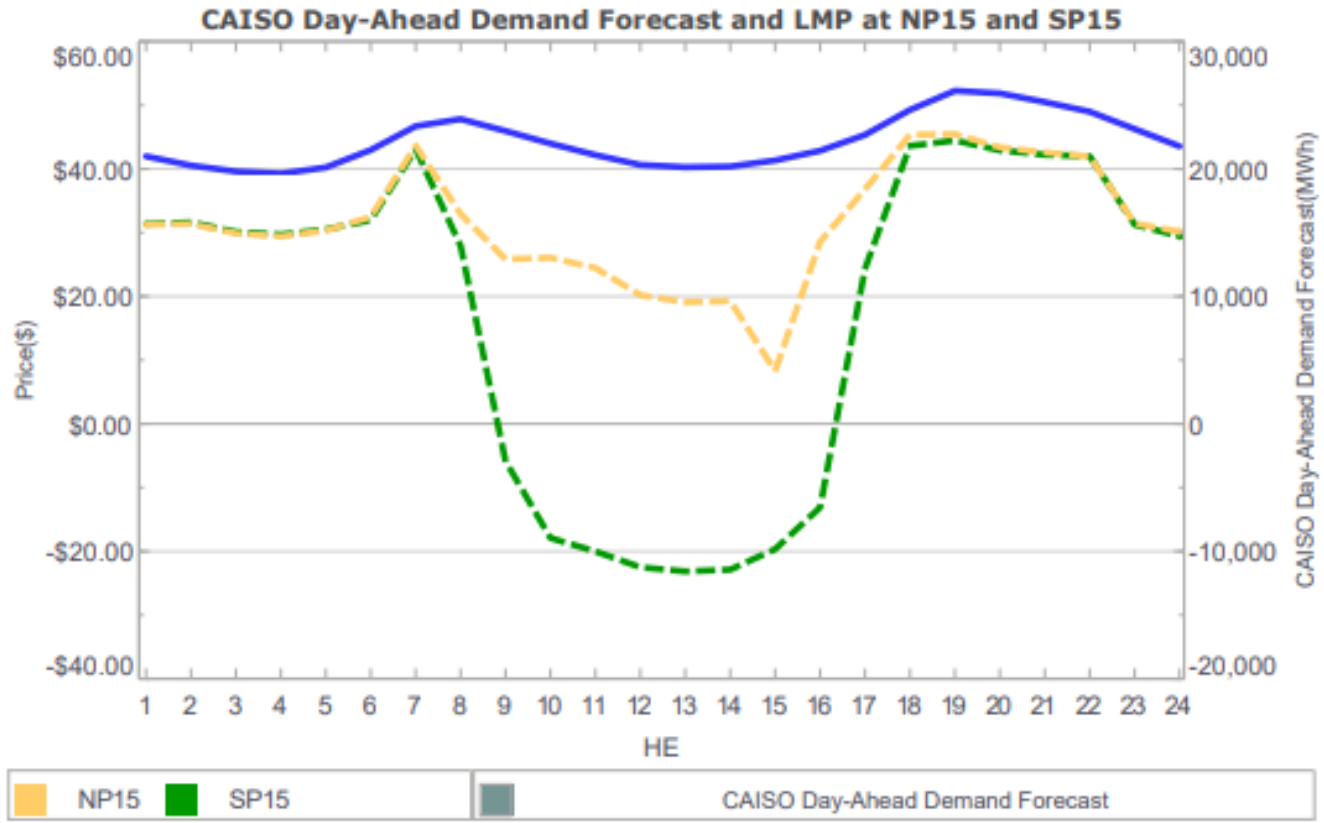
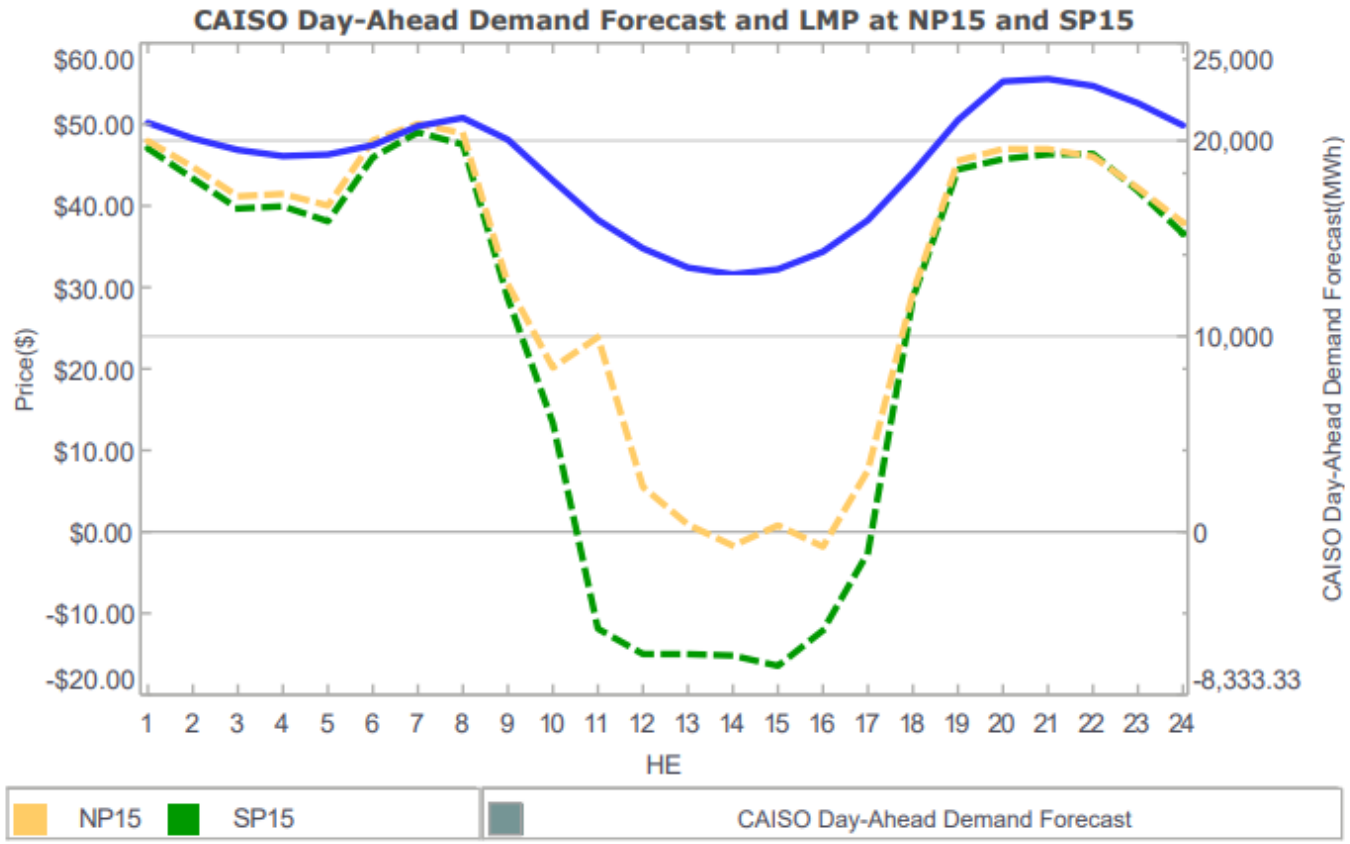
HE
NP15
SP15
CAISO Day-Ahead Demand Forecast


CAISO Day-Ahead Demand Forecast and LMP at NP15 and SP15
$60.00
$40.00
$20.00
$0.00
-$20.00
-$40.00
Price($)
30,000
20,000
10,000
0
-10,000
-20,000
CAISO Day-Ahead Demand Forecast(MWh)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
