



North America, Q4 2020

Market Feedback Report



Q4 2020 Market Feedback Report

Welcome Letter

Thank you for being an active member of LevelTen Energy's renewable energy transaction platform. To those who are new to LevelTen, we extend a warm welcome on behalf of the company and the Developer Relations team.

We hope and trust everyone had a restful holiday season and is staying healthy and safe thus far in 2021. LevelTen enters the new year optimistic as the U.S rejoins the Paris agreement and a new European Climate Pact. Renewable energy and corporate procurement have come a long way, but there is still much work that needs to be done- to lower barriers impeding the industry's growth.

As in Q3, this past quarter we continued to increase demand side volume by expanding the number and types of platform users. In October, LevelTen and 3Degrees **announced an innovative partnership** that will open access to even more corporate renewable energy buyer through the platform. Just a few days ago, we **announced a similar partnership** with global sustainability advisor Anthesis. As a result of these partnerships, developers will see an increase in North American and European PPA opportunities from RFPs and direct bilateral transactions. With this surge in demand, we recommend keeping your projects up-to-date to maximize their visibility to buyers on the marketplace.

Just as important as transactional volume, LevelTen is your unrivaled source of real-time market intelligence and PPA pricing feedback. One of the ways LevelTen delivers actionable, data-driven insights is through quarterly feedback reporting. LevelTen digests over 2,000 price offers from nearly 1,200 projects, then aggregates, anonymizes, and publishes that mountain of data to inform your PPA sourcing efforts.

It's hard to believe, but 2021 will be LevelTen's 5th year of delivering these quarterly intelligence reports.

This Market Feedback Report contains aggregated prices by technology, ISO, and commercial operation date, a breakdown by geography, generation weighted forward curves, and more. This quarter all active developers will receive a Market Feedback Report for North American and European markets that LevelTen serves. For more information about technical terminology we use throughout these reports, flip to the Glossary section at the end of the document.

We welcome your input as you review these quarterly market intelligence and competitive feedback reports. Please reach out to your relationship manager or (DeveloperRelations@LevelTenEnergy.com) at any time.

Sincerely,

LevelTen Developer Relations Team

Methodology

LevelTen generates the Market Feedback Report using real PPA offers submitted by developers to the Marketplace within the last 90 days.

The report exhibits insights based on the following:

- Projects
 - Selling Status: Active or Pending
 - Markets: North American ISO or Europe
- Standard Marketplace PPA Price Plans
 - Updated or submitted between 10/1/2020 - 12/31/2020
 - Term: 10-20 years
 - Standard Marketplace Terms & Conditions

Due to insufficient data points, the Q4 2020 Market Report does not show PPA Pricing data for the following markets and technologies:

- CAISO Wind
- SO-NE Solar
- ISO-NE Wind
- NYISO Solar
- NYISO Wind



Products

Escalator	0%
Shape	As Generated
Market Price Floor	North America: None Europe: €0/MWh
Non-Settlement threshold	North America: \$-30.00 Europe: None
RECs	North America: Project RECs Included Europe: Project GOs Included
Are RECS Green-e certified	Yes
Balancing Costs	North America: Included Europe: Not Included
Capacity	Not included
Day Ahead / Real Time	North America: Real Time Europe: Day Ahead

Seller's Security	North America: \$100K/MW pre-COD due at PPA execution, \$100K/MW post-COD Europe: \$92.5K/MW pre-COD due at PPA execution, €92.5K/MW post-COD
Buyer's Security	Investment Grade Credit Rating: No security posting Below Investment Grade Credit Rating: \$100K/MW due at PPA execution
Settlement Period	Monthly
Delay Damages	North America: \$250/MW/day Europe: €230/MW/day
Capacity Buydown	North America: \$100K/MW shortfall Europe: \$92.5K/MW shortfall
Availability Guarantee	90% year one, 95% all subsequent years
LevelTen Fee	Not Included in Price
Physical/Financial	Financial

Market Snapshot

Marketplace metrics

Percentile (25) of Price	\$29.24/MWh
Percentile (50) of Price	\$35.25/MWh
Percentile (75) of Price	\$41.54/MWh
Average Nameplate Capacity	148 MW

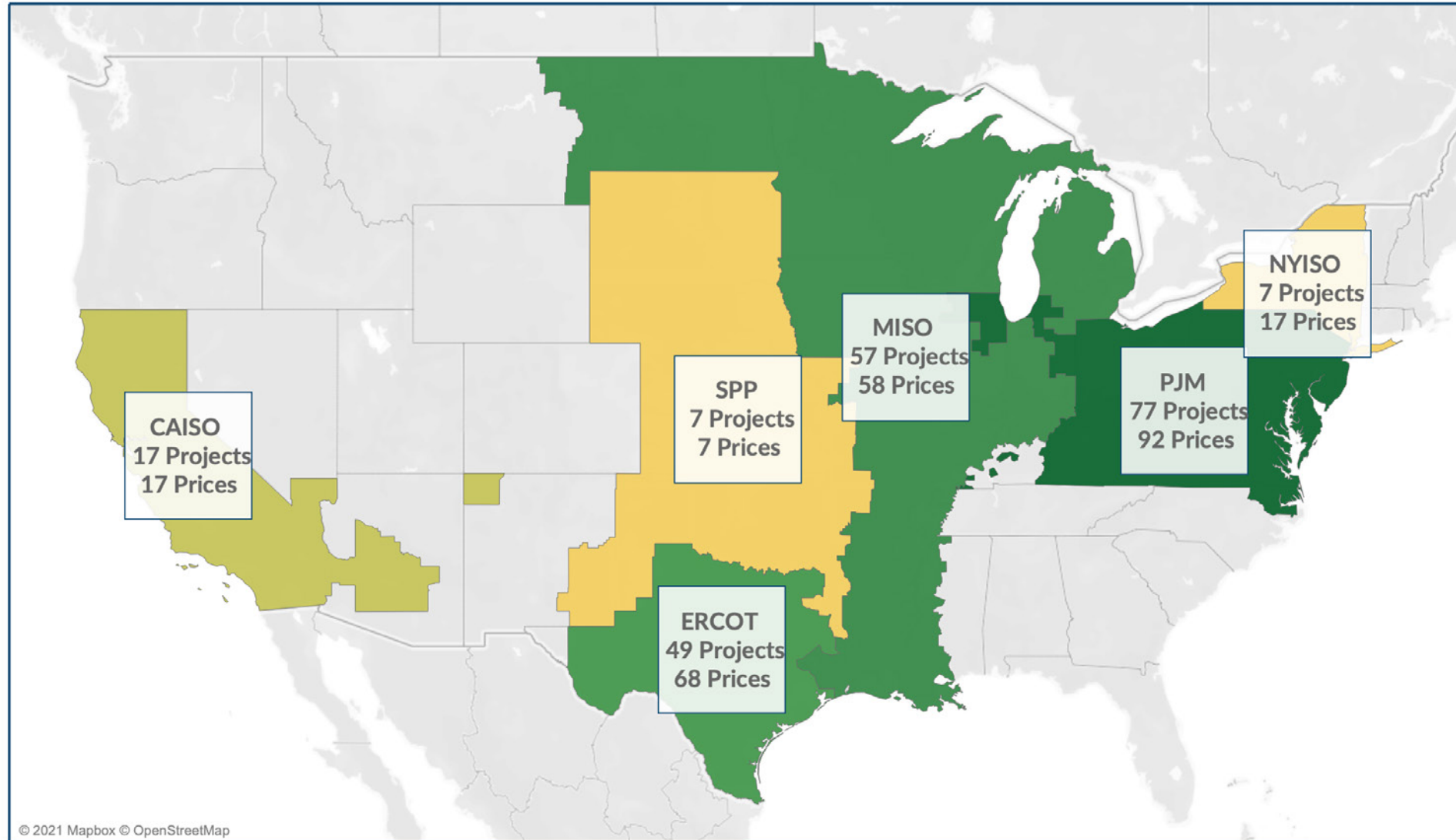
Wind metrics

Percentile (25) of Price	\$21.60/MWh
Percentile (50) of Price	\$24.50/MWh
Percentile (75) of Price	\$36.89/MWh
Average Nameplate	202 MW

Solar metrics

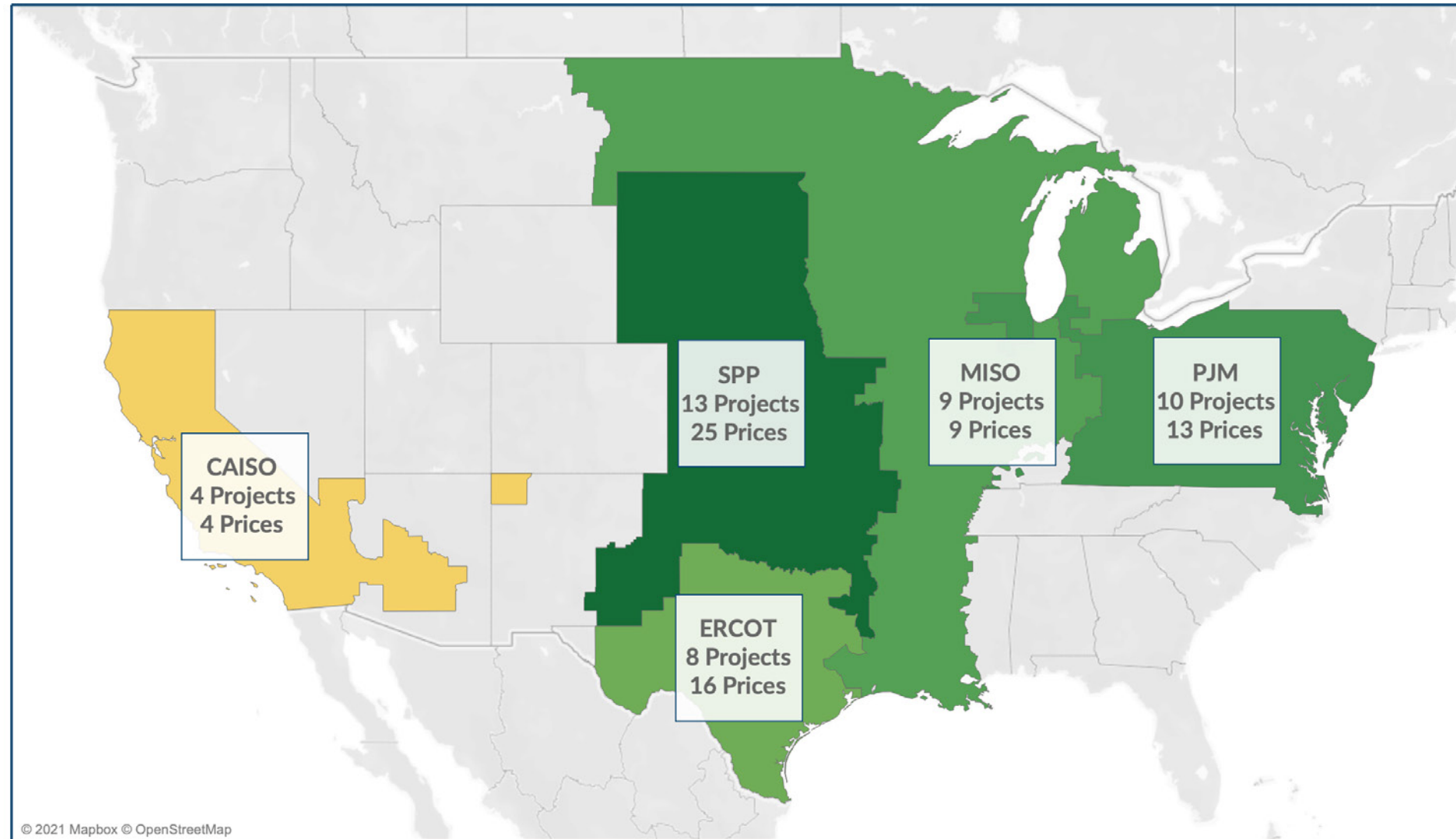
Percentile (25) of Price	\$31.00/MWh
Percentile (50) of Price	\$36.00/MWh
Percentile (75) of Price	\$43.37/MWh
Average Nameplate Capacity	133 MW

Solar Project Count by Market



This map displays the number of solar projects that updated Standard Marketplace Pricing in Q4 2020.

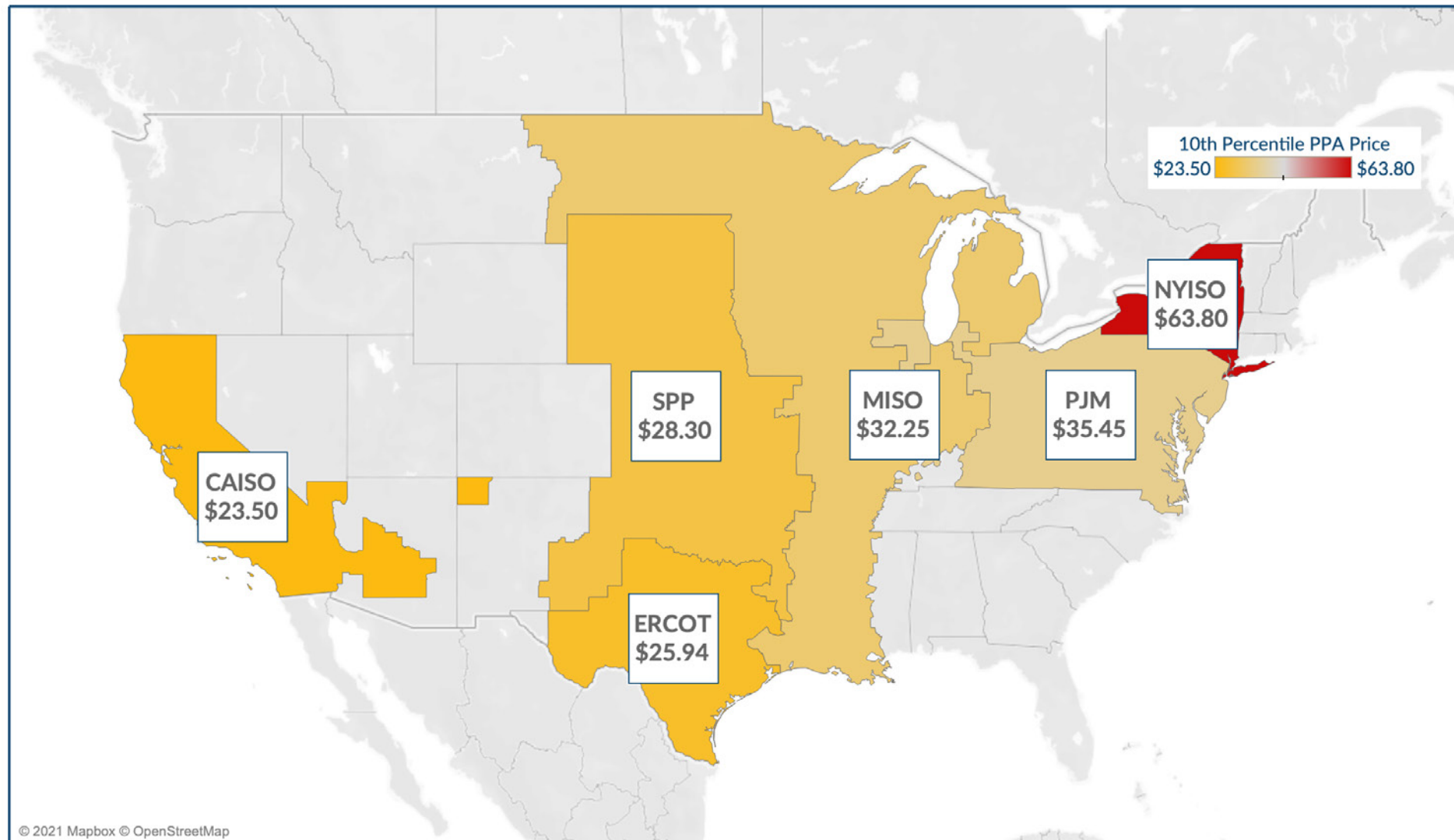
Wind Project Count by Market



This map displays the number of solar projects that updated Standard Marketplace Pricing in Q4 2020.

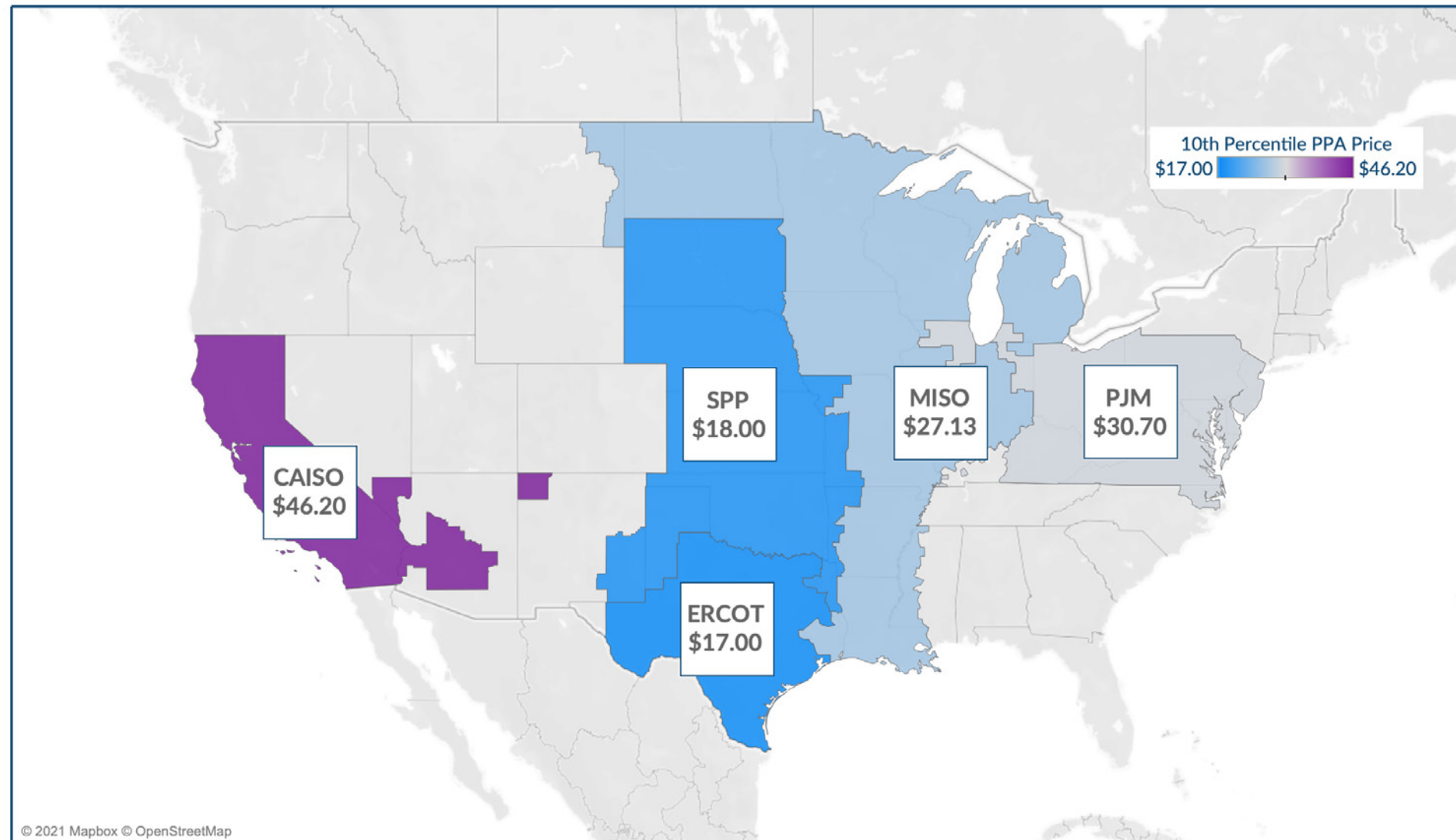
Solar PPA Prices by Market

10th Percentile of Levelized PPA Prices (\$ USD/MWh)

