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Financial Arrangements Behind New Generating Capacity

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Overview of Analysis

What are the *types* of financial arrangements behind new generation that came on-line between 2016 and 2017?

- Types:
 - ❖ Bilateral Contracts (Utility or End-User)
 - ❖ Ownership (Utility or End-User)
 - ❖ Merchant Generation
 - ❖ Also: Financial Hedge, Community Solar, Virtual Net Metering
- Source of New Capacity: EIA Table 6.3.
- Data on financial arrangements from multiple sources.

New Capacity & Merchant Generation

Year	Total New Generation	Merchant	% Merchant
MW of Net Summer Capacity			
2013	14,680.3	348.0	2.4%
2014	17,638.2	839.9	4.8%
2015	18,316.9	3,531.6	19.3%
2016	28,355.8	2,037.0	7.2%
2017	21,347.0	6,212.8	29.1%

Retirements

2016: 12,712 MW

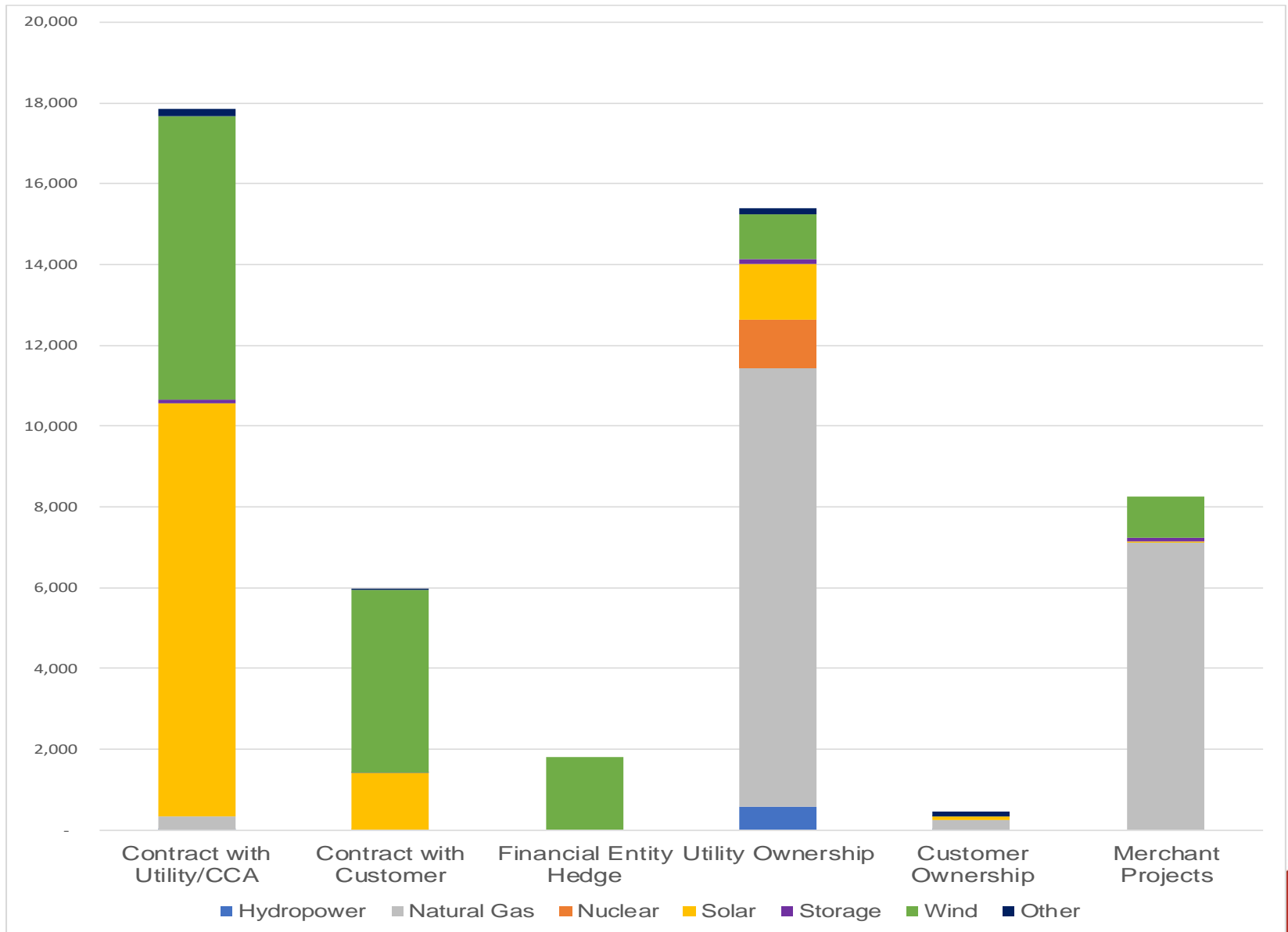
2017: 11,229 MW

Change in Demand

2016 - 2017: -2.1%

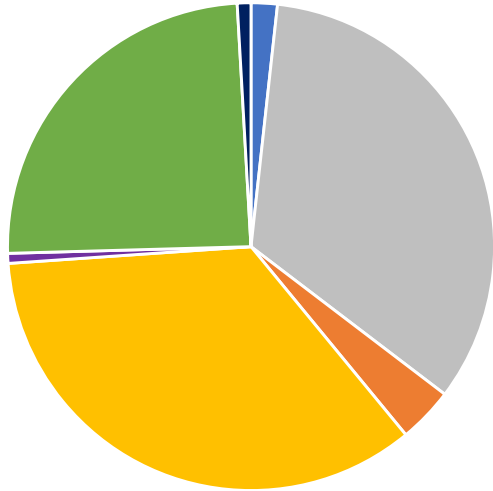
2015 - 2016: 0%

Financial Arrangements behind New Capacity, 2016-2017



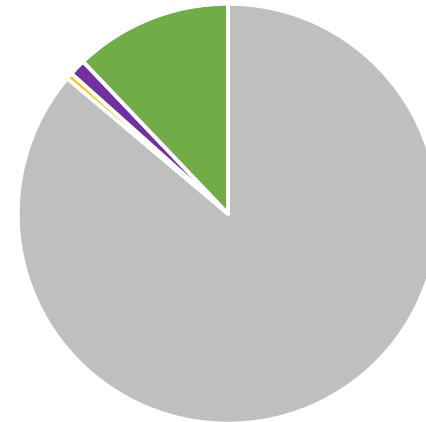
Merchant Vs. Utility

Utility Owned or Contracted Capacity