HE
NP15
SP15
CAISO Day-Ahead Demand Forecast


CAISO Day-Ahead Demand Forecast and LMP at NP15 and SP15
$60.00
$50.00
$40.00
$30.00
$20.00
$10.00
$0.00
-$10.00
-$20.00
Price($)
25,000
20,000
10,000
0
-8,333.33
CAISO Day-Ahead Demand Forecast(MWh)
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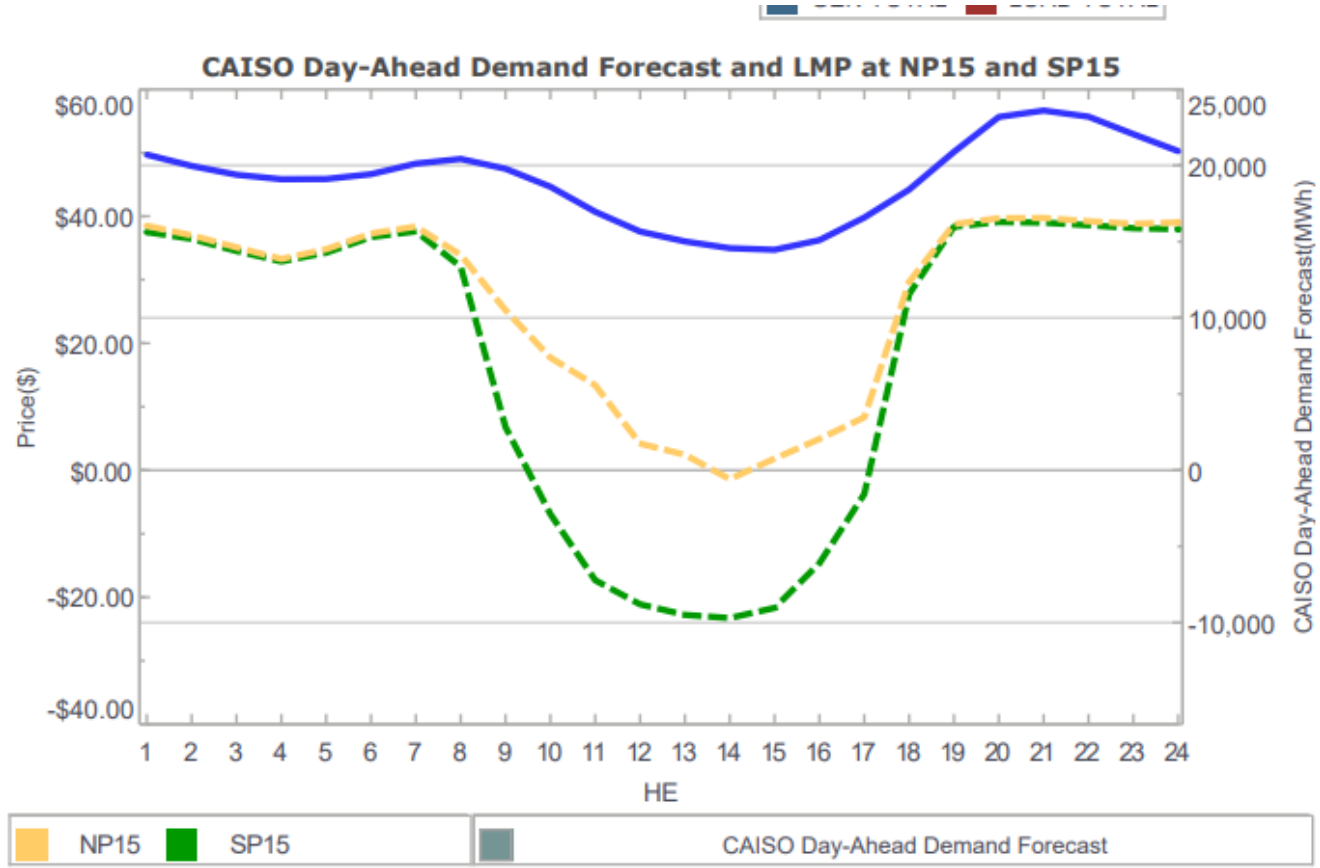