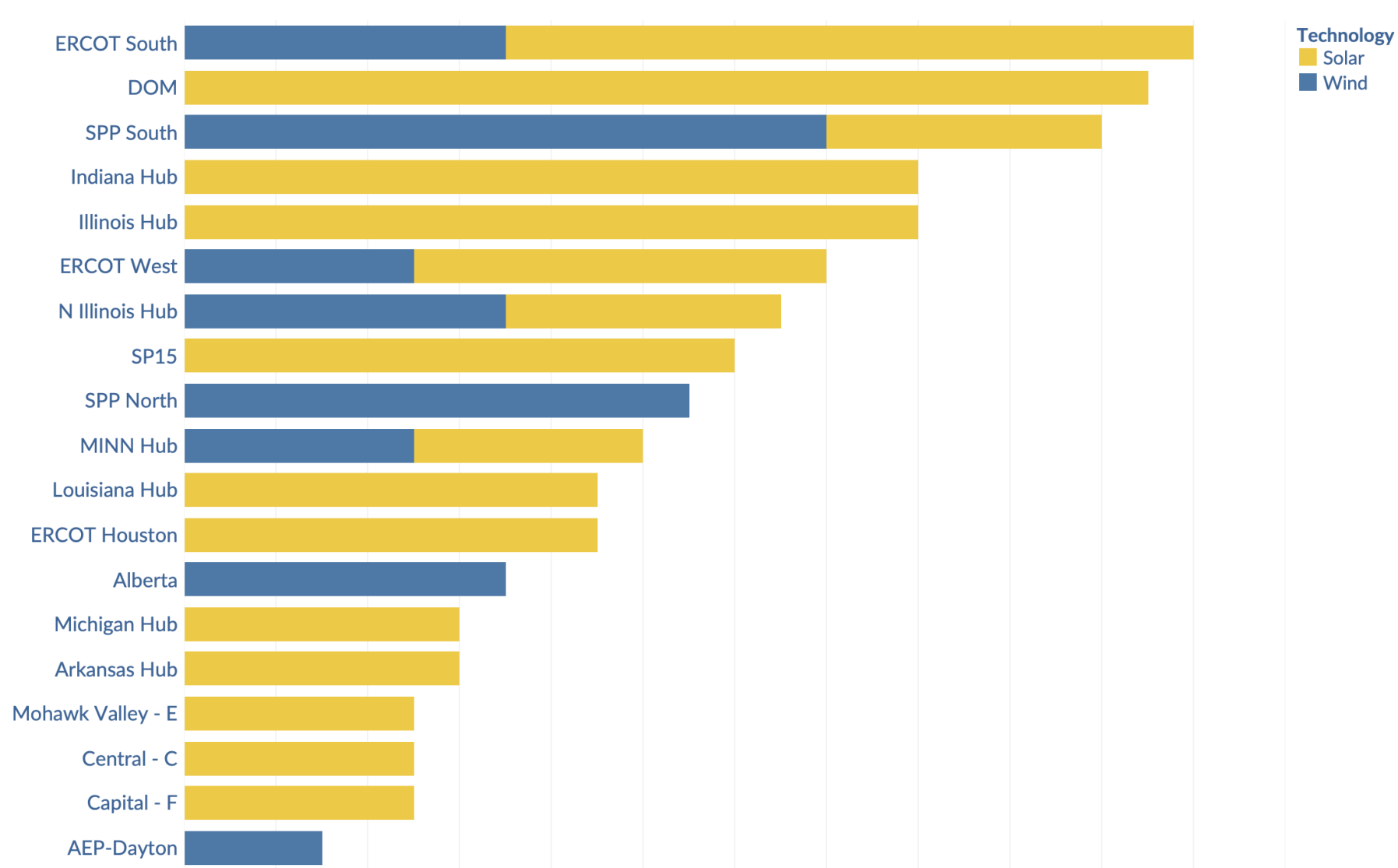


Wind PPA Prices by Market

10th Percentile of Levelized PPA Prices (\$ USD/MWh)

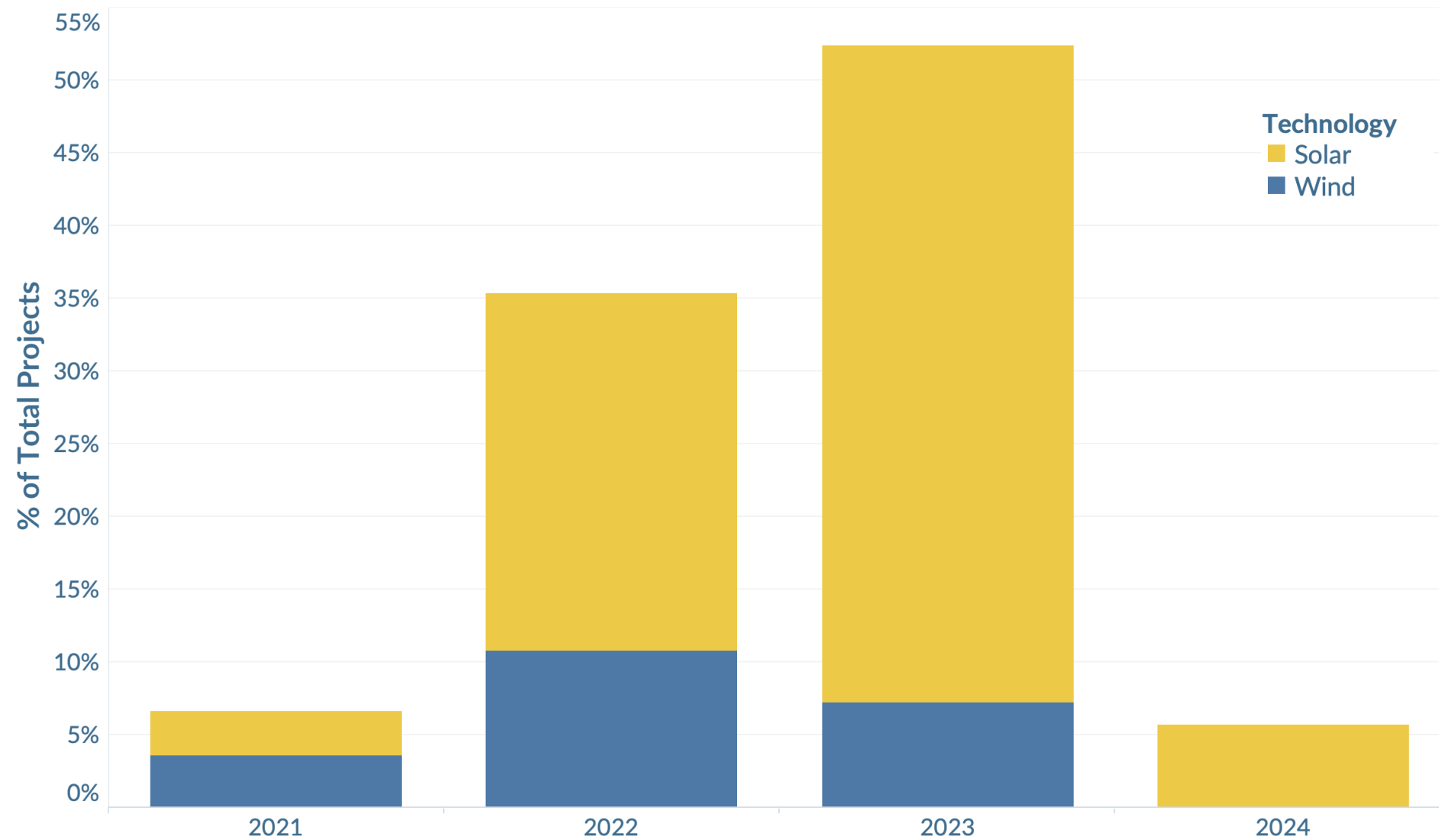


Offers by Settlement Hub

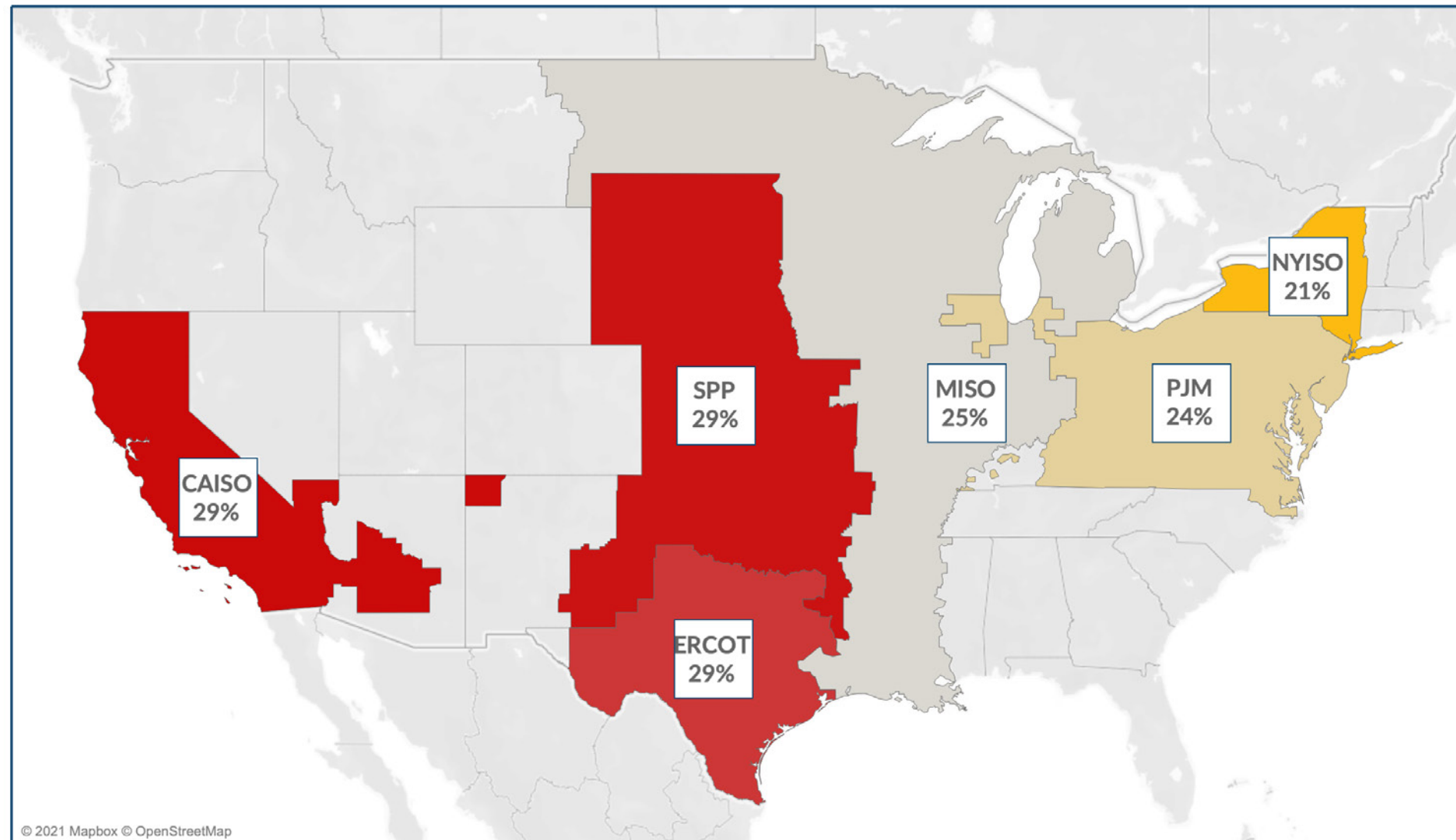


This graph should give you an idea of the relative statistical significance of the data shown throughout the report.

