

100% RENEWABLES

City Council
June 20, 2017



DME Background

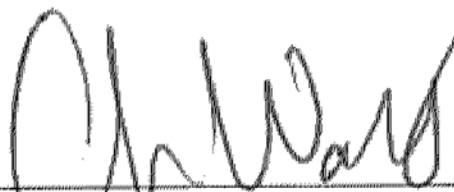
- Municipally owned utility since 1905
- 52,000+ customers
 - 88% residential / 12% commercial & industrial
 - 6th largest MOU in Texas
- DME annual budget: \$176 million
- Electric Reliability Council of Texas (ERCOT)
- City Council and Public Utilities Board

RDP Resolution: R2016-014

SECTION 3. Nothing expressed herein shall be deemed to limit the City's use of renewable energy in the future, to the amount of seventy (70%) percent of its load, as the City Council specifically endorses and sets a goal of achieving one hundred percent (100%) renewable by 2035, while continuing to offer competitive electric rates and electric reliability to its customers.

SECTION 4. This resolution shall take effect immediately from and after its adoption.

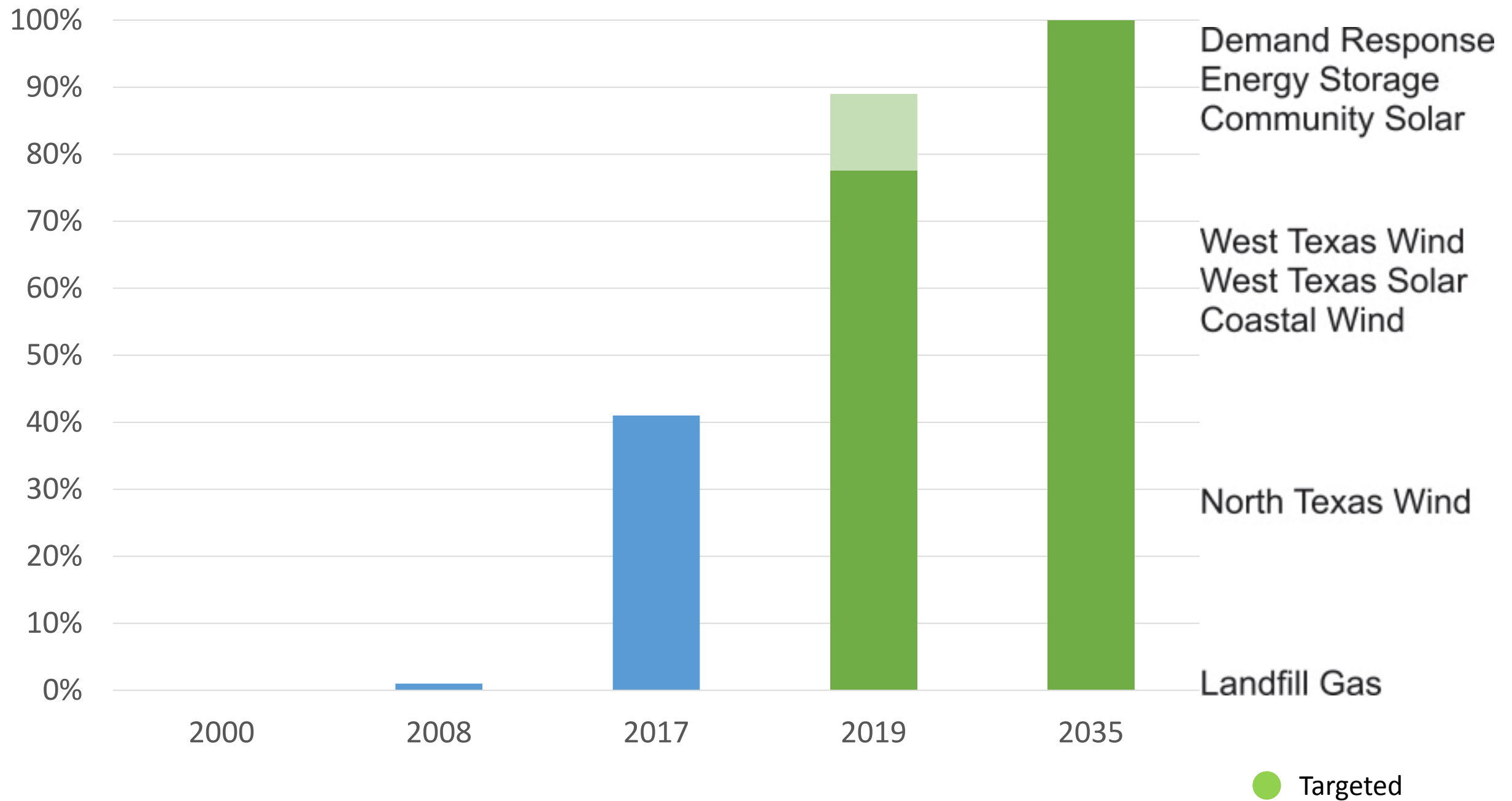
PASSED AND APPROVED this the 21st day of June, 2016.