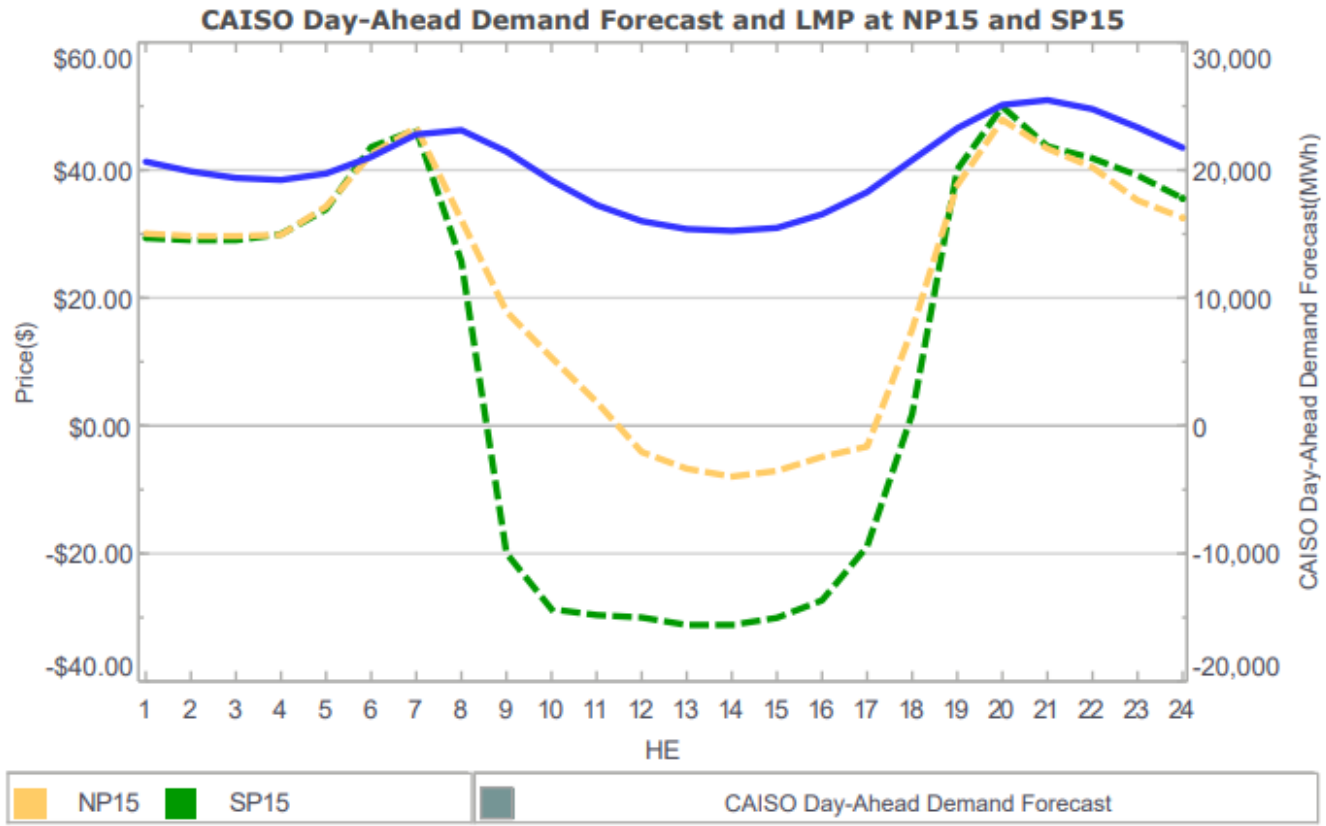
HE
NP15
SP15
CAISO Day-Ahead Demand Forecast


CAISO Day-Ahead Demand Forecast and LMP at NP15 and SP15
$60.00
$40.00
$20.00
$0.00
-$20.00
-$40.00
Price($)
25,000
20,000
10,000
0
-10,000
CAISO Day-Ahead Demand Forecast(MWh)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
HE
NP15
SP15
CAISO Day-Ahead Demand Forecast