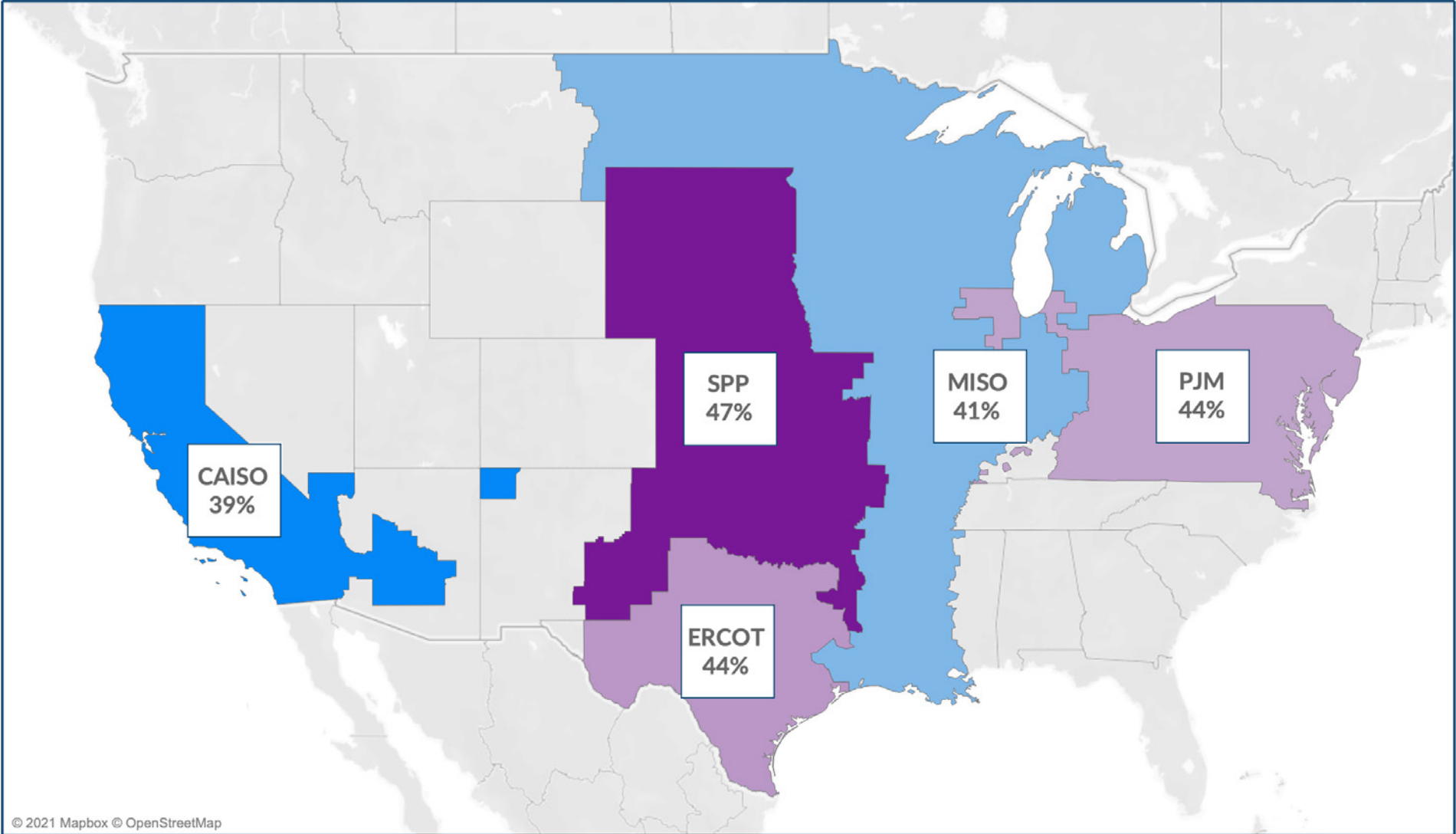
Offers by Contract Start Date



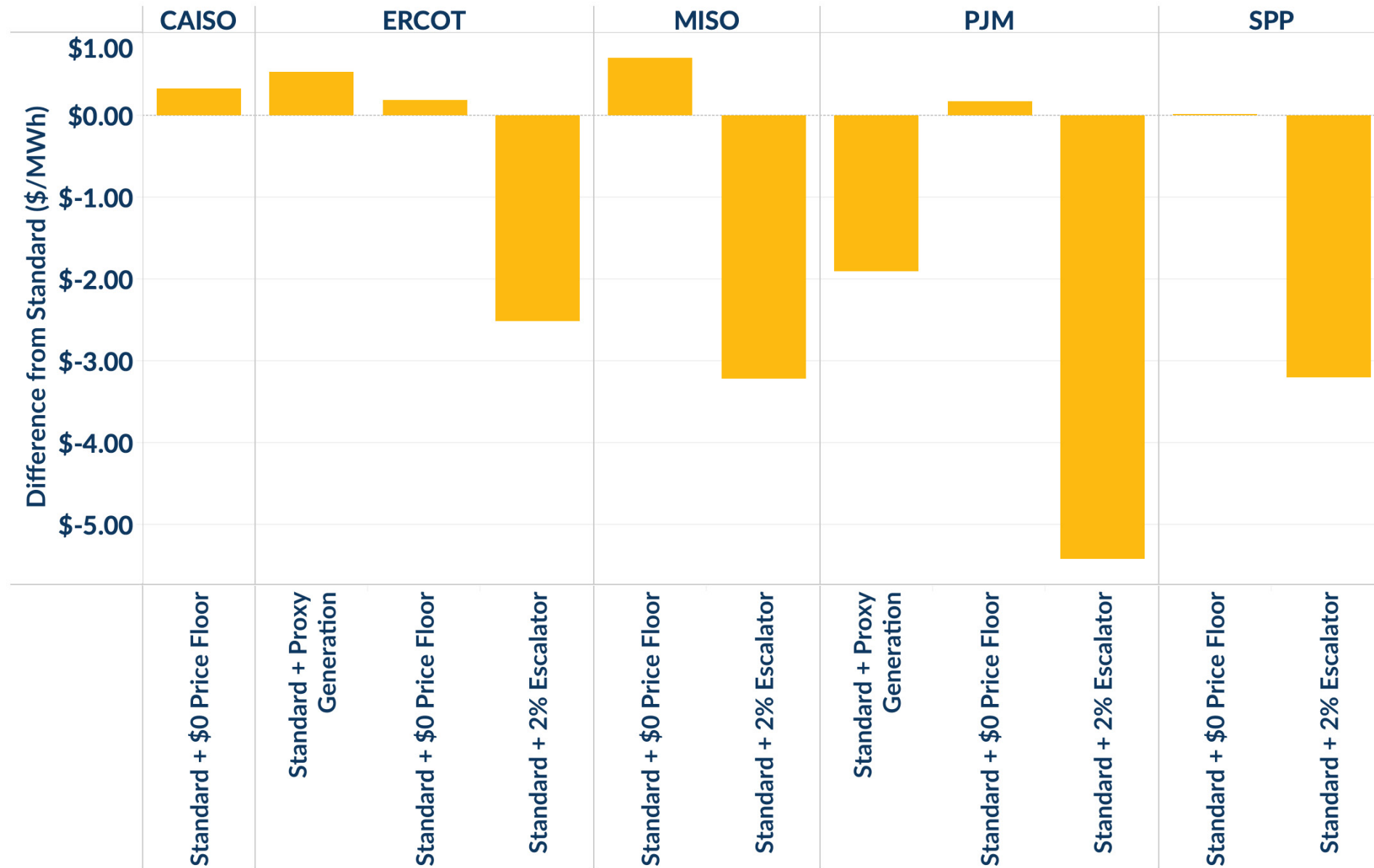
Solar Net Capacity Factor by Market



Wind Net Capacity Factor by Market

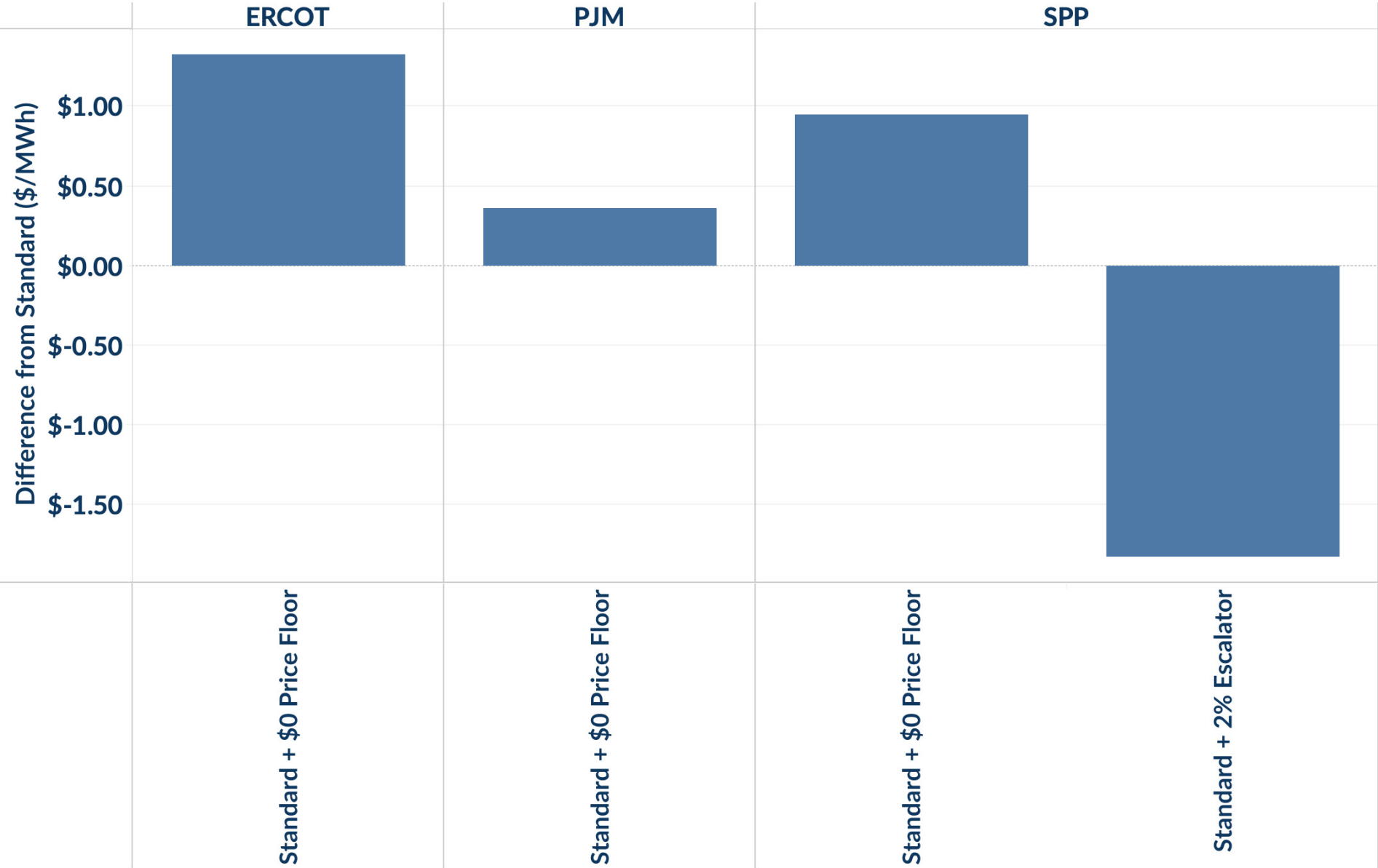


Solar Average Price Difference from Standard



This graph shows the average difference in PPA Price (\$/MWh) for each "Standard +" variant from the Standard.

Wind Average Price Difference from Standard



This graph shows the average difference in PPA Price (\$/MWh) for each "Standard +" variant from the Standard.

LevelTen Marketplace

AESO Insights



Market Snapshot

All prices and metrics are shown in \$ USD and are based on developers' exchange rate assumptions.

Marketplace metrics

Percentile (25) of Price	\$37.22/MWh
Percentile (50) of Price	\$39.00/MWh
Percentile (75) of Price	\$51.78/MWh
Average Nameplate Capacity	144 MW

Wind metrics

Percentile (25) of Price	\$36.57/MWh
Percentile (50) of Price	\$37.55/MWh
Percentile (75) of Price	\$38.50/MWh
Average Nameplate	146 MW

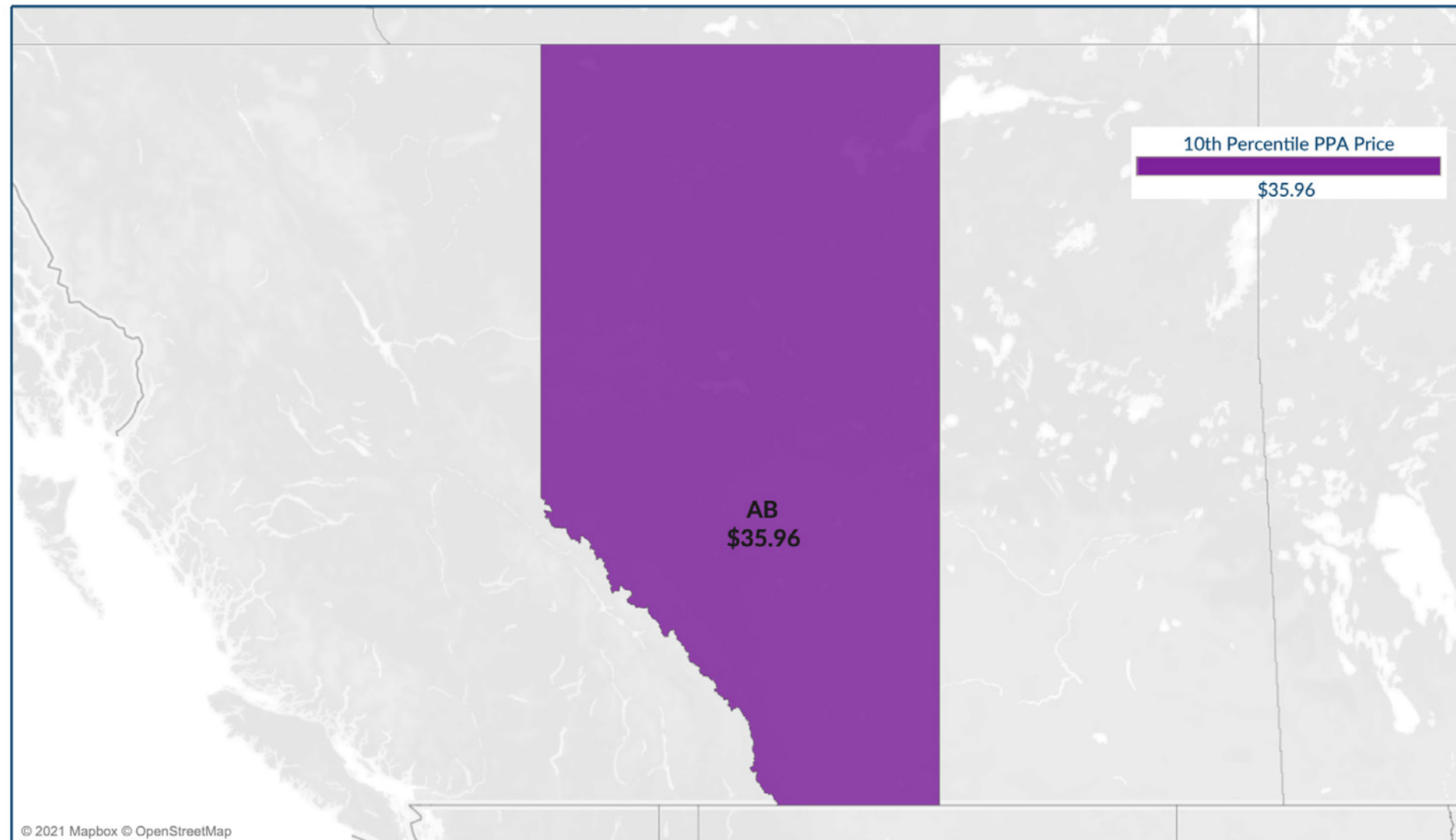
Solar metrics

Percentile (25) of Price	\$52.95/MWh
Percentile (50) of Price	\$54.51/MWh
Percentile (75) of Price	\$55.42/MWh
Average Nameplate Capacity	143 MW



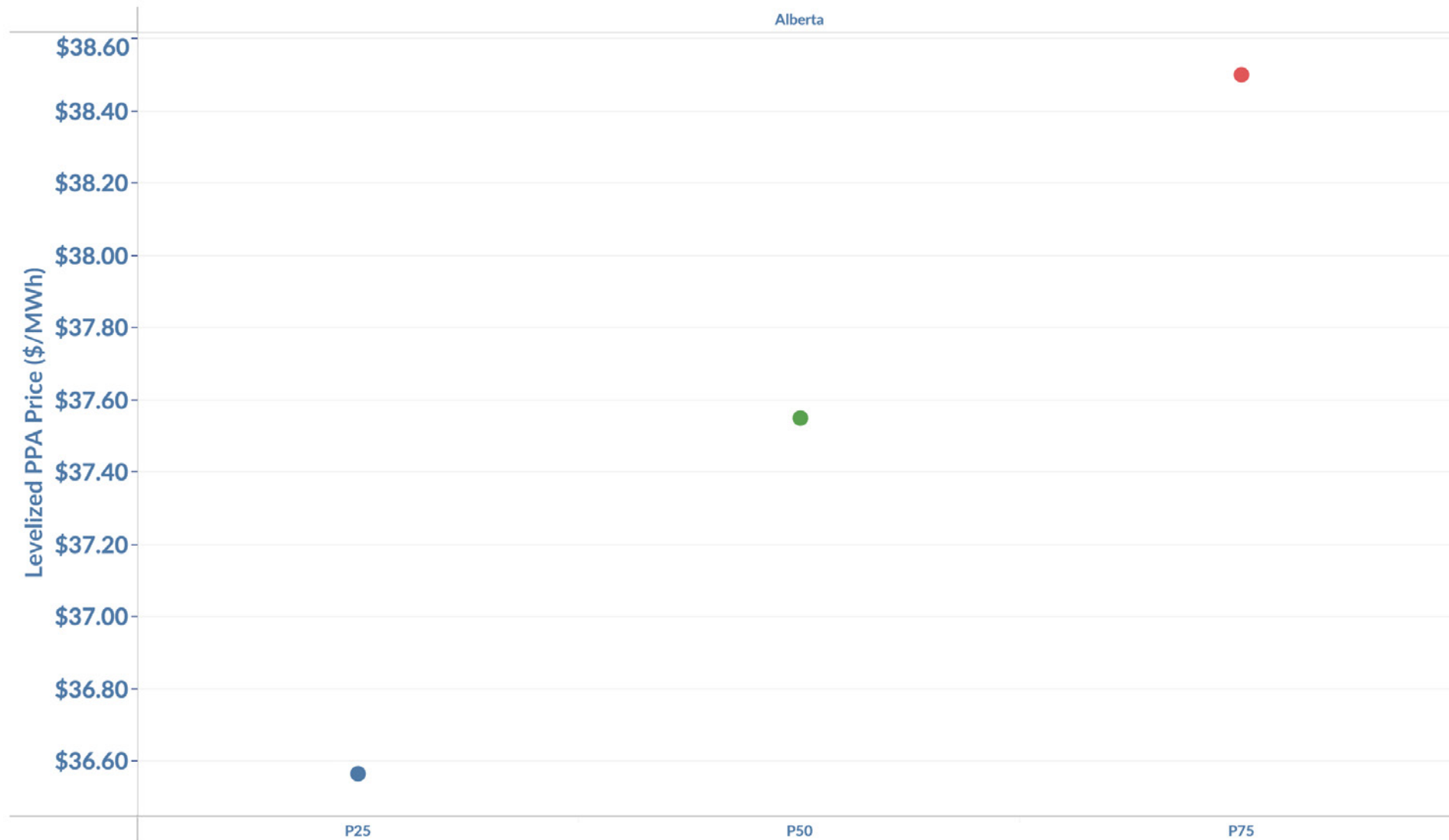
Wind PPA Prices

10th Percentile of Levelized PPA Prices (\$ USD/MWh)



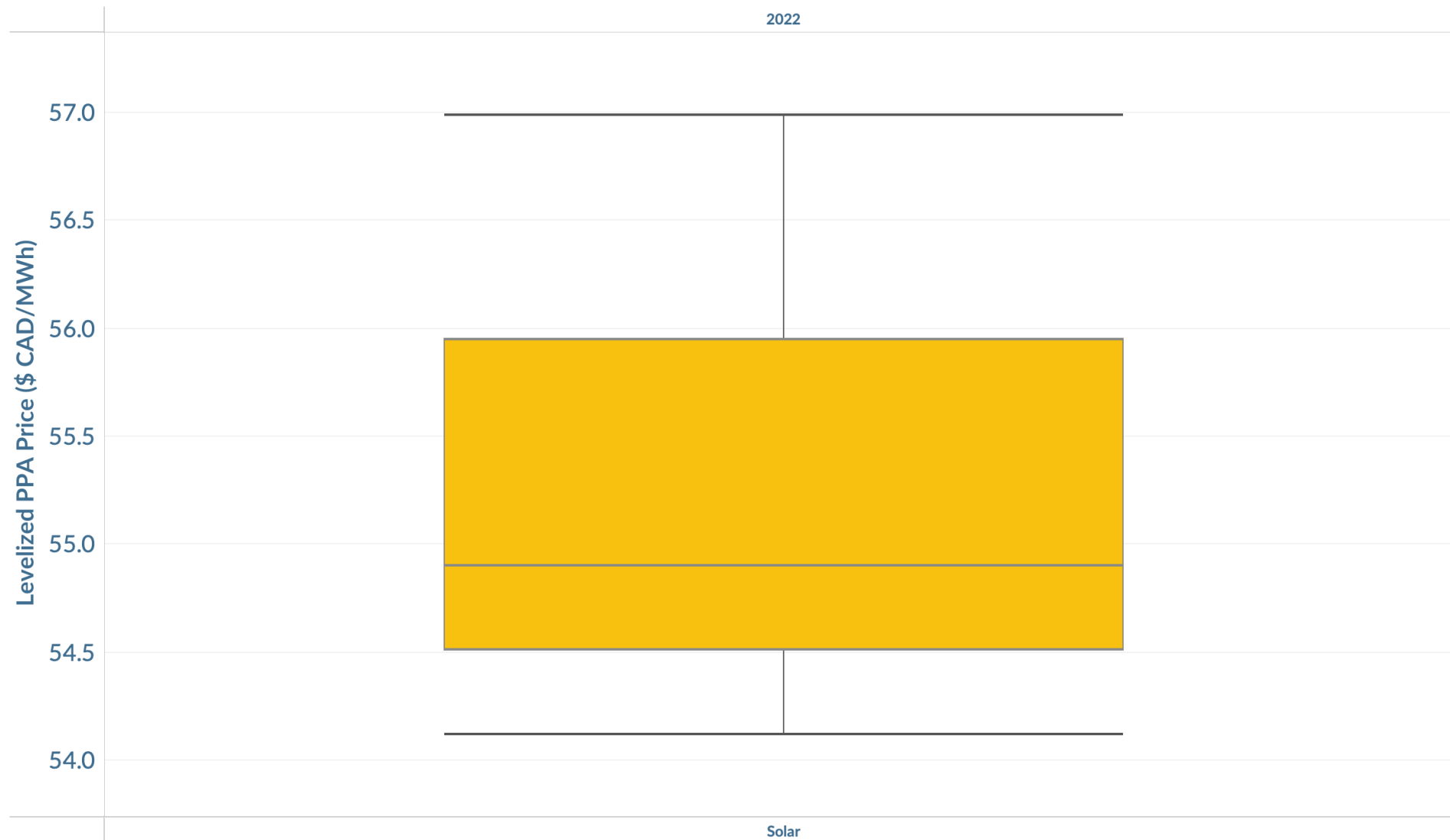


Wind PPA Prices (P25, P50, P75)





PPA Prices by Contract Start Year and Technology

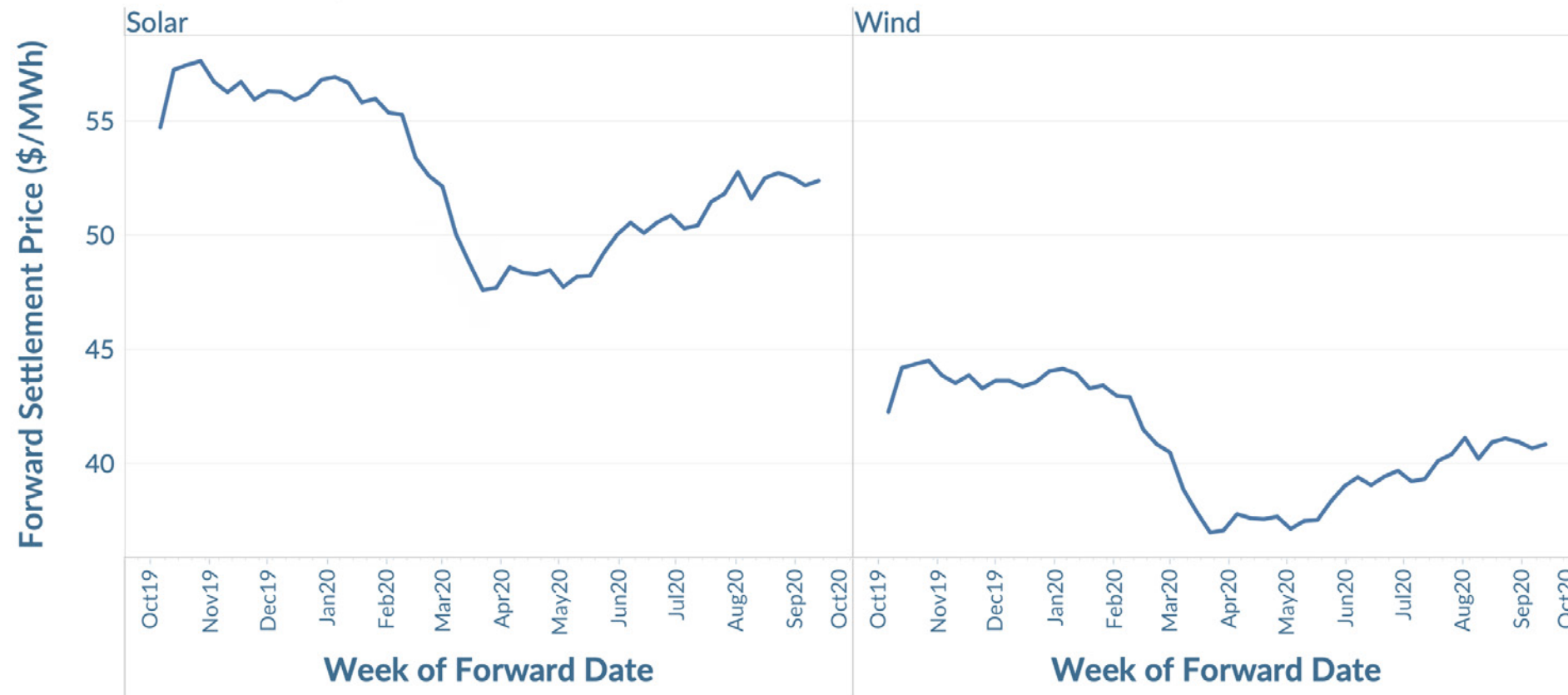




Generation-weight Forward Curves

Generation-weighted Forward Market Prices

OTCGHSD 15-year projections



This graph shows the generation-weighted levelized 15-year OTCGHSD forwards that LevelTen used on a weekly basis over the last twelve months to calculate the Projected Values for offers. Generation is based on average solar and wind production profiles for the market.