■ Hydropower ■ Natural Gas ■ Nuclear ■ Solar ■ Storage ■ Wind ■ Other*

Merchant Capacity

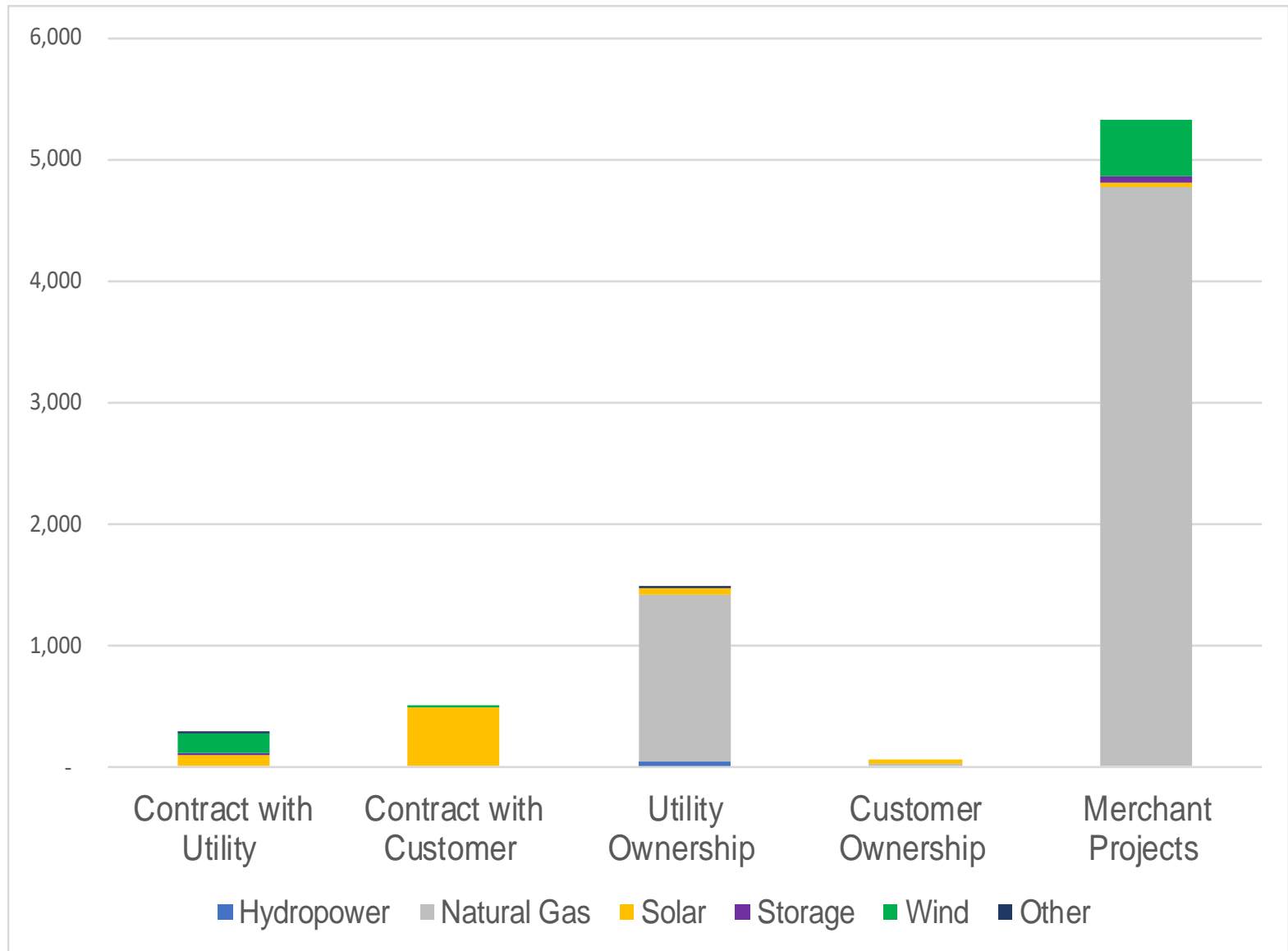


■ Natural Gas ■ Solar ■ Storage ■ Wind

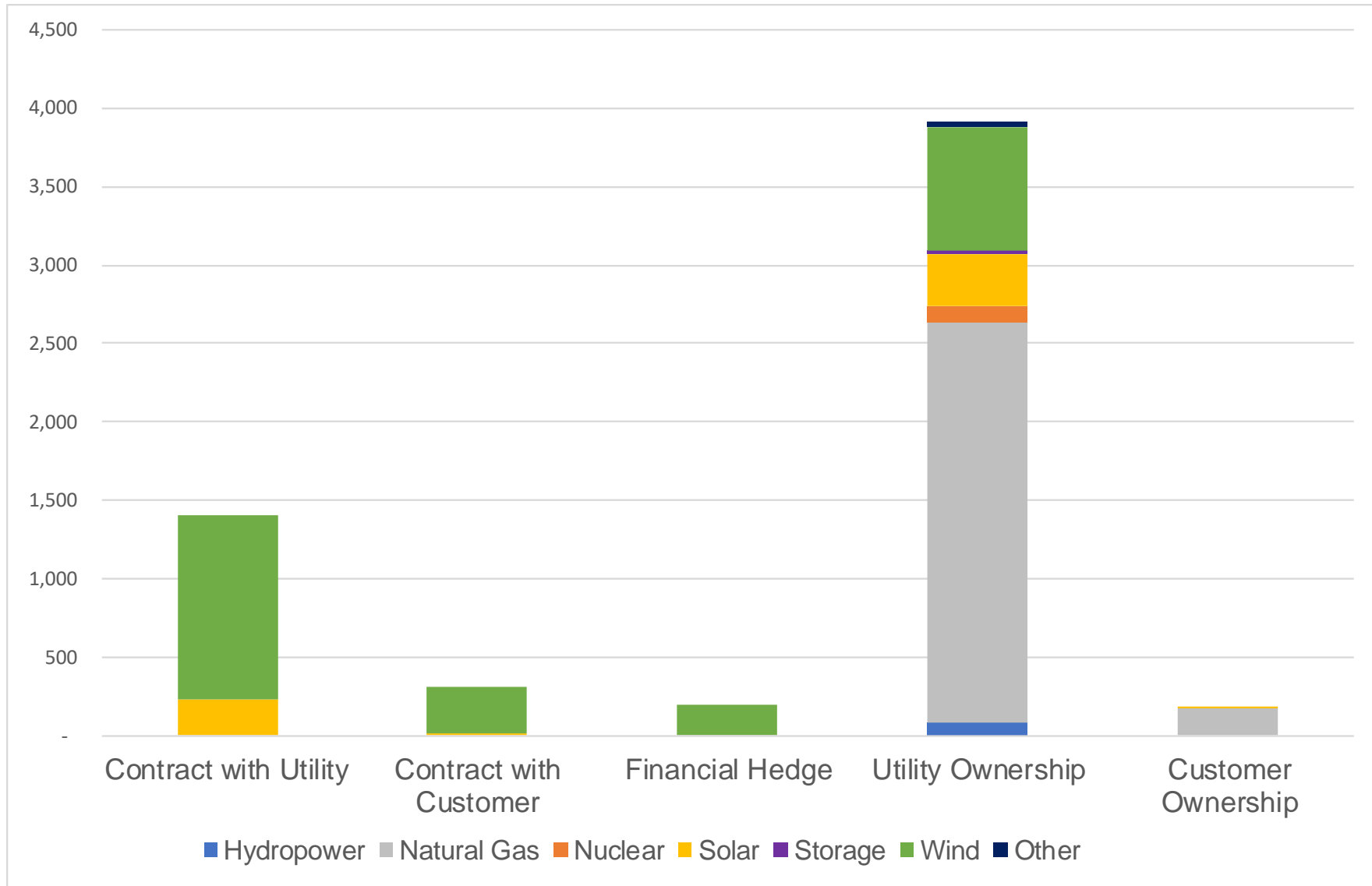
Distribution of New Capacity

	New Capacity	Total Capacity (Aug 2018)
CA	10.9%	7.0%
ERCOT	19.0%	11.1%
ISO-NE	1.4%	3.2%
MISO	12.1%	19.6%
NYISO	0.3%	3.8%
PJM	15.4%	16.2%
SPP	13.2%	5.2%
Non-RTO	27.6%	34.0%