CAISO Day-Ahead Demand Forecast and LMP at NP15 and SP15
$60.00
$40.00
$20.00
$0.00
-$20.00
-$40.00
Price($)
30,000
20,000
10,000
0
-10,000
-20,000
CAISO Day-Ahead Demand Forecast(MWh)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
HE
NP15
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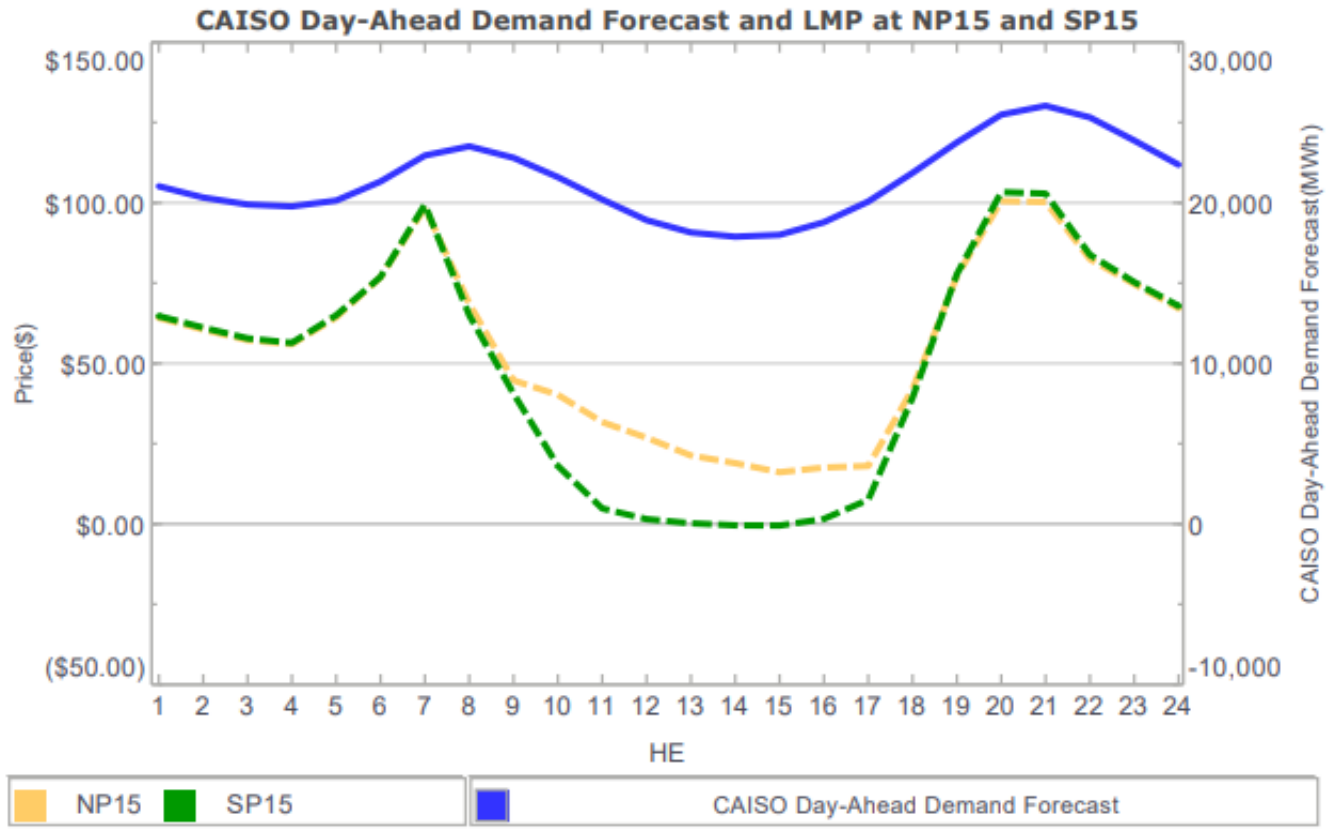