Settlement Hub

■ Alberta

LevelTen Marketplace

CAISO Insights





Market Snapshot

Marketplace metrics

Percentile (25) of Price	\$26.00/MWh
Percentile (50) of Price	\$30.50/MWh
Percentile (75) of Price	\$38.00/MWh
Average Nameplate Capacity	214 MW

Wind metrics

Percentile (25) of Price	\$48.00/MWh
Percentile (50) of Price	\$49.00/MWh
Percentile (75) of Price	\$51.63/MWh
Average Nameplate	138 MW

Solar metrics

Percentile (25) of Price	\$25.50/MWh
Percentile (50) of Price	\$28.00/MWh
Percentile (75) of Price	\$32.00/MWh
Average Nameplate Capacity	232 MW



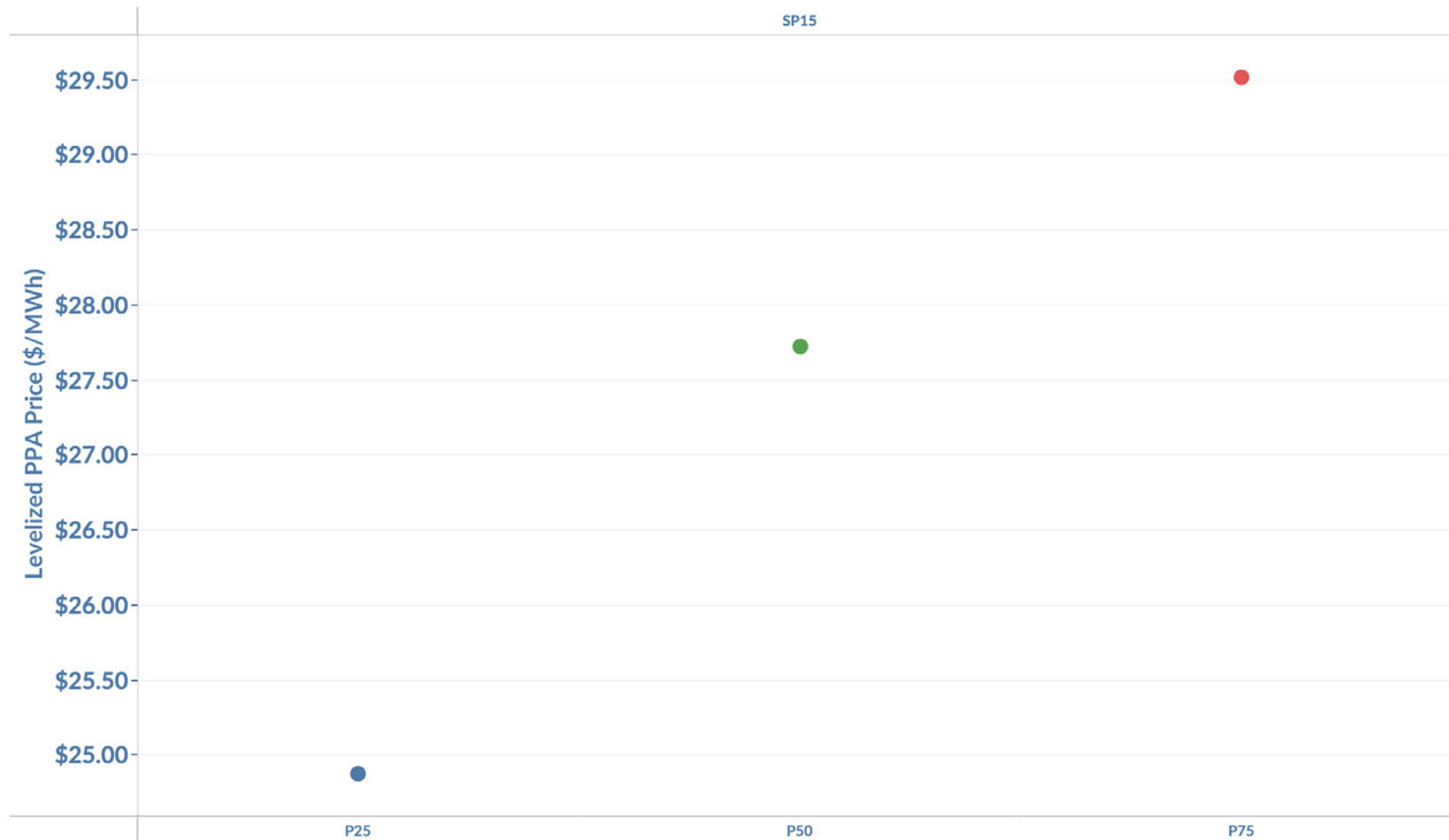
Solar PPA Prices (P10)

10th Percentile of Levelized PPA Prices (\$ USD/MWh)





Solar PPA Prices (P25, P50, P75)



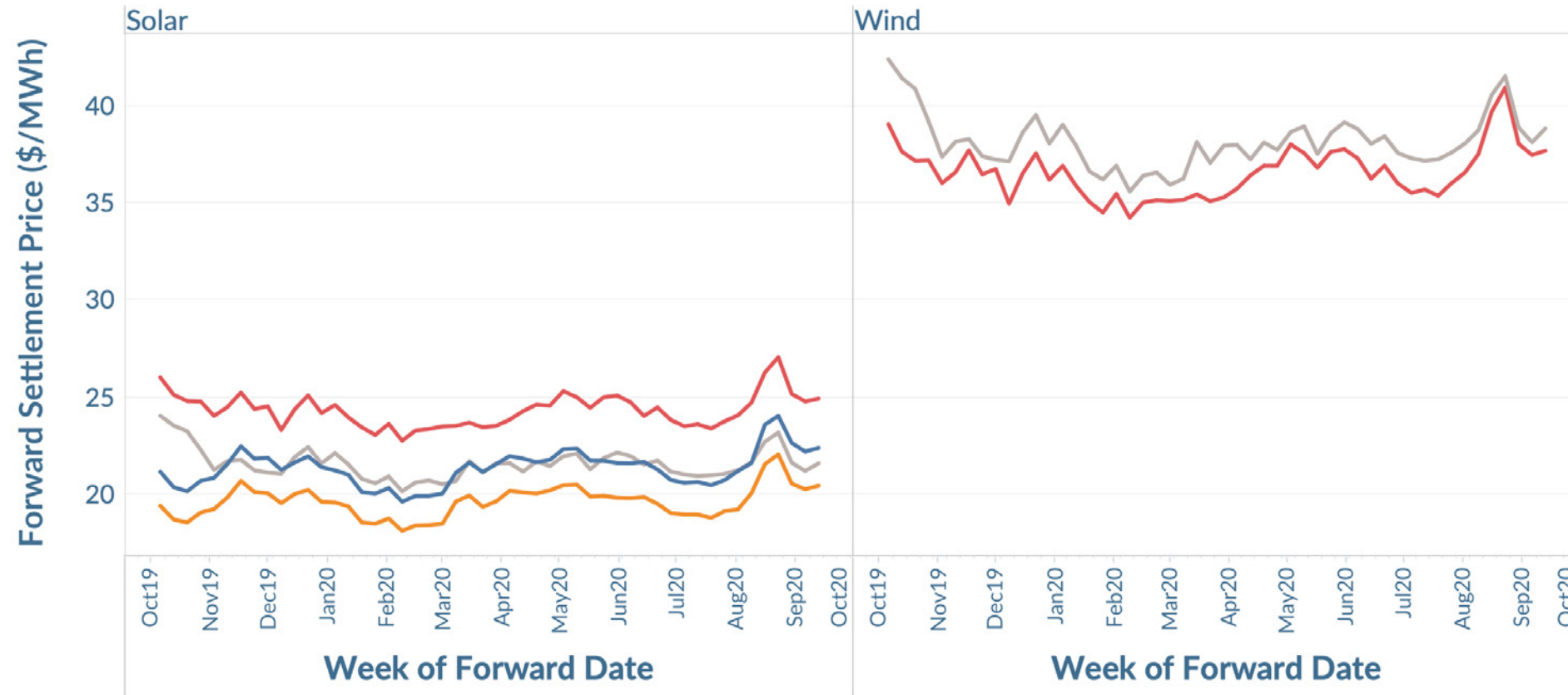


PPA Prices by Contract Start Year and Technology





Generation-weighted Forward Curves



This graph shows the generation-weighted levelized 15-year OTCGHS forward values that LevelTen used on a weekly basis over the last twelve months to calculate the Projected Values for offers. Generation is based on average solar and wind production profiles for the market.

Settlement Hub

- Four Corners
- NP15
- Palo Verde
- SP15

LevelTen Marketplace

ERCOT Insights



Market Snapshot

Marketplace metrics

Percentile (25) of Price	\$26.11/MWh
Percentile (50) of Price	\$28.57/MWh
Percentile (75) of Price	\$31.35/MWh
Average Nameplate Capacity	198 MW

Wind metrics

Percentile (25) of Price	\$18.70/MWh
Percentile (50) of Price	\$20.38/MWh
Percentile (75) of Price	\$22.77/MWh
Average Nameplate	293 MW

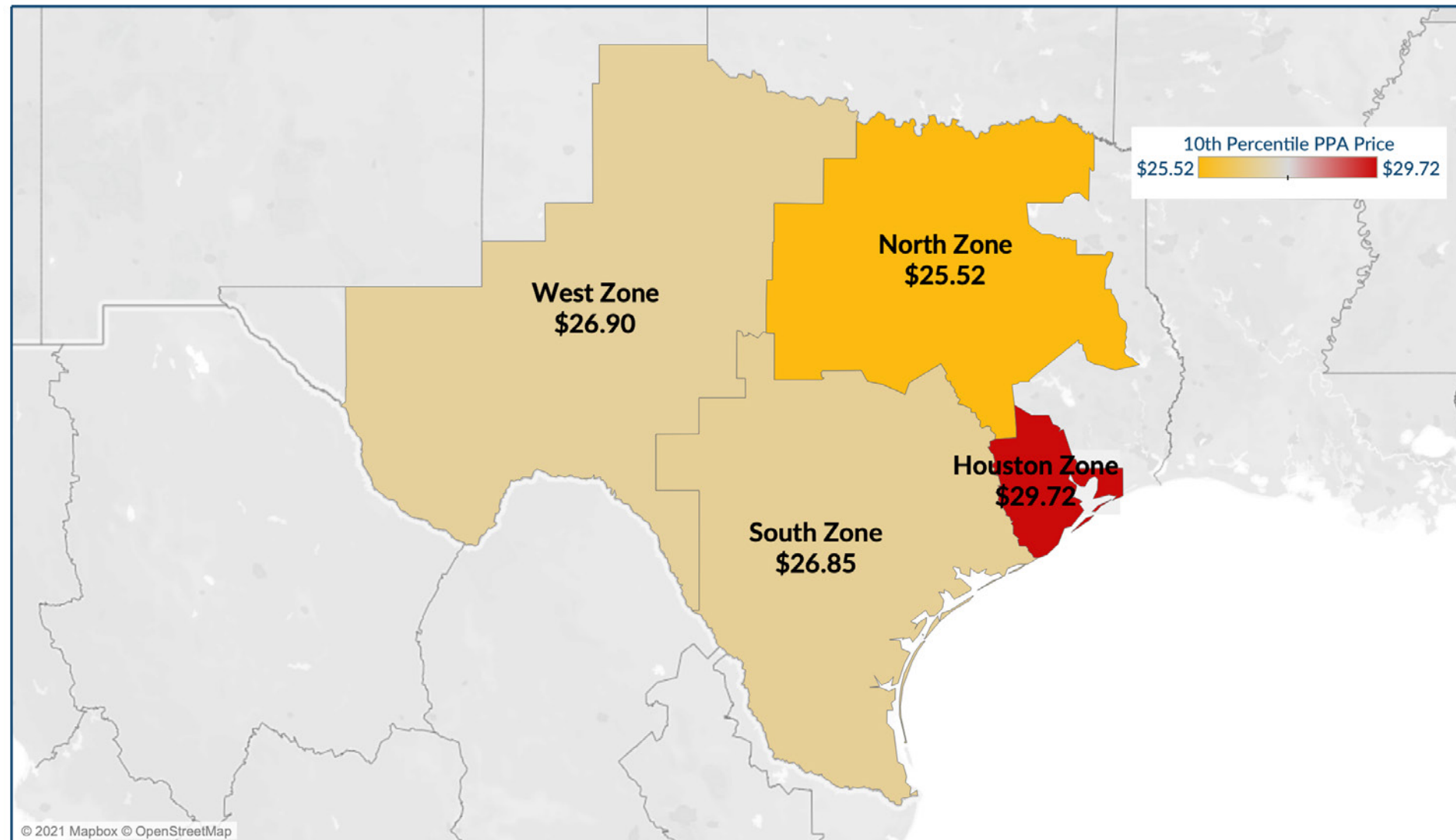
Solar metrics

Percentile (25) of Price	\$27.10/MWh
Percentile (50) of Price	\$29.38/MWh
Percentile (75) of Price	\$31.81/MWh
Average Nameplate Capacity	176 MW



Solar PPA Prices

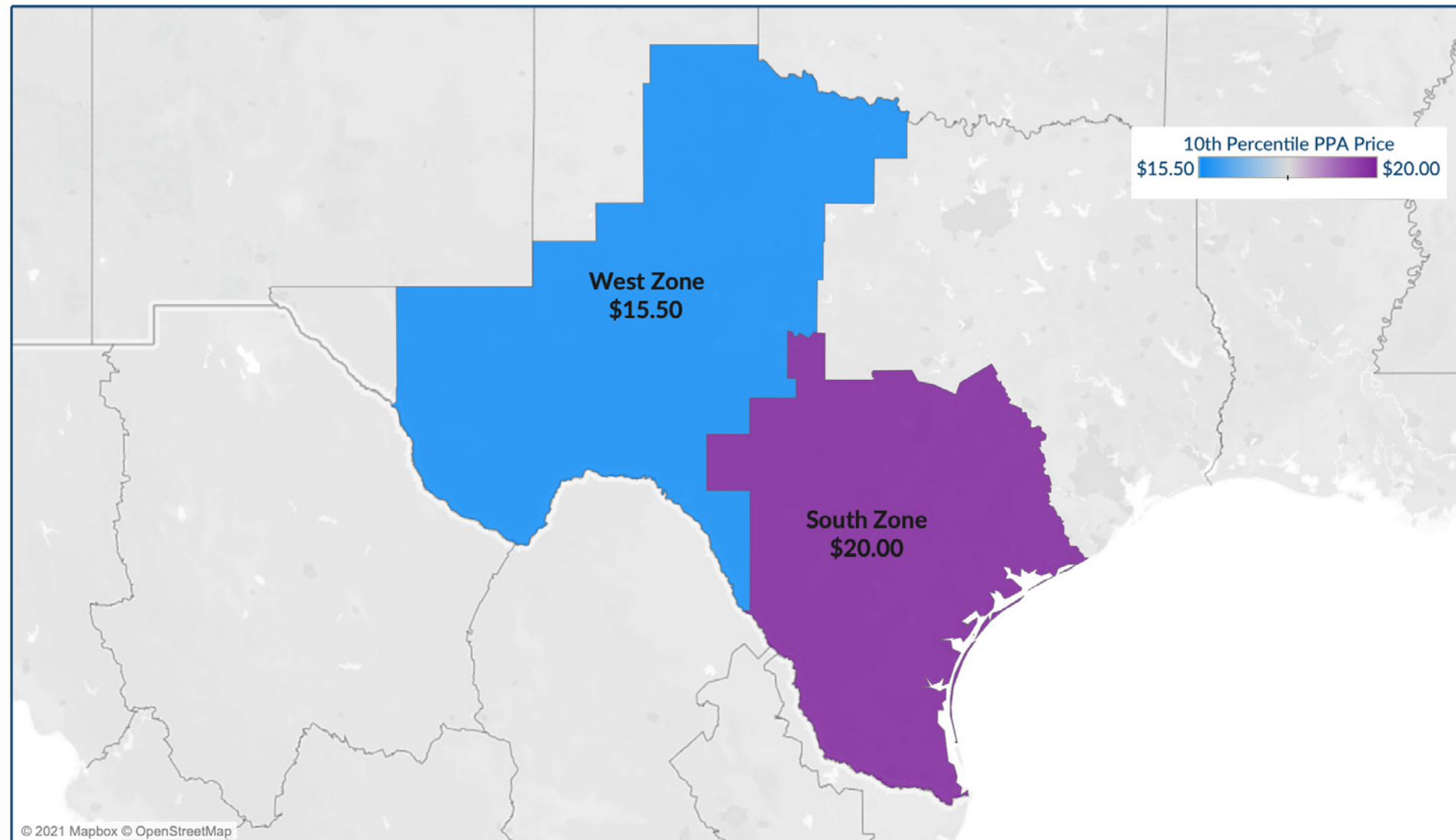
10th Percentile of Levelized PPA Prices (\$ USD/MWh)





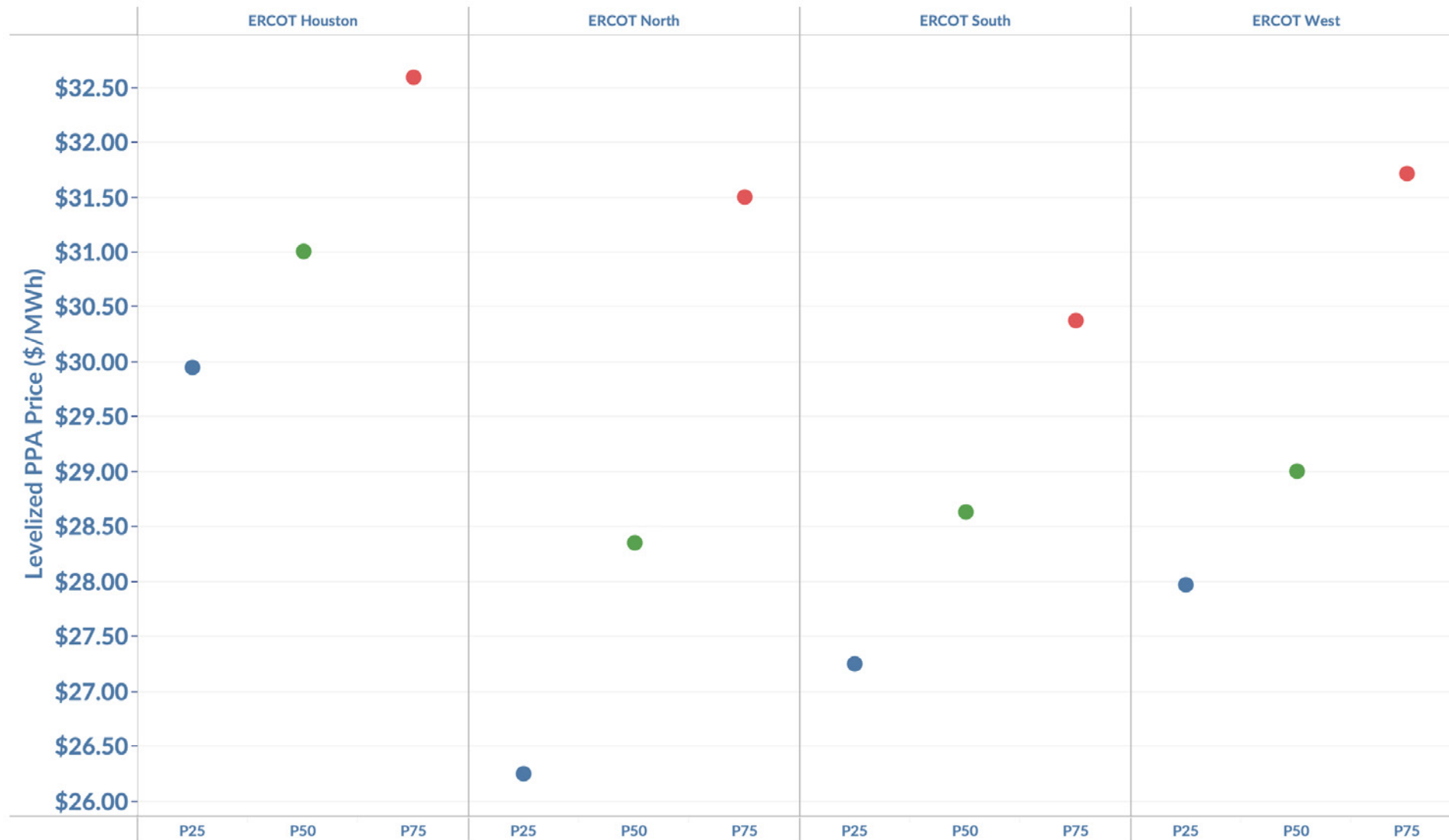
Wind PPA Prices

10th Percentile of Levelized PPA Prices (\$ USD/MWh)





Solar PPA Prices (P25, P50, P75)