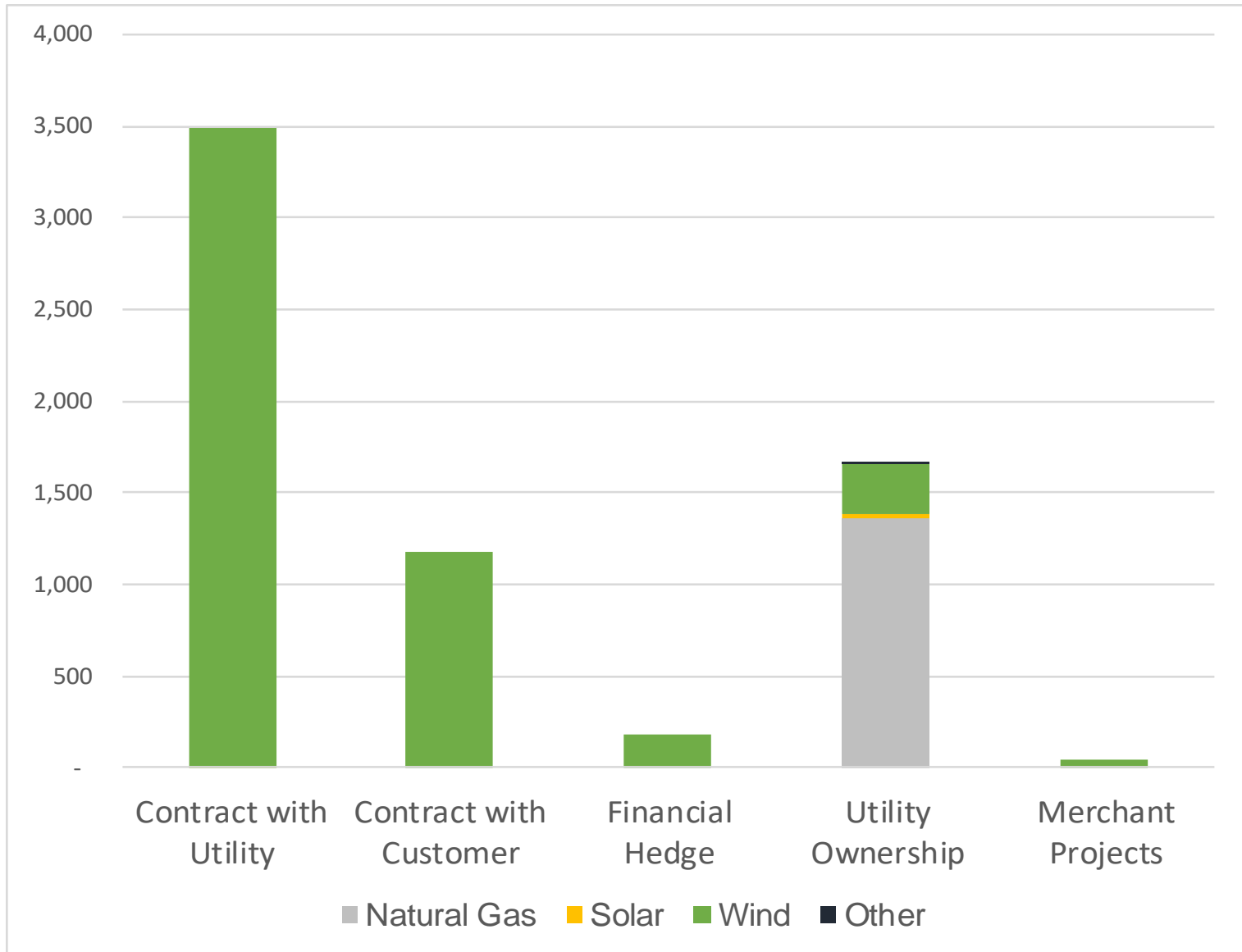
PJM Interconnection, New Capacity, 2016-17