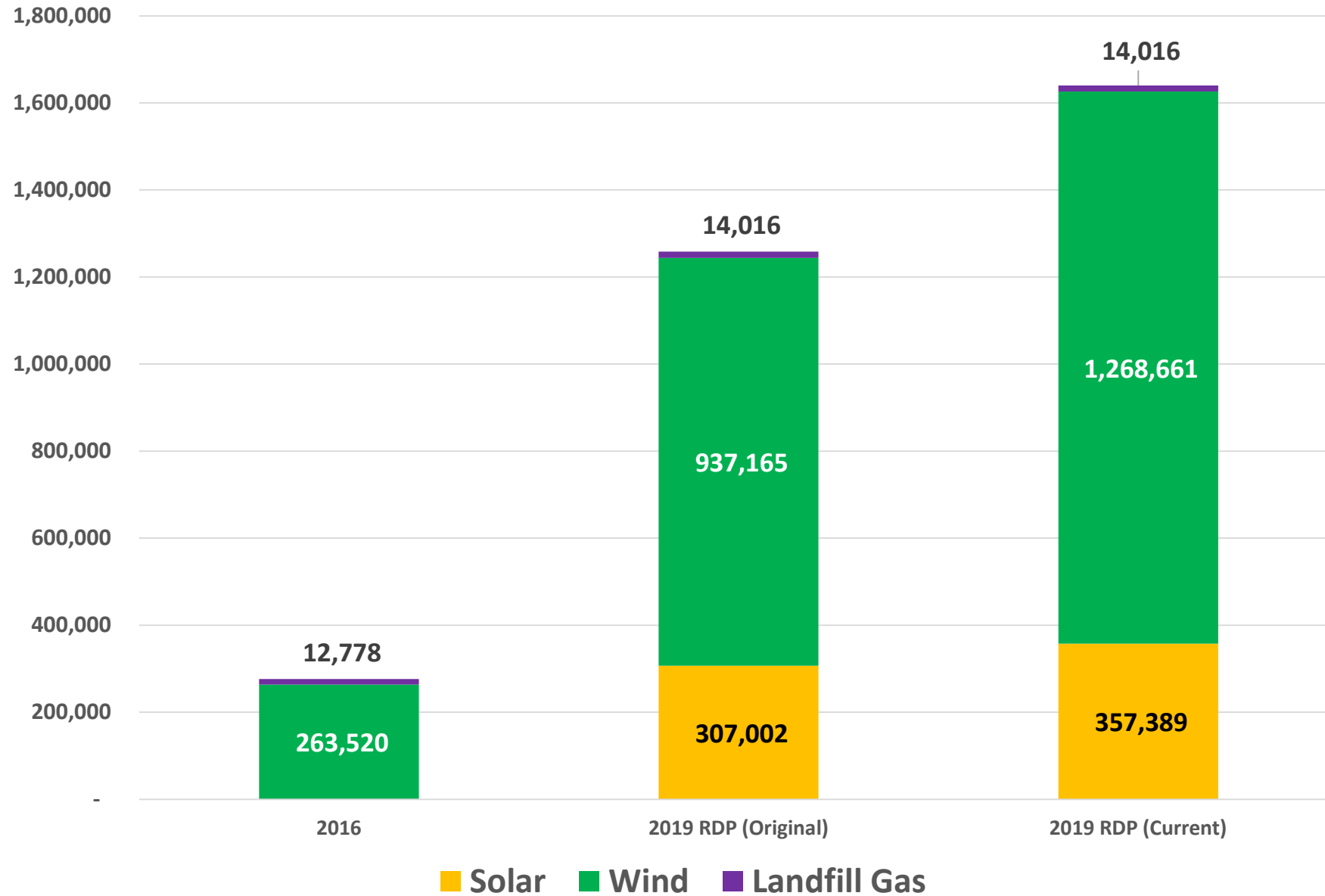
CHRIS WATTS, MAYOR

Key Factors for Increasing Renewables

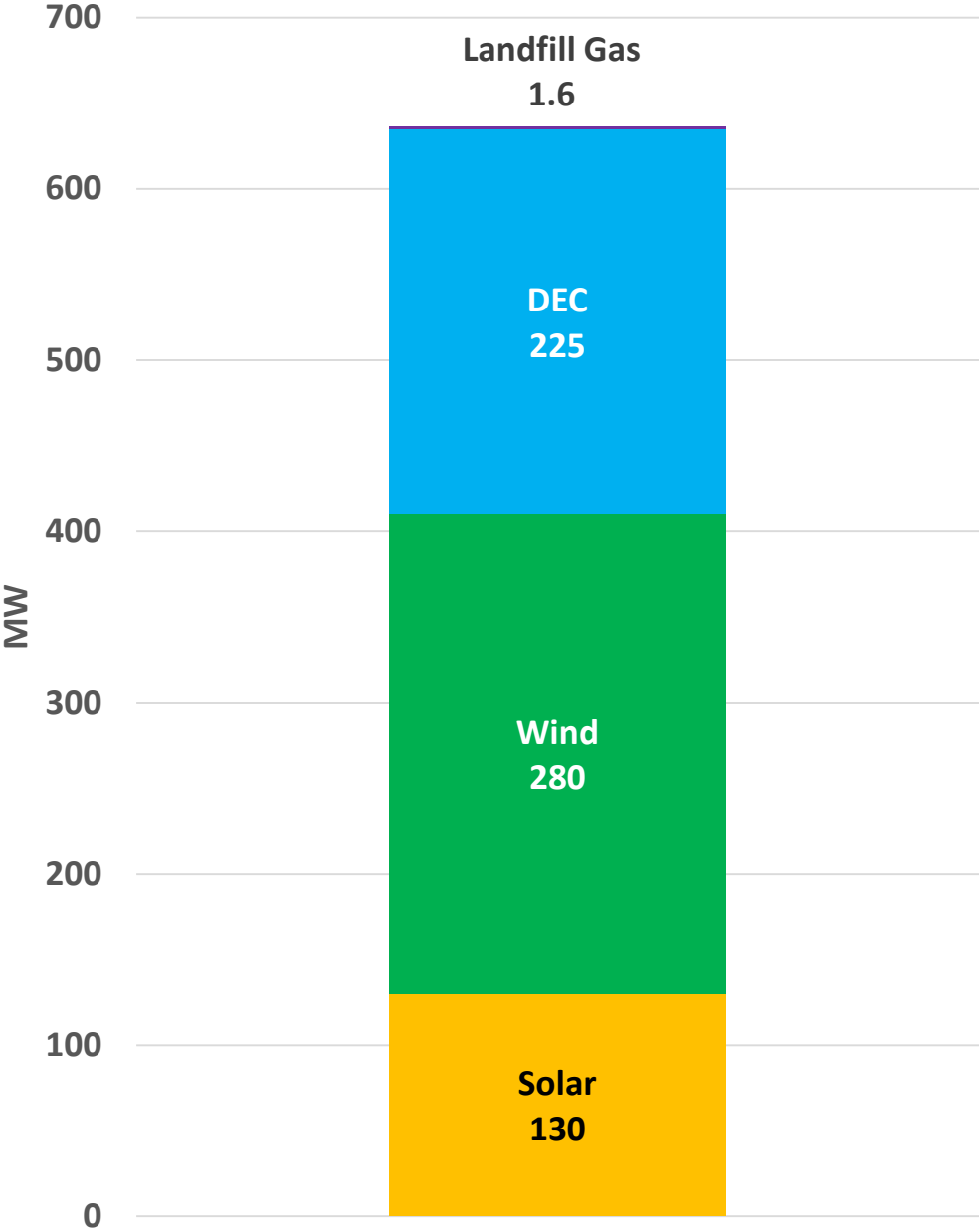
- Price of Renewables
 - Currently favorable pricing for wind and solar power
 - Price consistency through long term contracts
- Renewable output as compared to load
 - Wind and solar power do not produce parallel to load
 - Grid-scale storage is at the pilot stage
- Managing price fluctuations and intermittency
 - Wind energy doesn't always deliver according to forecasts
 - Prices can spike up or down as a result of intermittency
- MW capacity versus MWh production
 - All generation sources have a capacity factor
- Research and development
 - These factors are all affected by technological development