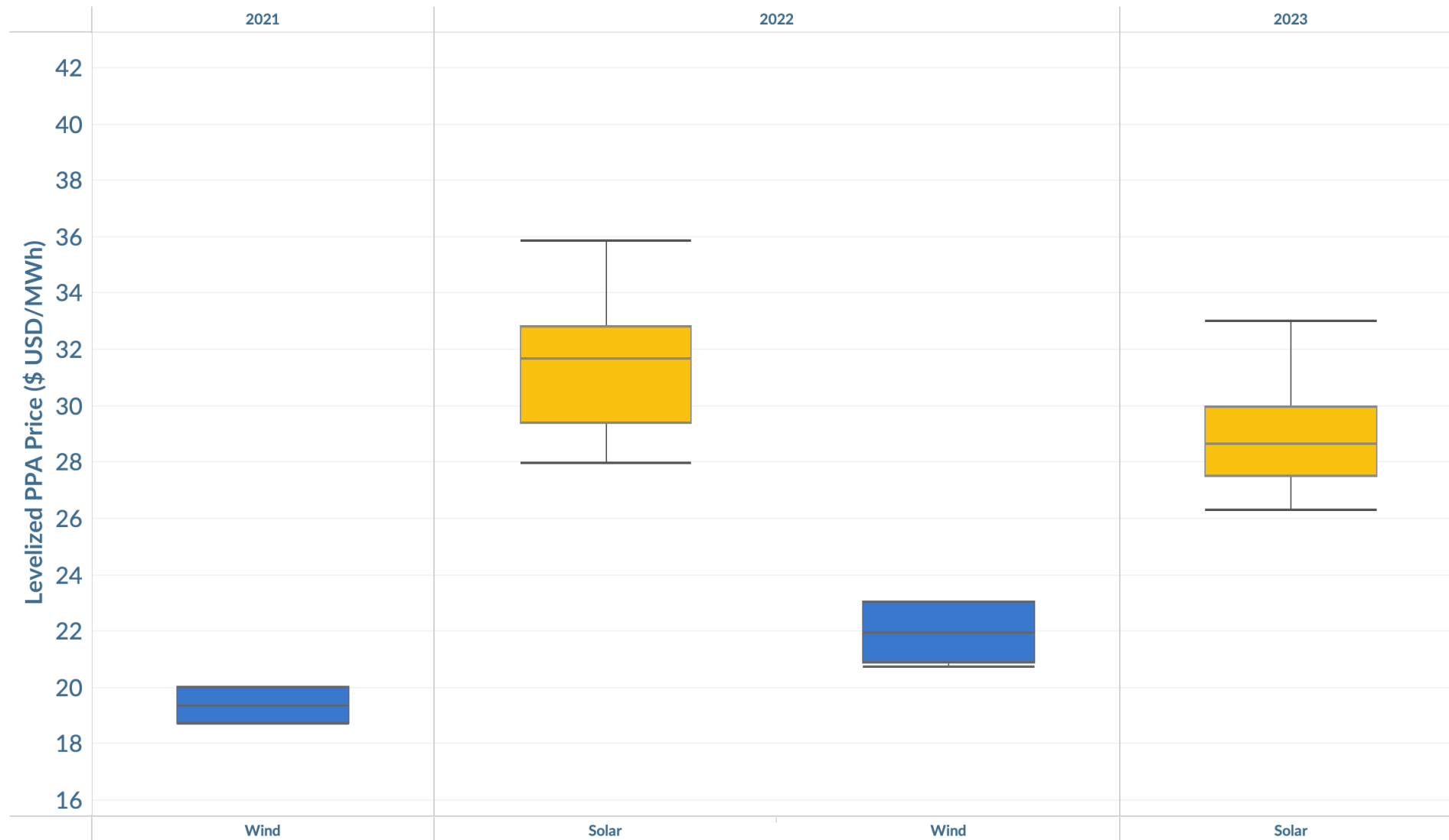


Wind PPA Prices (P25, P50, P75)



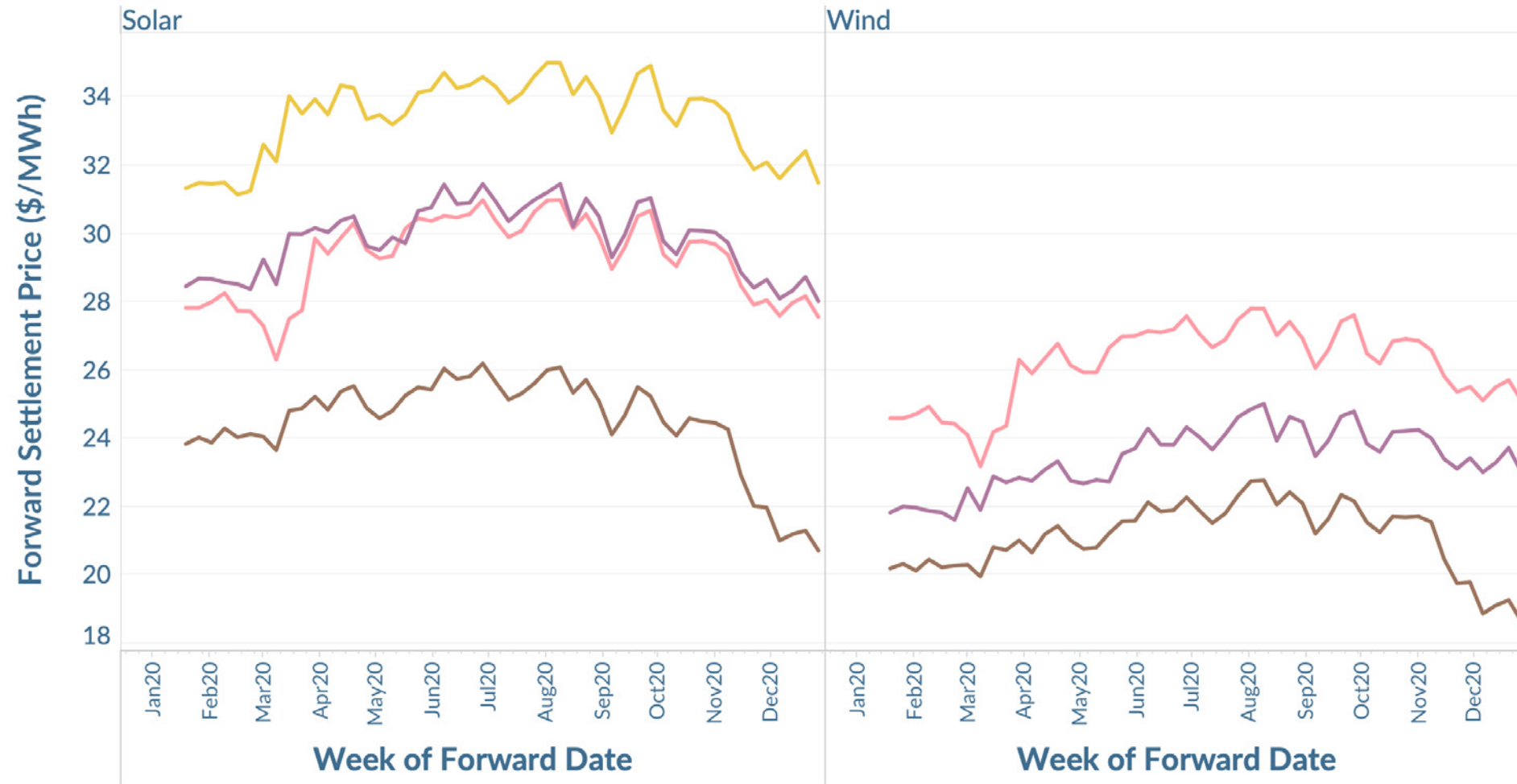


PPA Prices by Contract Start Year and Technology





Generation-weight Forward Curves



This graph shows the generation-weighted levelized 15-year OTCGHS forward that LevelTen used on a weekly basis over the last twelve months to calculate the Projected Values for offers. Generation is based on average solar and wind production profiles for the market.

Settlement Hub

- Houston Zone
- North Zone
- South Zone
- West Zone

LevelTen Marketplace

MISO Insights





Market Snapshot

Marketplace metrics

Percentile (25) of Price	\$33.20/MWh
Percentile (50) of Price	\$35.00/MWh
Percentile (75) of Price	\$37.80/MWh
Average Nameplate Capacity	145 MW

Wind metrics

Percentile (25) of Price	\$33.00/MWh
Percentile (50) of Price	\$35.00/MWh
Percentile (75) of Price	\$37.84/MWh
Average Nameplate Capacity	227 MW

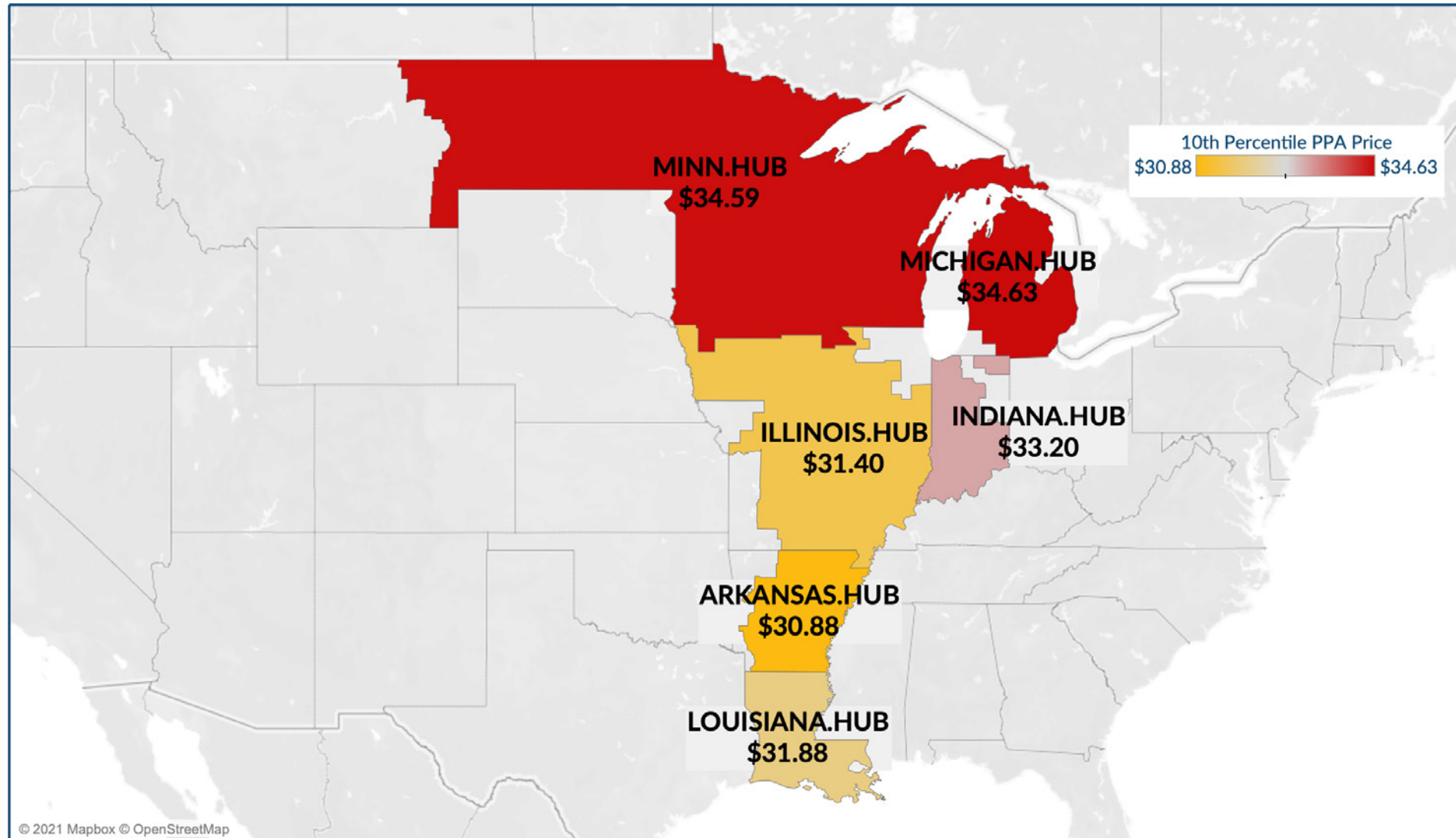
Solar metrics

Percentile (25) of Price	\$33.38/MWh
Percentile (50) of Price	\$34.98MWh
Percentile (75) of Price	\$37.68/MWh
Average Nameplate Capacity	132 MW



Solar PPA Prices

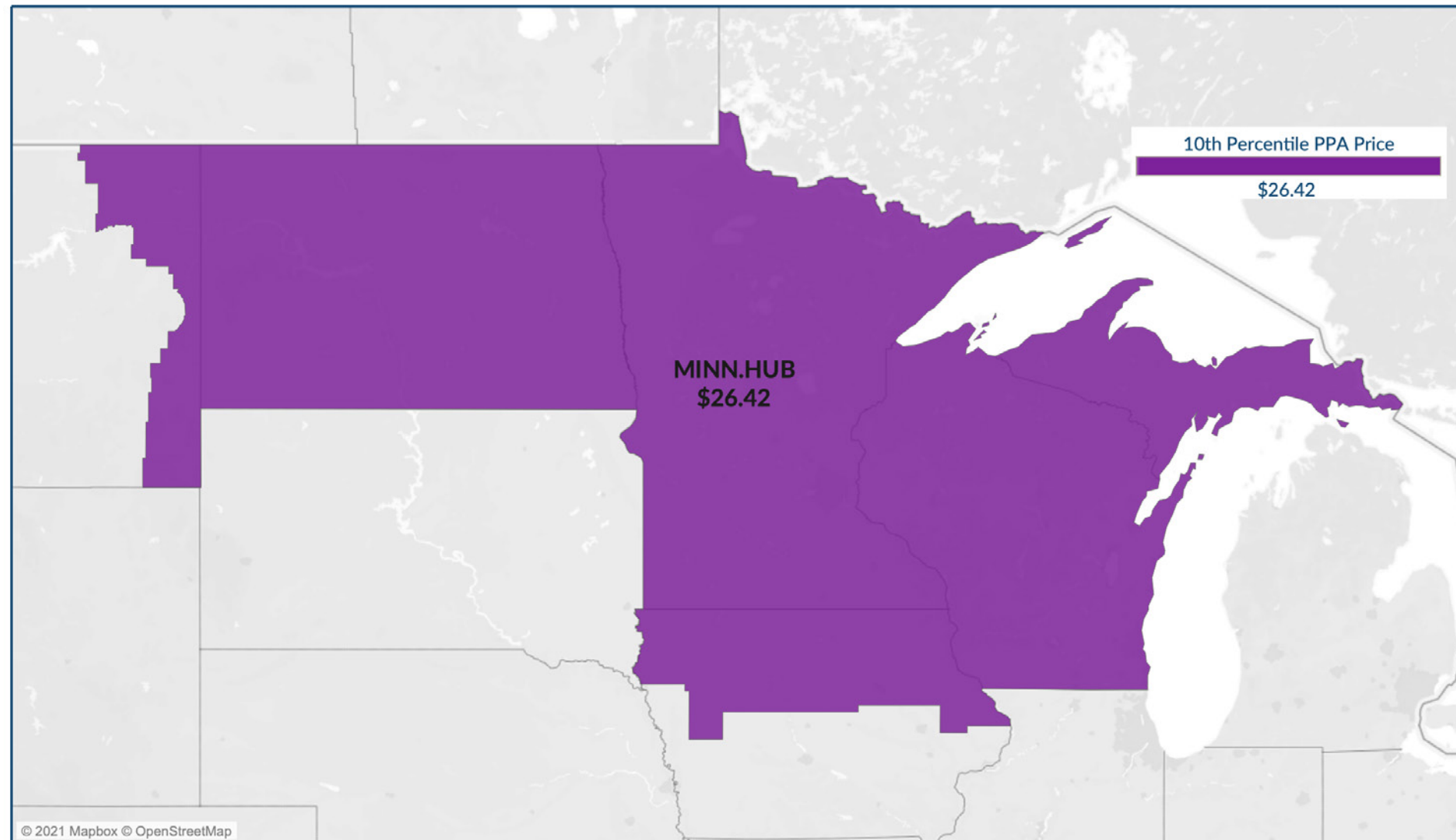
10th Percentile of Levelized PPA Prices (\$ USD/MWh)





Wind PPA Prices

10th Percentile of Levelized PPA Prices (\$ USD/MWh)



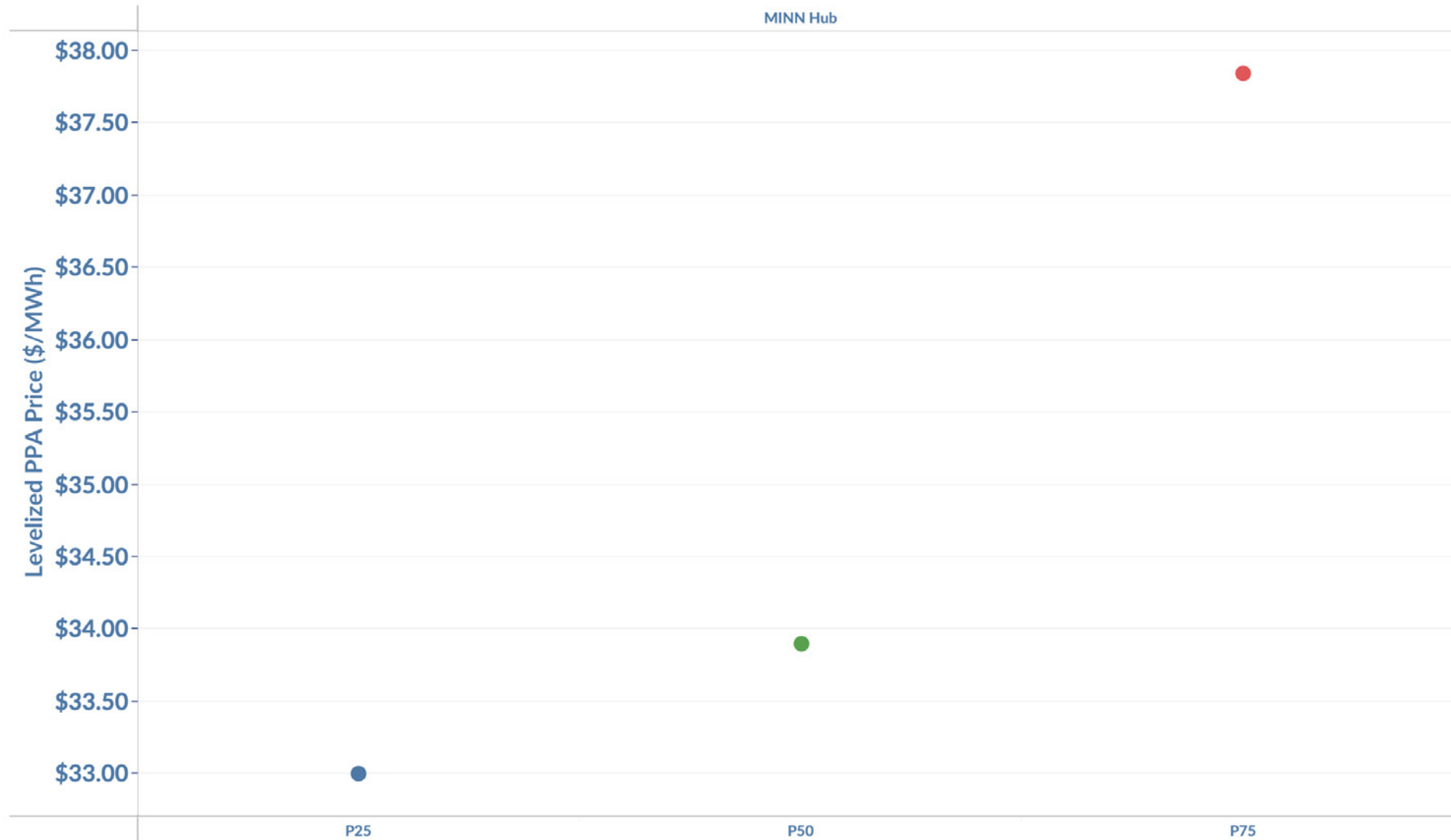


Solar PPA Prices (P25, P50, P75)