CAISO Day-Ahead Demand Forecast and LMP at NP15 and SP15
$150.00
$100.00
$50.00
$0.00
($50.00)
Price($)
30,000
20,000
10,000
0
-10,000
CAISO Day-Ahead Demand Forecast(MWh)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
HE
NP15
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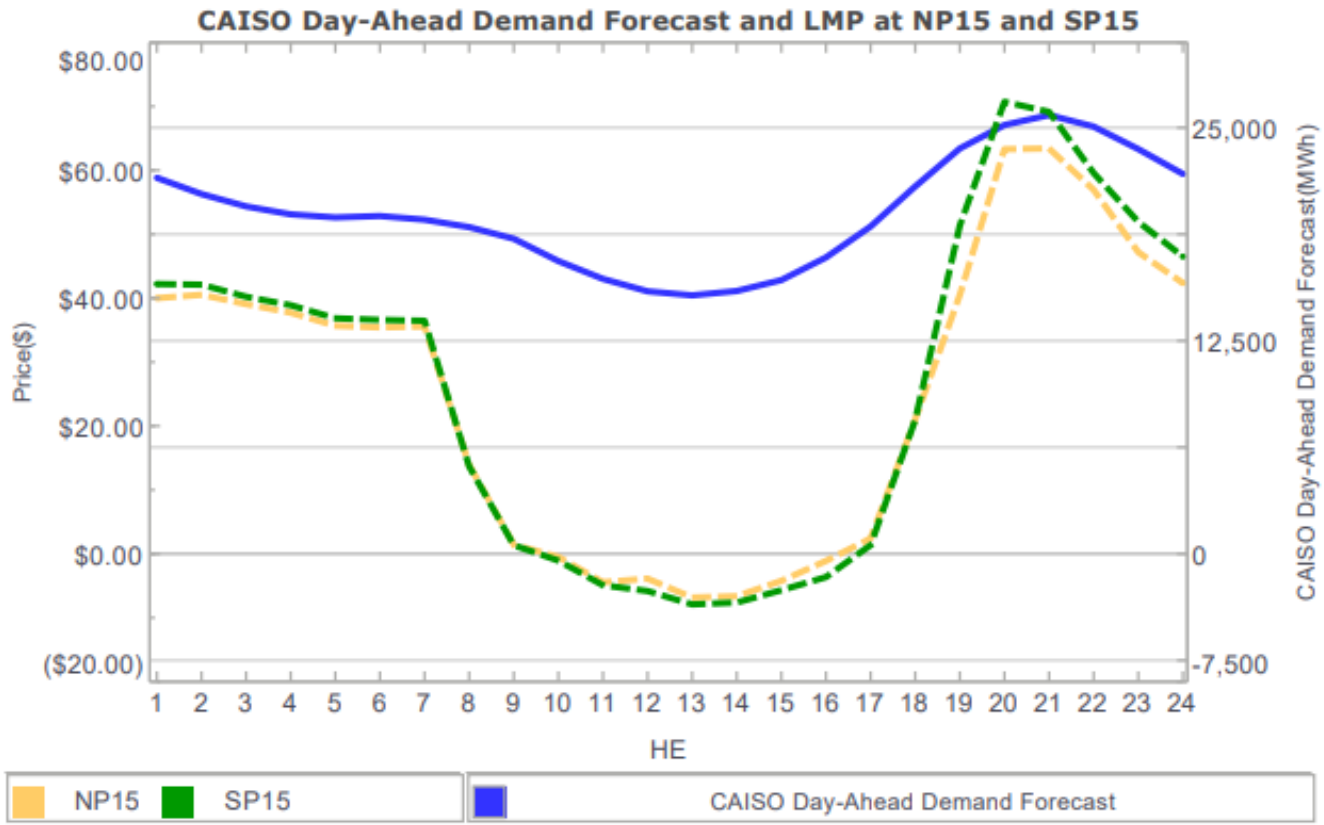
CAISO Day-Ahead Demand Forecast and LMP at NP15 and SP15
$80.00
$60.00
$40.00
$20.00
$0.00
($20.00)
Price($)
25,000
12,500
0
-7,500
CAISO Day-Ahead Demand Forecast(MWh)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
HE
NP15
SP15
CAISO Day-Ahead Demand Forecast

# Video Presenting the shape of the CAISO DA Demand Forecast and THs April 2023-April 2024 (by weekly data)