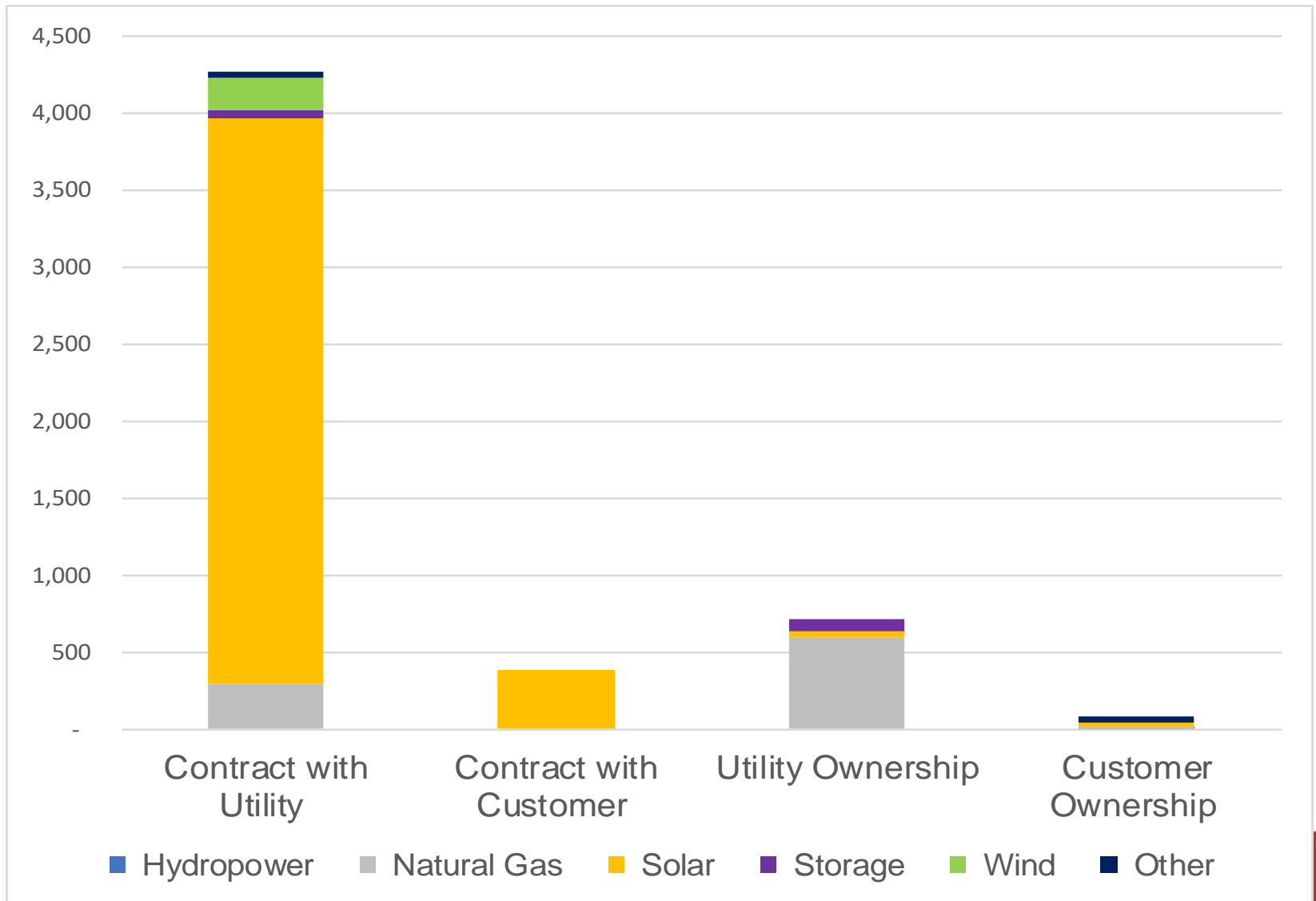
MISO, New Capacity, 2016-17



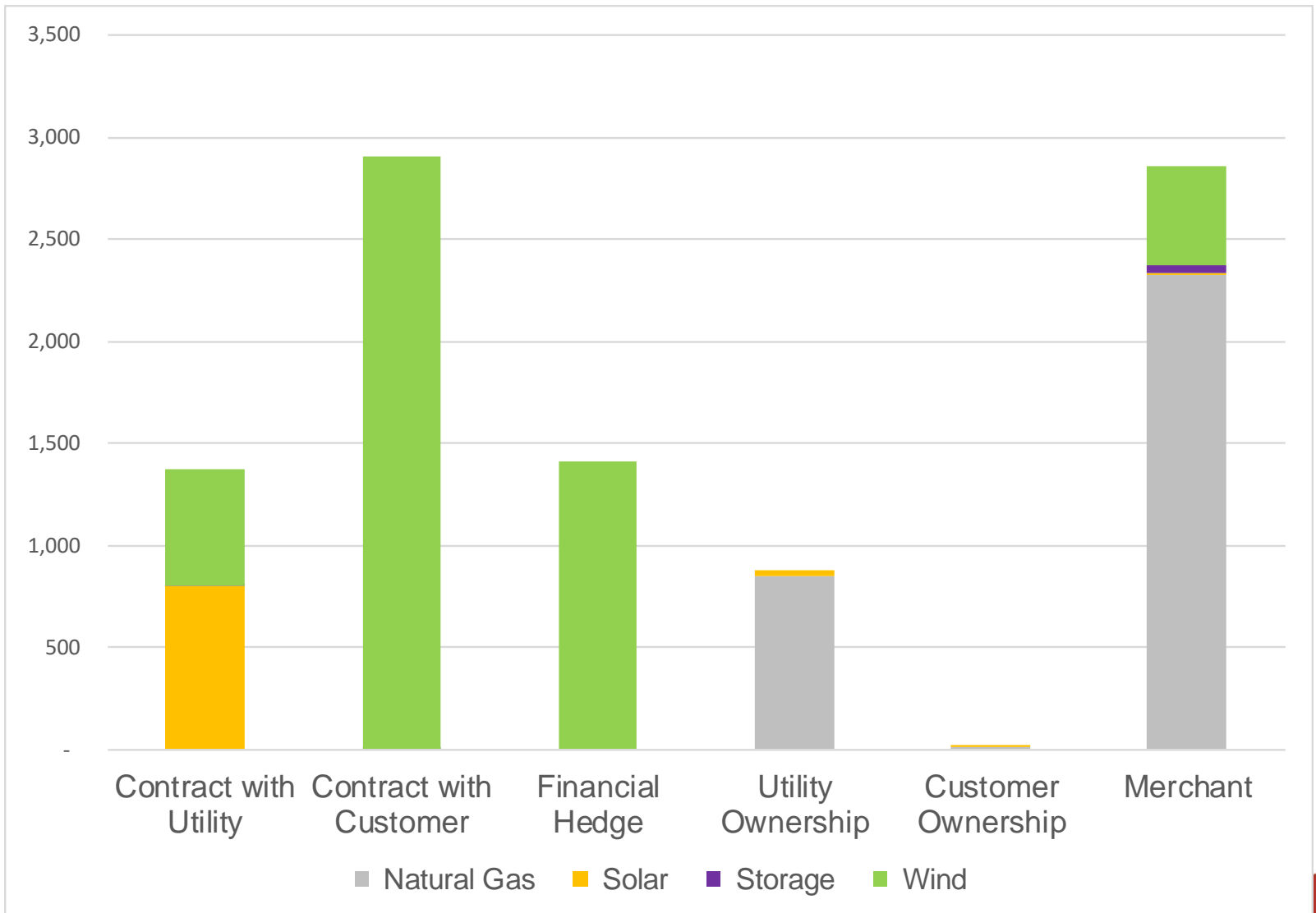
SPP, New Capacity, 2016-17



California, New Capacity 2016-17



ERCOT, New Capacity 2016-17



Summary of Observations

- Merchant is almost entirely located within PJM and ERCOT and is predominantly natural gas (86%), followed by wind (12%), and small amounts of solar and storage.
- Utility-developed new capacity accounted for two-thirds of new capacity and shows much greater diversity than the merchant projects.
- Wind and solar are typically subject to bilateral contracts, while natural gas tends to be owned.
- There has been a growth of new financing schemes outside of the utility and merchant arenas, including financial hedges, corporate PPAs, virtual net metering, and community solar.

QUESTIONS AND FEEDBACK?

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Financial Arrangements behind New Capacity, 2016-2017

Arrangement	Hydro- power	Natural Gas	Nuclear	Solar	Storage	Wind	Other	Total	% of Total
MW of Net Summer Capacity									
Contracts	7.2	329.2	-	11,630.5	105.6	13,360.3	167.5	25,600.3	51.5%
Percent of Contracts	0.03%	1.3%	-	45.4%	0.4%	52.2%	0.7%	100%	
Ownership	579.7	11,086.0	1,224.0	1,088.7	116.9	1,133.8	251.5	15,480.6	31.2%
Percent of Ownership	3.7%	71.6%	7.9%	7.1%	0.8%	7.3%	1.6%	100%	
Community Solar	-	-	-	372.1	-	-	-	372.1	0.7%
Merchant	-	7,107.2	-	39.9	104.4	998.3	-	8,249.8	16.6%
Percent of Merchant	-	86.1%	-	0.5%	1.3%	12.1%	-	100%	
Total	586.9	18,522.4	1,224.0	13,131.2	326.9	15,492.4	419.0	49,702.8	
% of Total	1.2%	37.3%	2.5%	26.4%	0.7%	31.2%	0.84%		