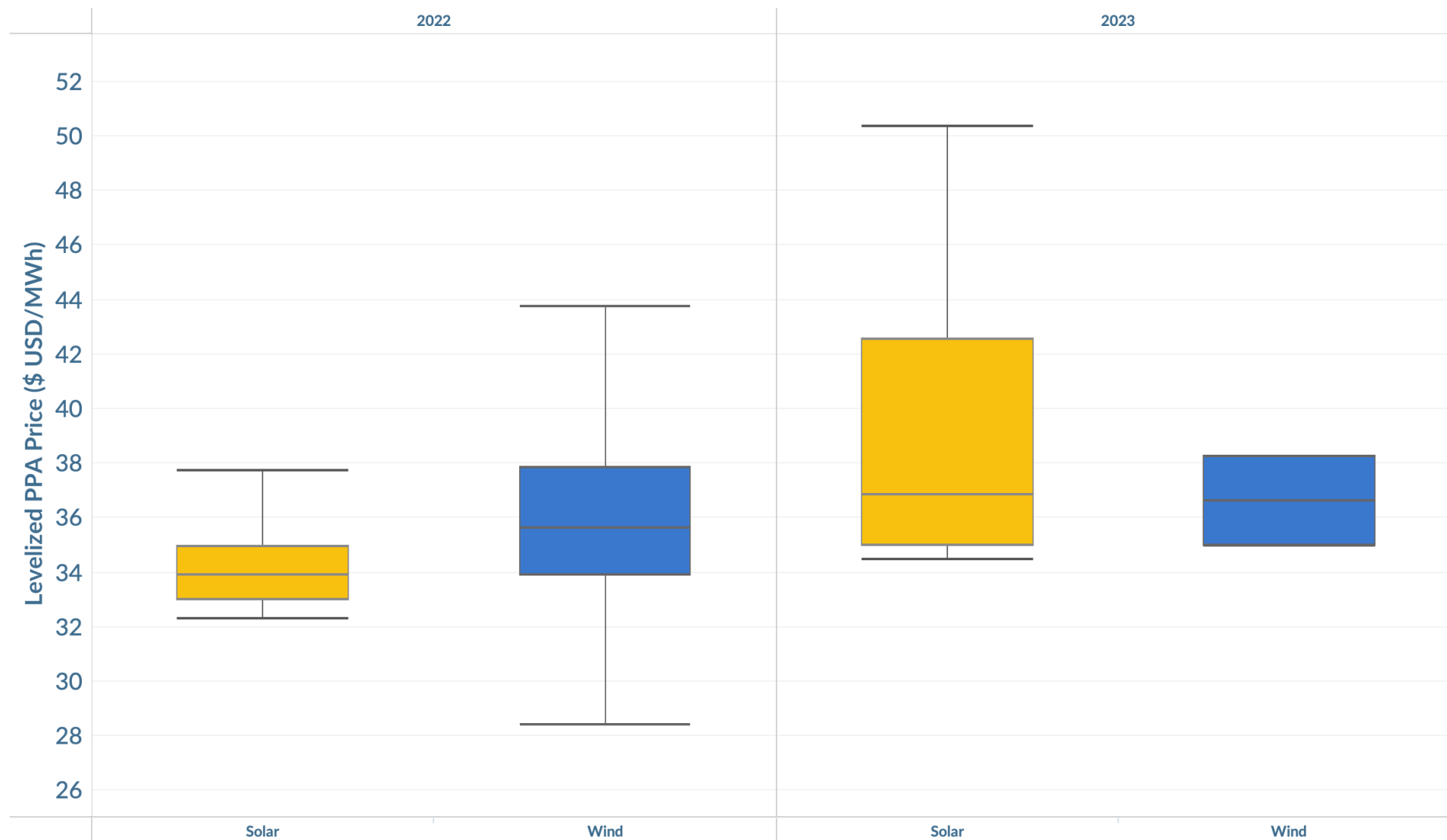


Wind PPA Prices (P25, P50, P75)



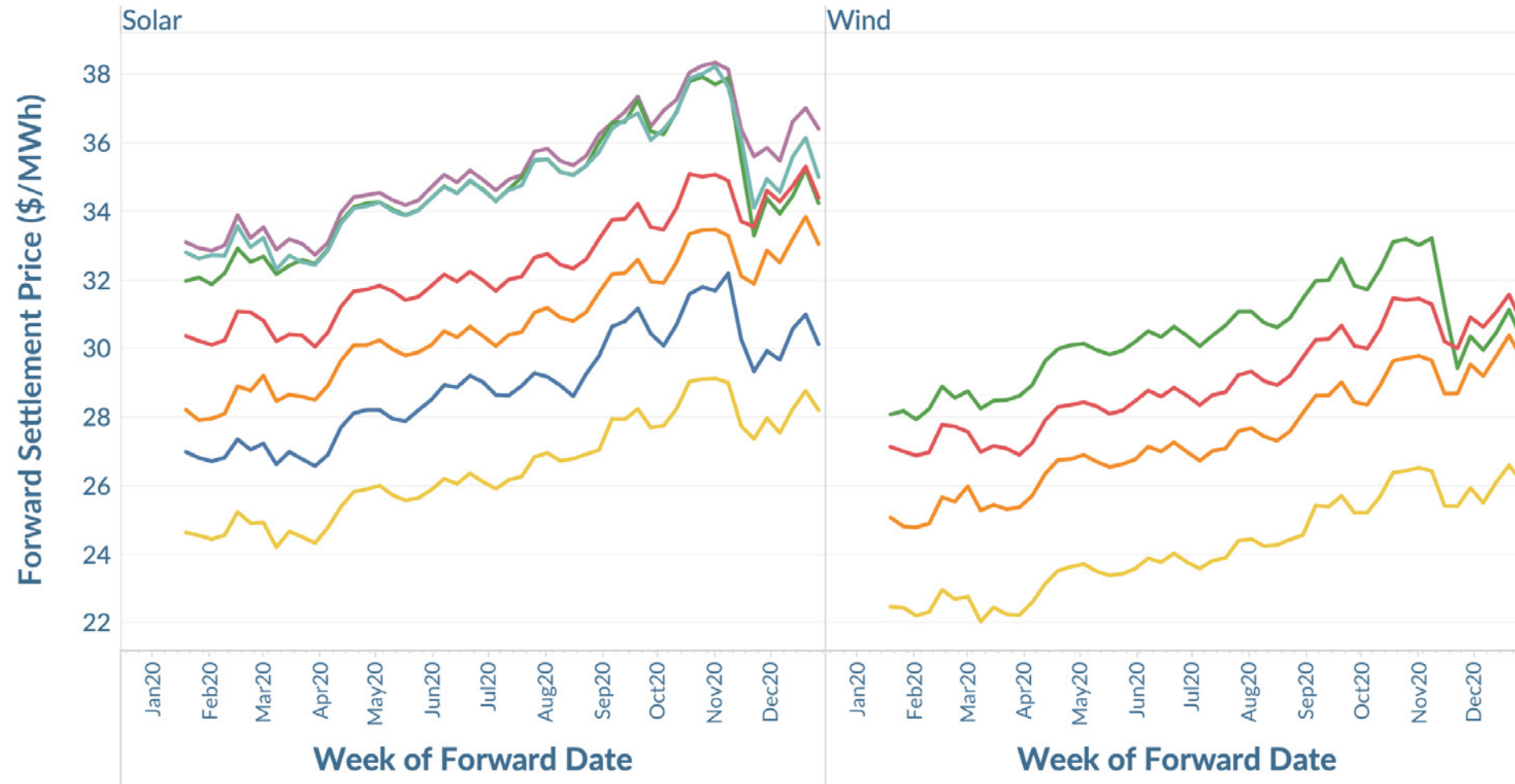


PPA Prices by Contract Start Year and Technology





Generation-weight Forward Curves



This graph shows the generation-weighted levelized 15-year OTCGHS forward that LevelTen used on a weekly basis over the last twelve months to calculate the Projected Values for offers. Generation is based on average solar and wind production profiles for the market.

Settlement Hub

- ARKANSAS.HUB
- ILLINOIS.HUB
- INDIANA.HUB
- LOUISIANA.HUB
- MICHIGAN.HUB
- TEXAS.HUB
- MINN.HUB

LevelTen Marketplace
PJM Insights





Market Snapshot

Marketplace metrics

Percentile (25) of Price	\$37.50/MWh
Percentile (50) of Price	\$39.95/MWh
Percentile (75) of Price	\$46.35/MWh
Average Nameplate Capacity	100 MW

Wind metrics

Percentile (25) of Price	\$35.25/MWh
Percentile (50) of Price	\$36.90/MWh
Percentile (75) of Price	\$47.50/MWh
Average Nameplate Capacity	173 MW

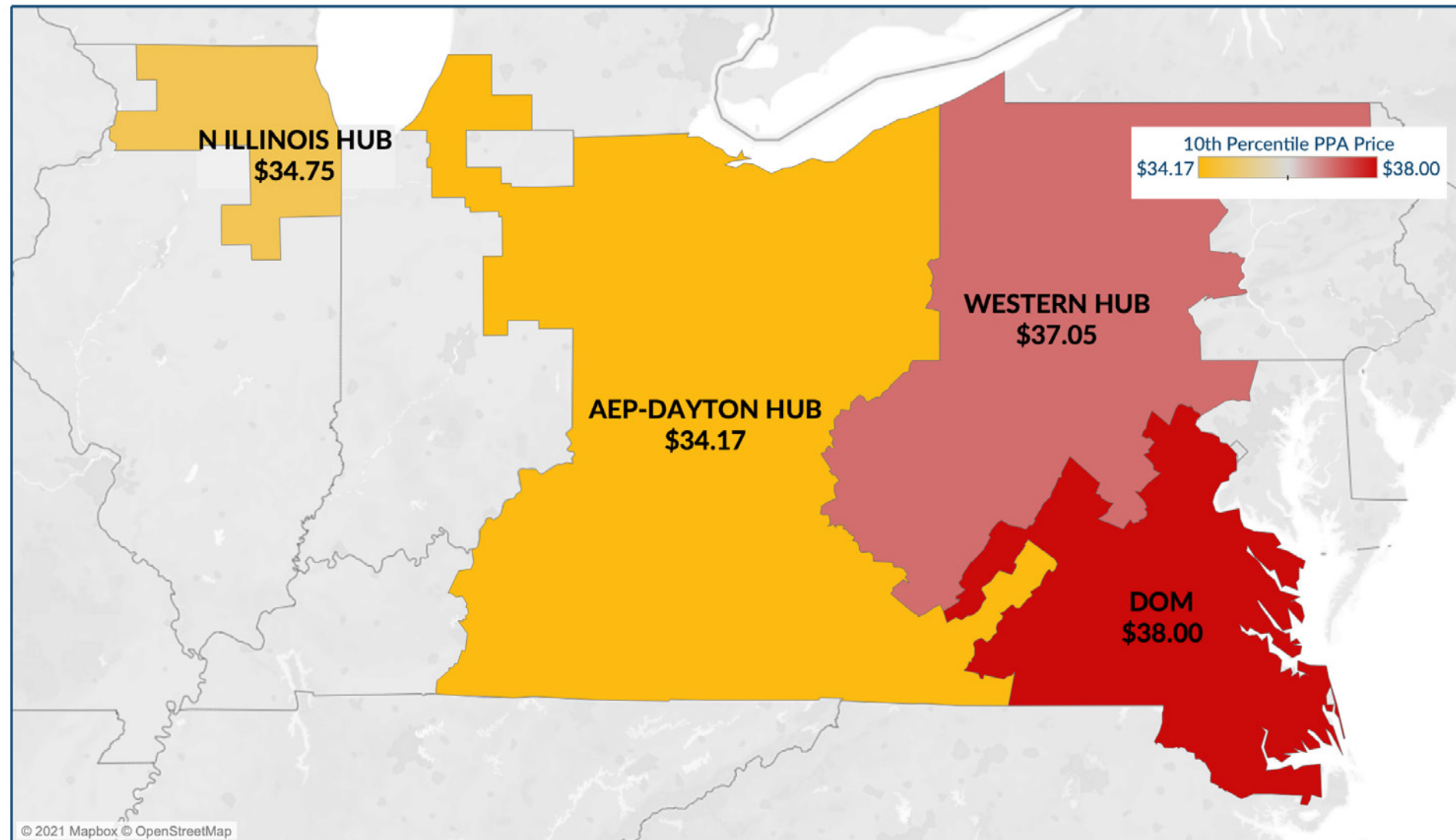
Solar metrics

Percentile (25) of Price	\$37.83/MWh
Percentile (50) of Price	\$39.98/MWh
Percentile (75) of Price	\$45.98/MWh
Average Nameplate Capacity	90 MW



Solar PPA Prices

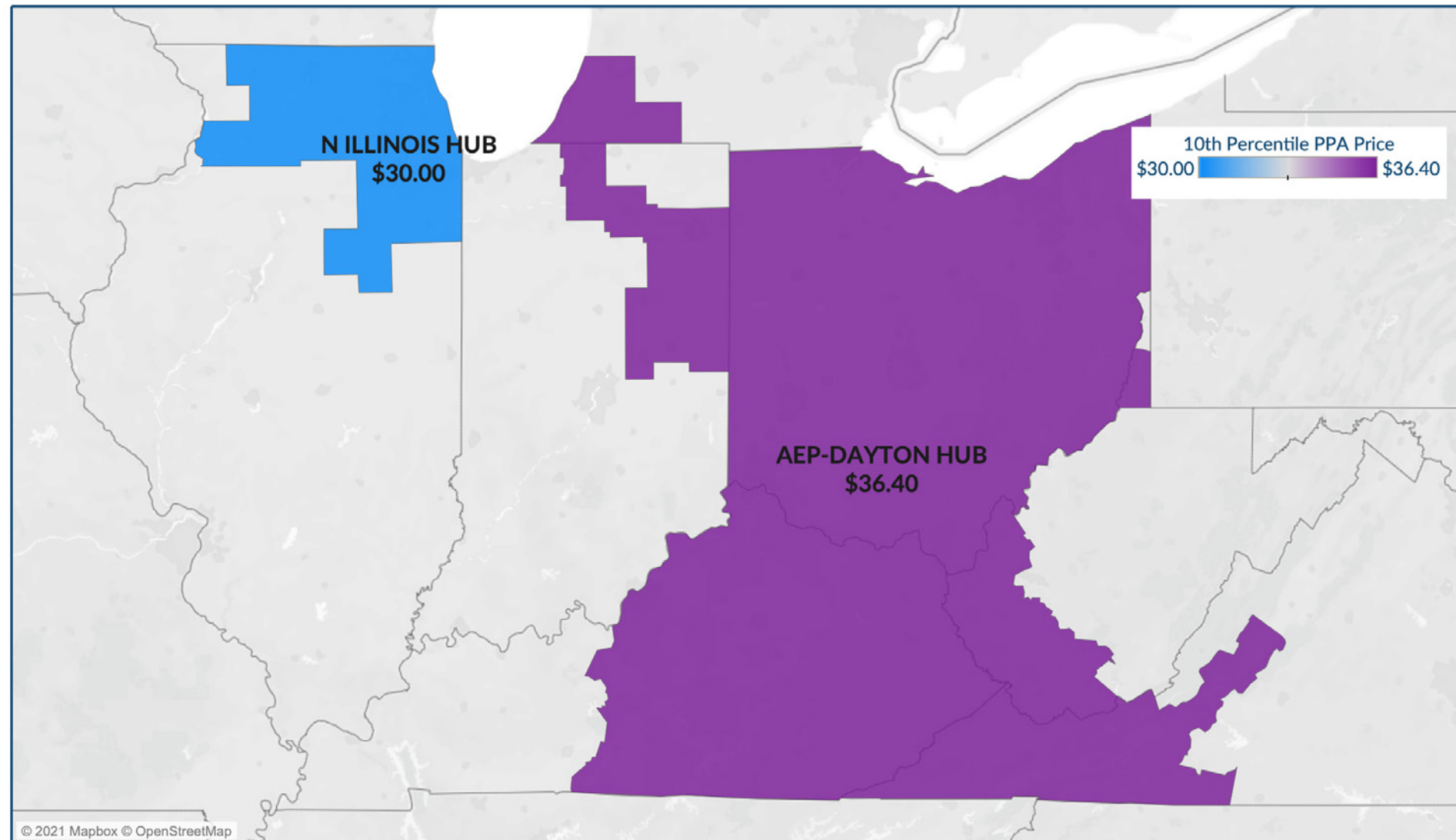
10th Percentile of Levelized PPA Prices (\$ USD/MWh)





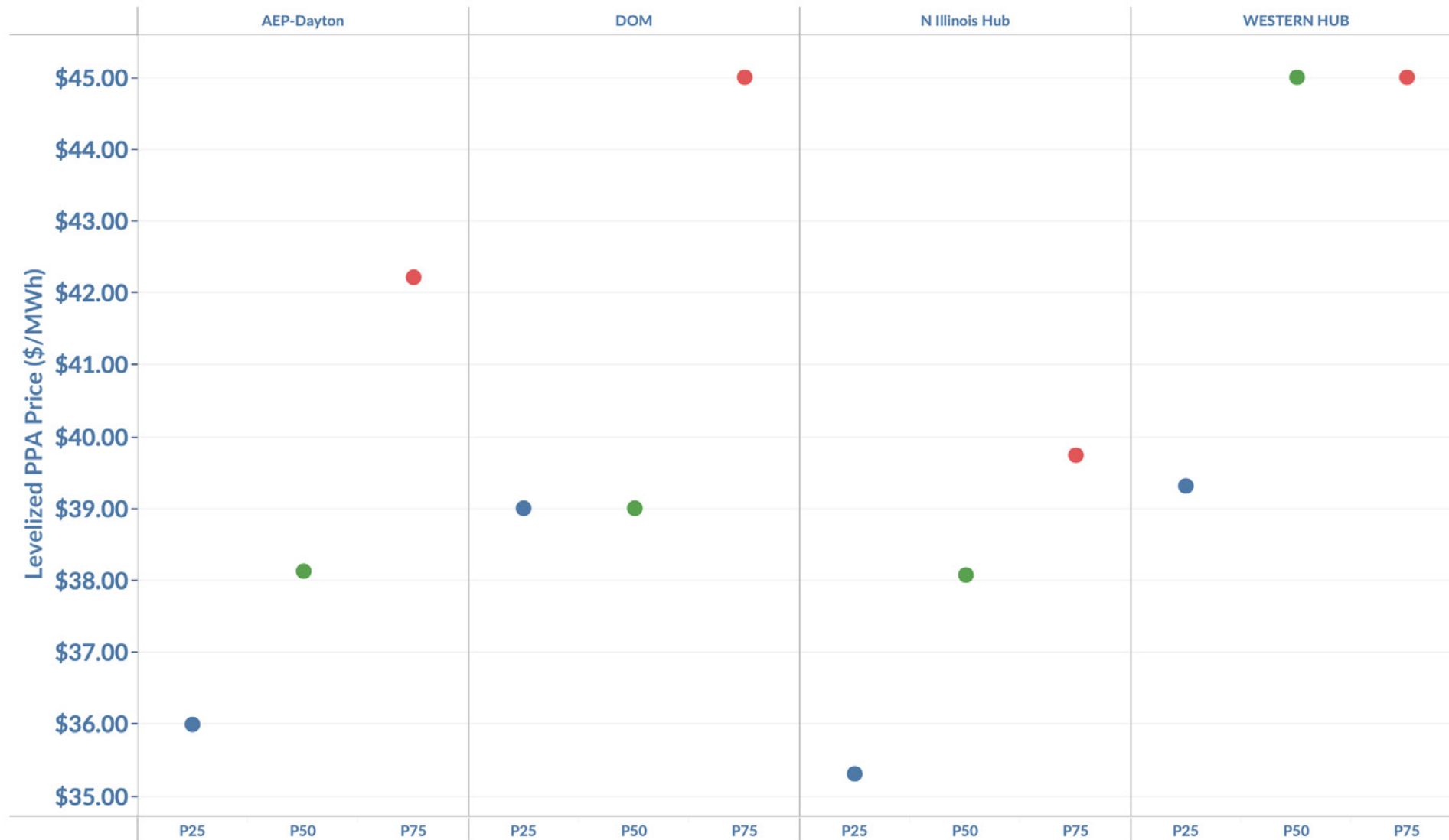
Wind PPA Prices

10th Percentile of Levelized PPA Prices (\$ USD/MWh)





Solar PPA Prices (P25, P50, P75)



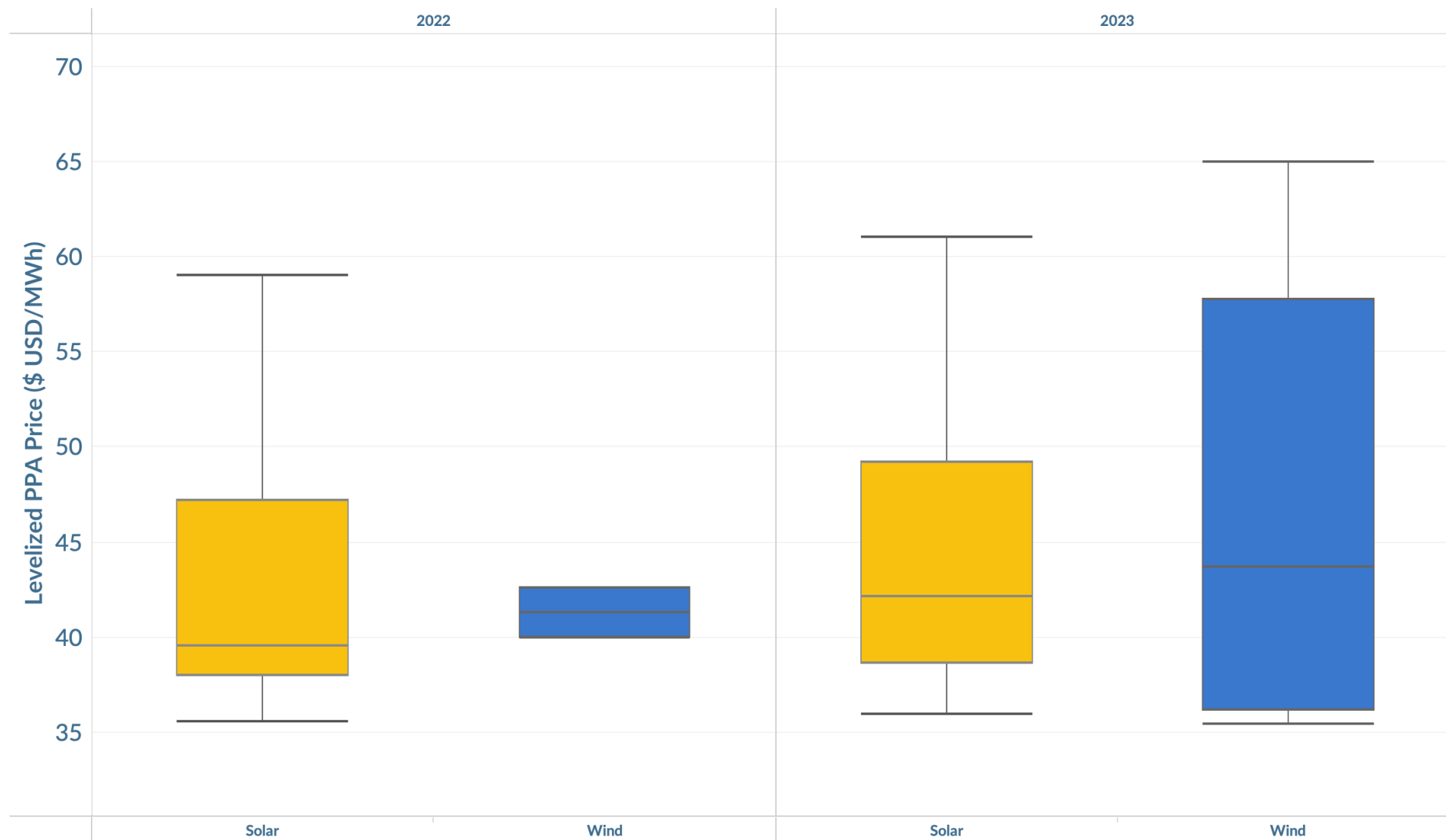


Wind PPA Prices (P25, P50, P75)



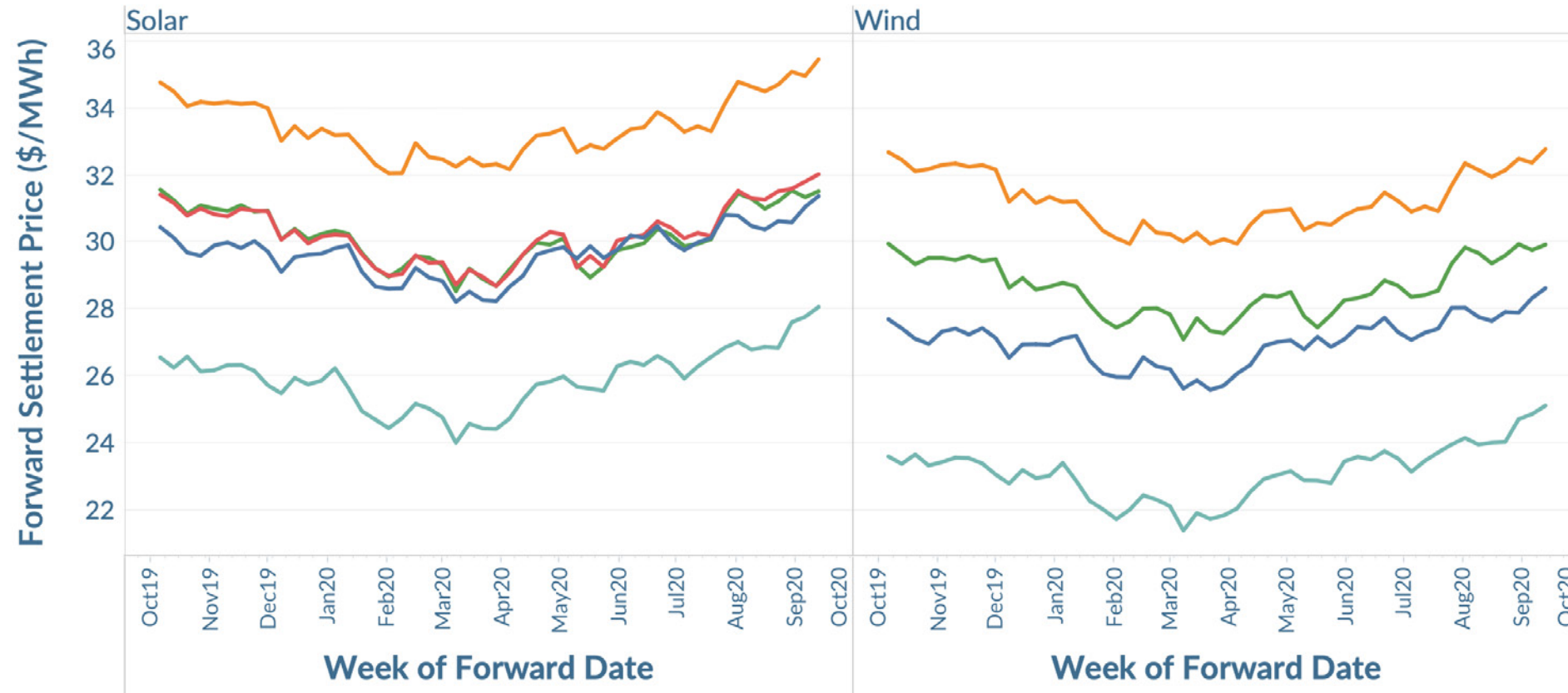


PPA Prices by Contract Start Year and Technology





Generation-weighted Forward Curves



This graph shows the generation-weighted levelized 15-year OTCGSD forwards that LevelTen used on a weekly basis over the last twelve months to calculate the Projected Values for offers. Generation is based on average solar and wind production profiles for the market.

Settlement Hub
■ AEP-DAYTON HUB ■ DOM ■ EASTERN HUB ■ N ILLINOIS HUB ■ WESTERN HUB

LevelTen Marketplace SPP Insights



Market Snapshot

Marketplace metrics

Percentile (25) of Price	\$21.50/MWh
Percentile (50) of Price	\$23.24/MWh
Percentile (75) of Price	\$24.50/MWh
Average Nameplate Capacity	186 MW

Wind metrics

Percentile (25) of Price	\$20.66/MWh
Percentile (50) of Price	\$21.75/MWh
Percentile (75) of Price	\$24.00/MWh
Average Nameplate Capacity	183 MW

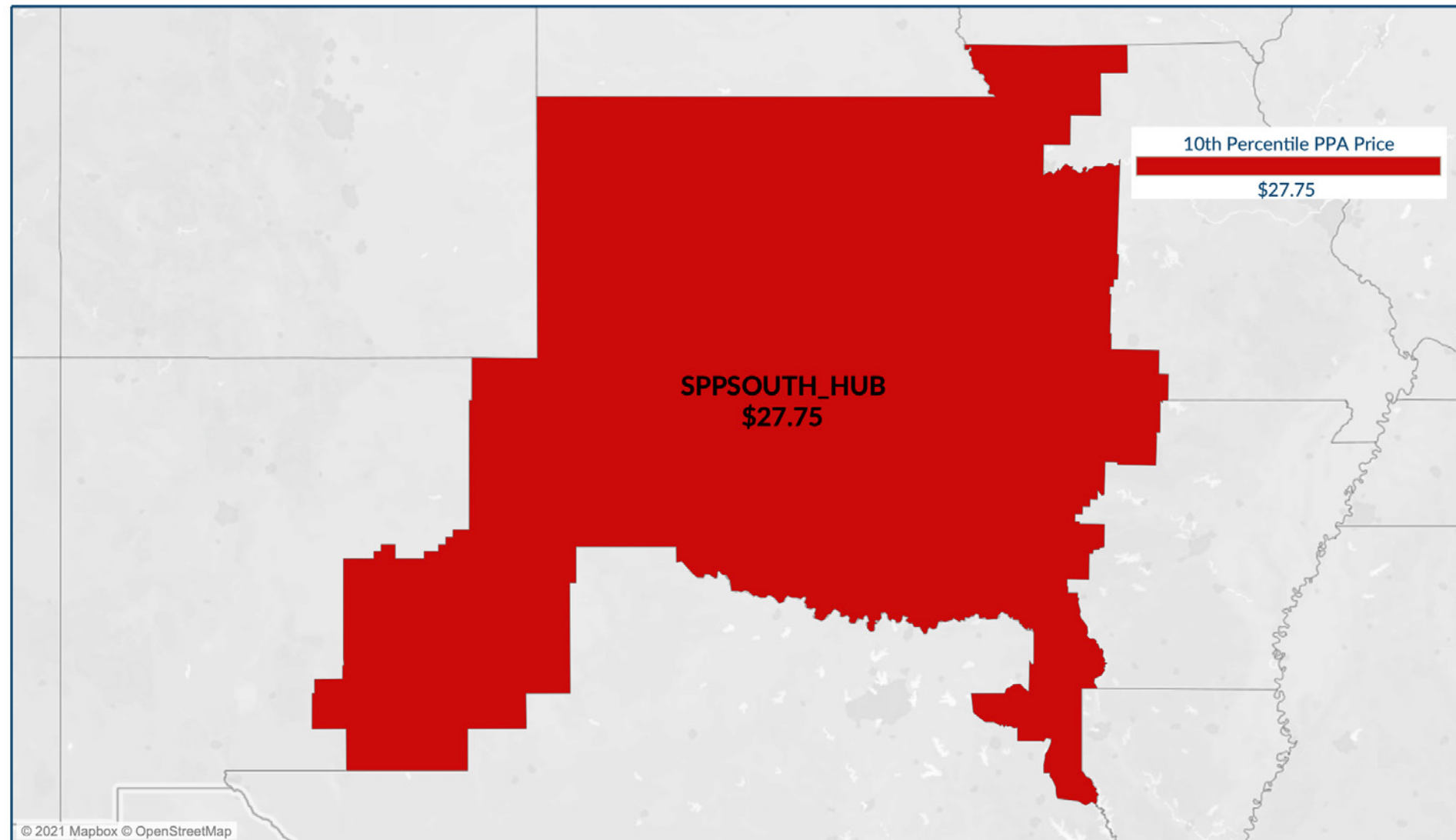
Solar metrics

Percentile (25) of Price	\$31.13/MWh
Percentile (50) of Price	\$33.20/MWh
Percentile (75) of Price	\$35.00/MWh
Average Nameplate Capacity	195 MW



Solar PPA Prices

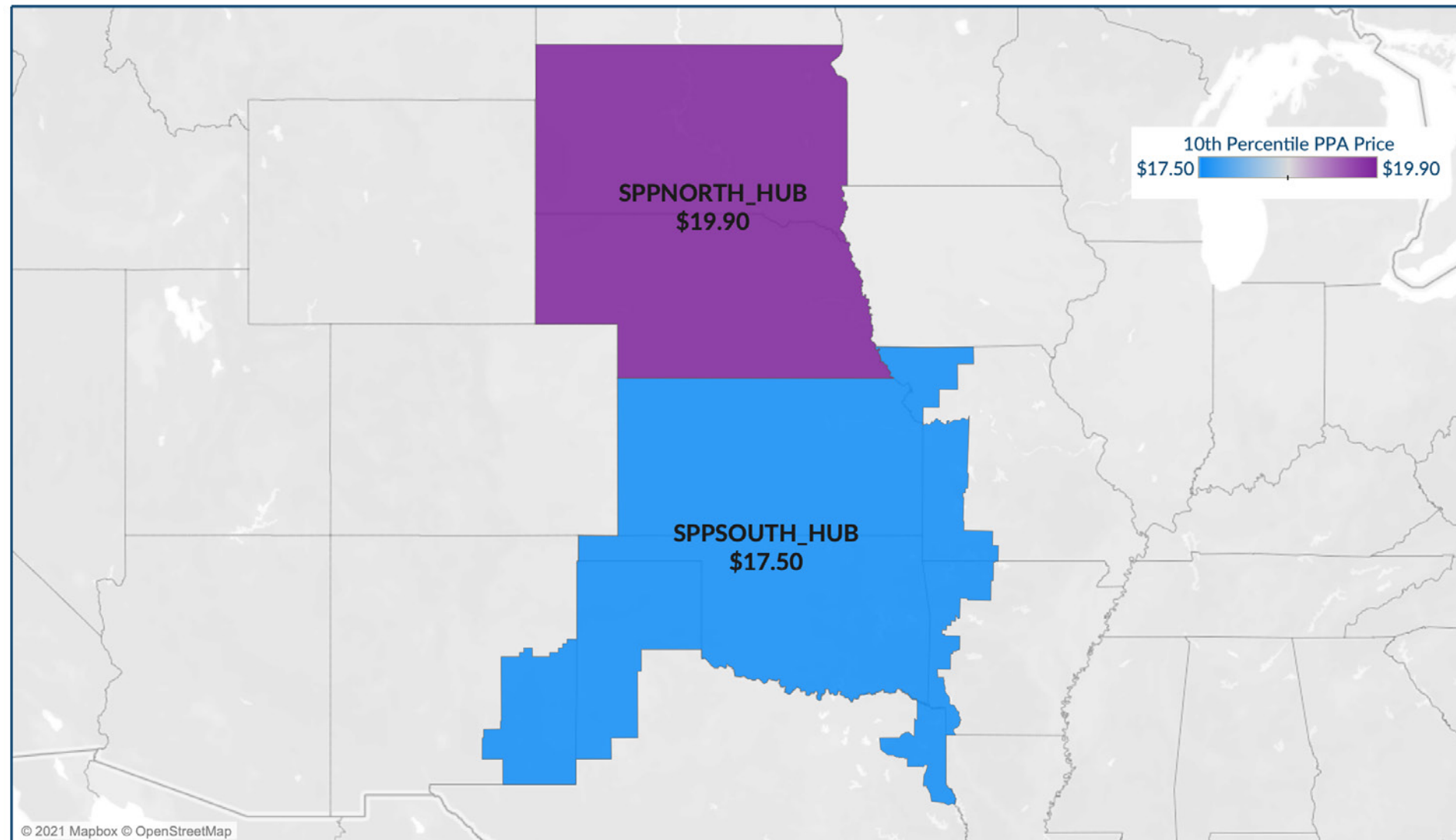
10th Percentile of Levelized PPA Prices (\$ USD/MWh)





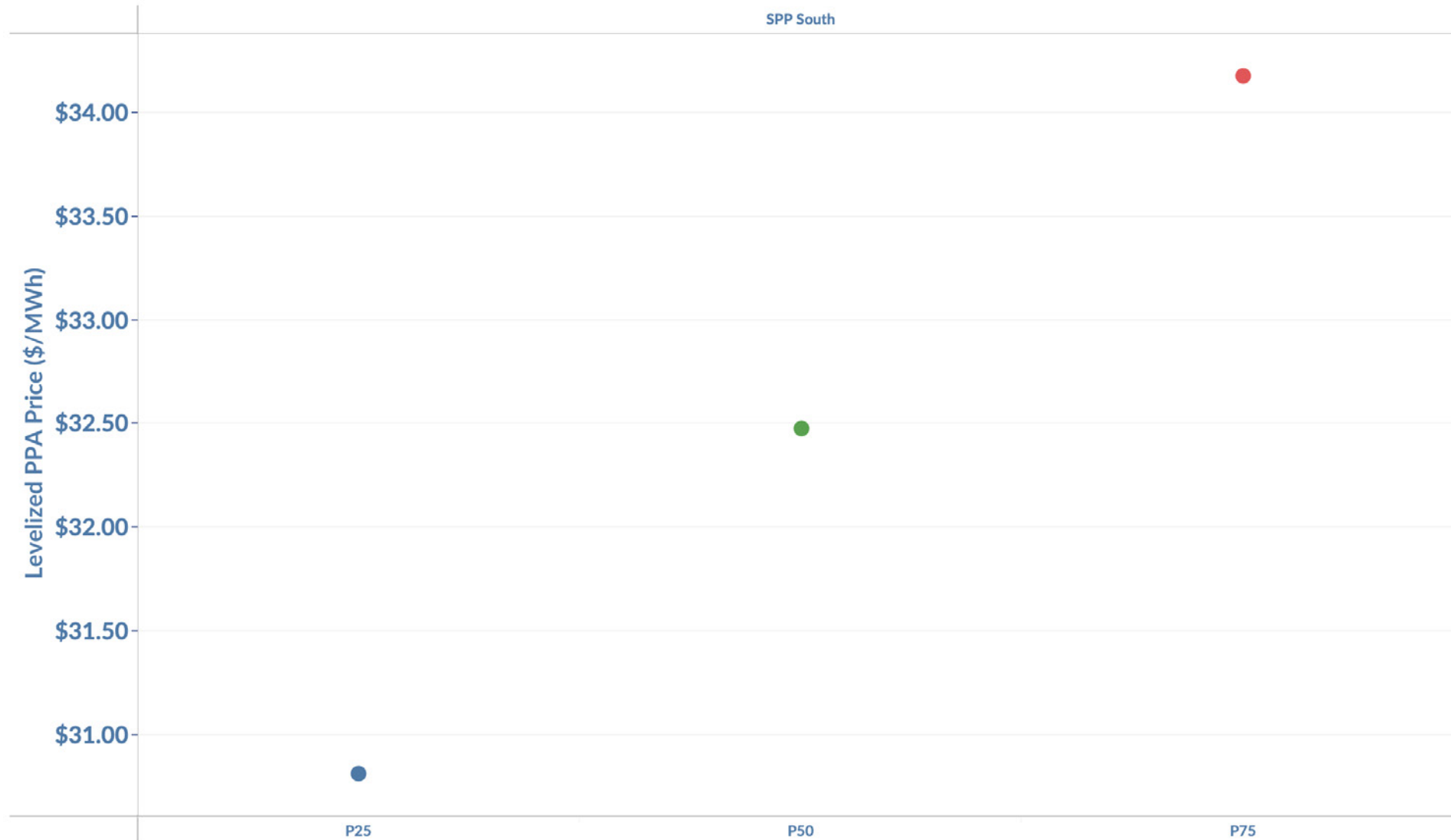
Wind PPA Prices

10th Percentile of Levelized PPA Prices (\$ USD/MWh)





Solar PPA Prices (P25, P50, P75)



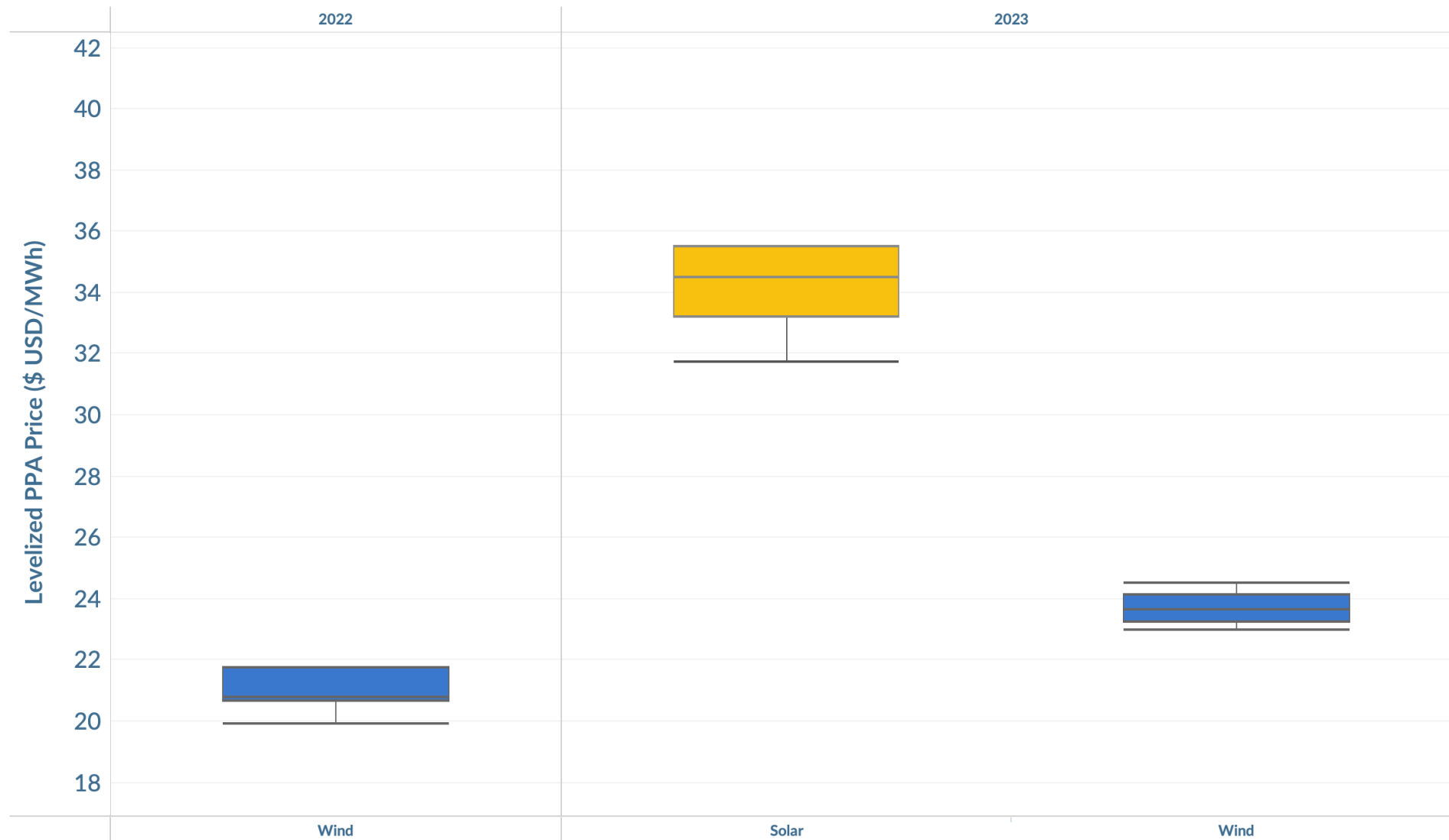


Wind PPA Prices (P25, P50, P75)



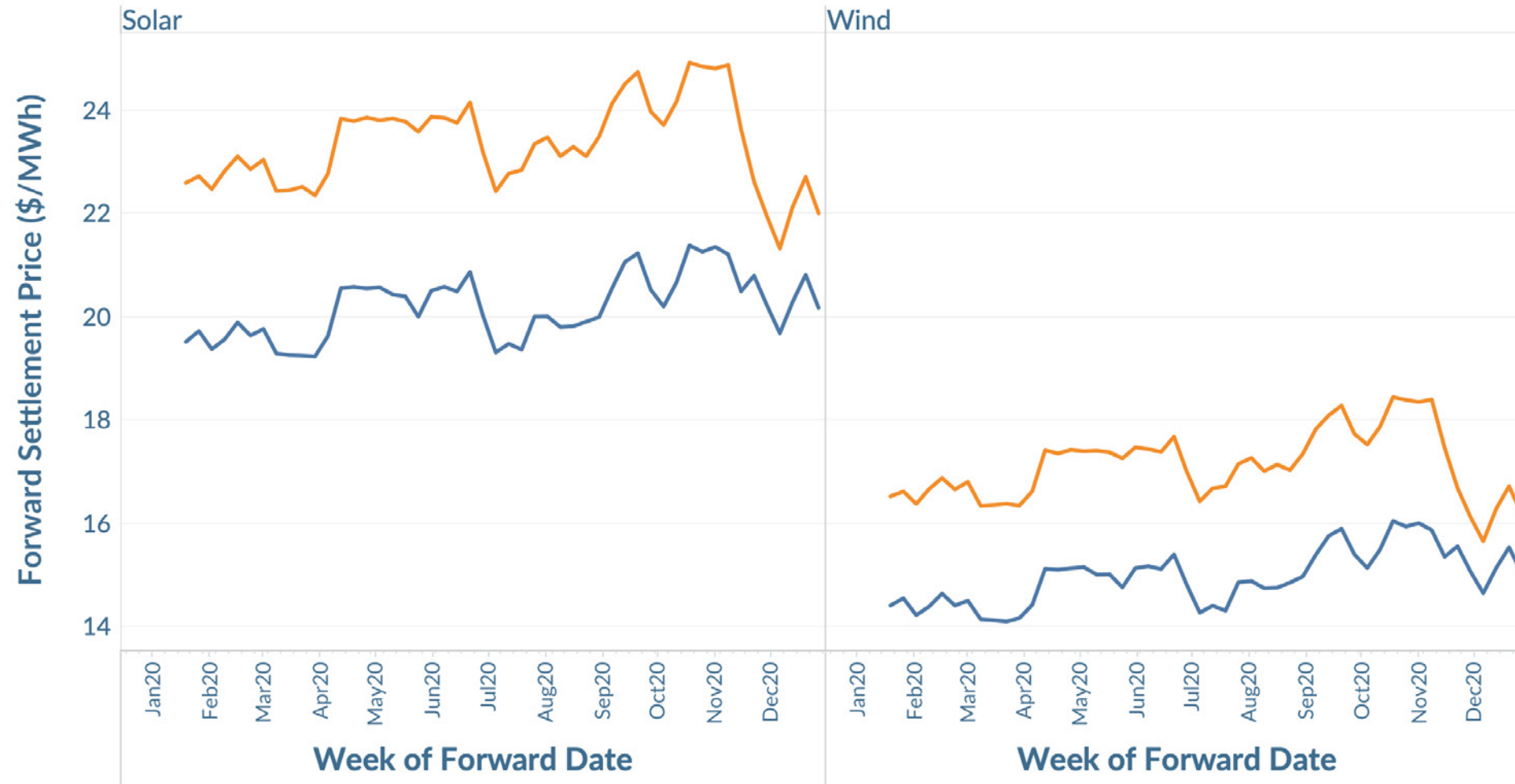


PPA Prices by Contract Start Year and Technology





Generation-weight Forward Curves



This graph shows the generation-weighted levelized 15-year OTCGSD forwards that LevelTen used on a weekly basis over the last twelve months to calculate the Projected Values for offers. Generation is based on average solar and wind production profiles for the market.

Settlement Hub
■ SPPNORTH_HUB ■ SPPSOUTH_HUB

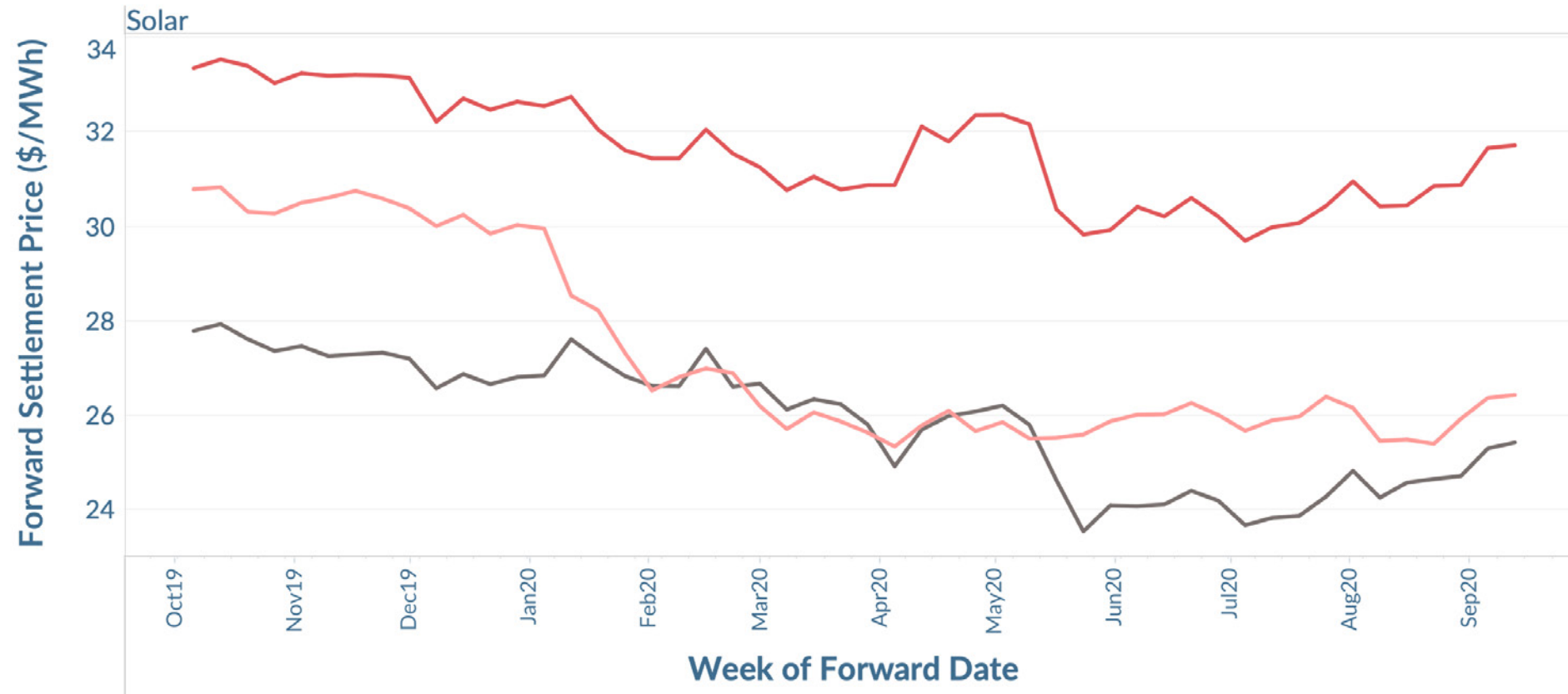
ISO-NE & NYISO





Generation-weight Forward Curves

NYISO



This graph shows the generation-weighted levelized 15-year OTCGSD forwards that LevelTen used on a weekly basis over the last twelve months to calculate the Projected Values for offers. Generation is based on average solar and wind production profiles for the market.

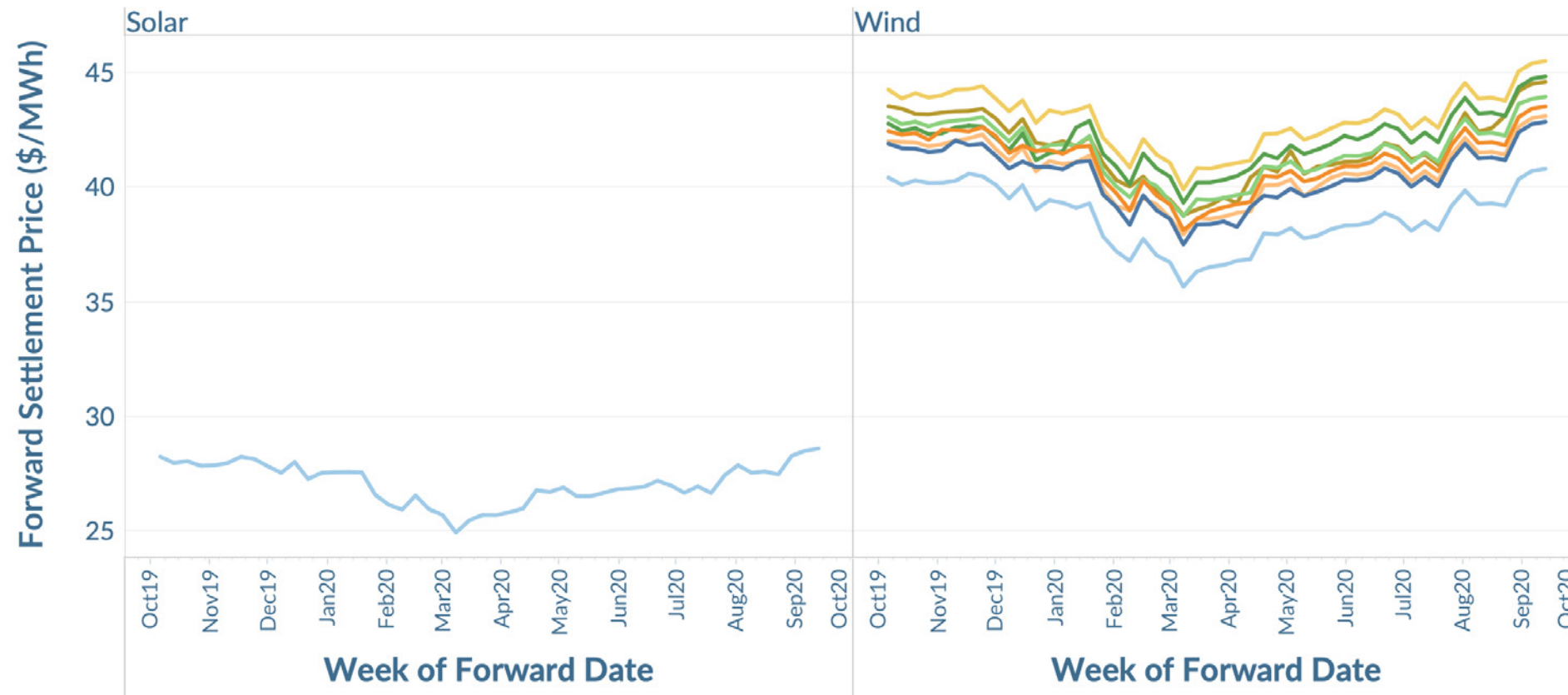
Settlement Hub

Capital - F Central - C West - A



Generation-weight Forward Curves

ISO-NE



This graph shows the generation-weighted levelized 15-year OTCGSD forwards that LevelTen used on a weekly basis over the last twelve months to calculate the Projected Values for offers. Generation is based on average solar and wind production profiles for the market.

Settlement Hub

- .Z.CONNECTICUT
- .Z.MAINE
- .Z.NEMASSBOST
- .Z.NEWHAMPSHIRE
- .Z.RHODEISLAND
- .Z.SEMASS
- .Z.VERM..

Glossary

Commercial Operation Date (COD):

The date (Quarter, Year) by which the project will begin operation according to a given price offer, used in this report to represent the start date of the contract.

Gen-Weighted 15-year Levelized Forward Market Price:

Generation weighted aggregate forward prices for each ISO broken out by technology. Forwards data is integrated by month for all published future years and are adjusted by technology and ISO specific shape factors. They are then levelized over 15 years with a standard 2% escalator applied for tail contracts years without published data.

Negative Covariance:

The ratio of historical revenue calculated with a 12x24 generation profile compared to that calculated with a simulated hourly backcast. Measures any negative relationship between generation and energy prices.

Net Capacity Factor:

Based on the project's annual production (sourced from the submitted 8760 file) and nameplate capacity, the percent value calculated by dividing the actual electrical energy output by the maximum possible electrical energy output over the course of the year.

Percentile:

The value below which a given percentage of observations in a group of observations falls. Lower (more competitive) PPA Prices fall into lower percentiles (e.g., 25th percentile is better than the 75th percentile for PPA Prices). Conversely, higher Projected Values (more competitive) fall into higher percentiles (e.g., 75th percentile is better than the 25th percentile for Projected Value).

Price ("PPA Price"):

The price submitted by developers for each project and conforming to the Standard Marketplace commercial terms (see 'Standard Marketplace Pricing' for details). Certain settlement locations are not included because there are too few data points to maintain project anonymity. Prices from these settlement locations are included in market-level data.

Projected Value and Projected Settlement Value:

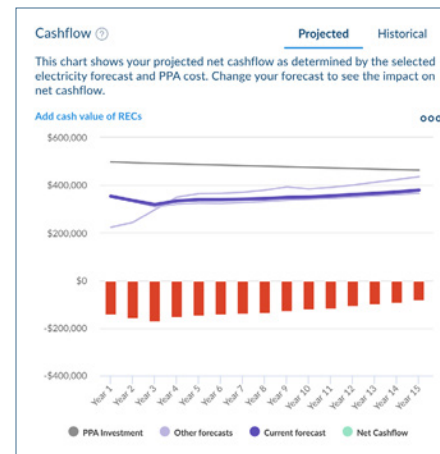
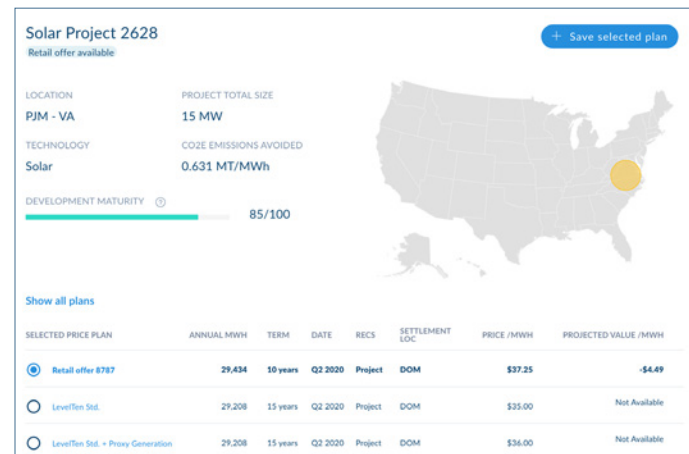
The discounted, levelized Net Present Value per MWh of the VPPA based on the price and commercial details of an offer submitted to the Marketplace. This is determined by calculating the average difference between the PPA Price offered and the forecasted wholesale electricity market prices over the term of the PPA contract. Forward valuations for North American markets are calculated using OTCGH traded forwards with LevelTen's proprietary Shape Degrade ("OTCGHSD") that accounts for higher levels of renewable energy penetration.



Like what you see in this Market Feedback Report?

Log into your LevelTen account to access real-time market intelligence and project feedback. With the click of a button, you'll have access to a broad set of tools, including those shown below. Keep your project information up-to-date to ensure you're seeing the most relevant insights.

Click here to log in: <https://marketplace.levelten.energy/login>





LevelTen Energy

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