Physical Renewable Portfolio (MWh)



Resource Capacity in MW



Capacity Factor

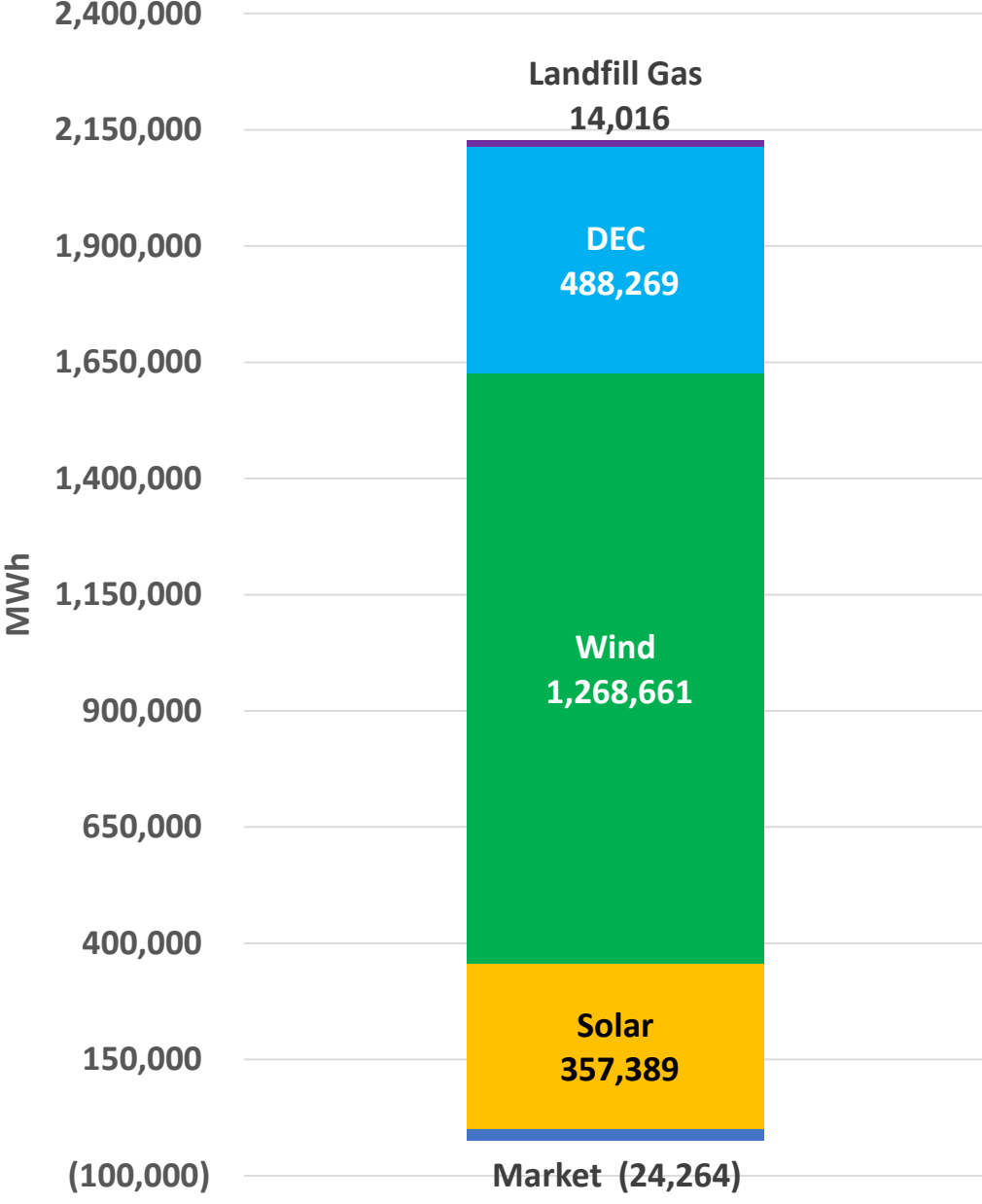
Landfill Gas 98%-100%

DEC 20%-30%

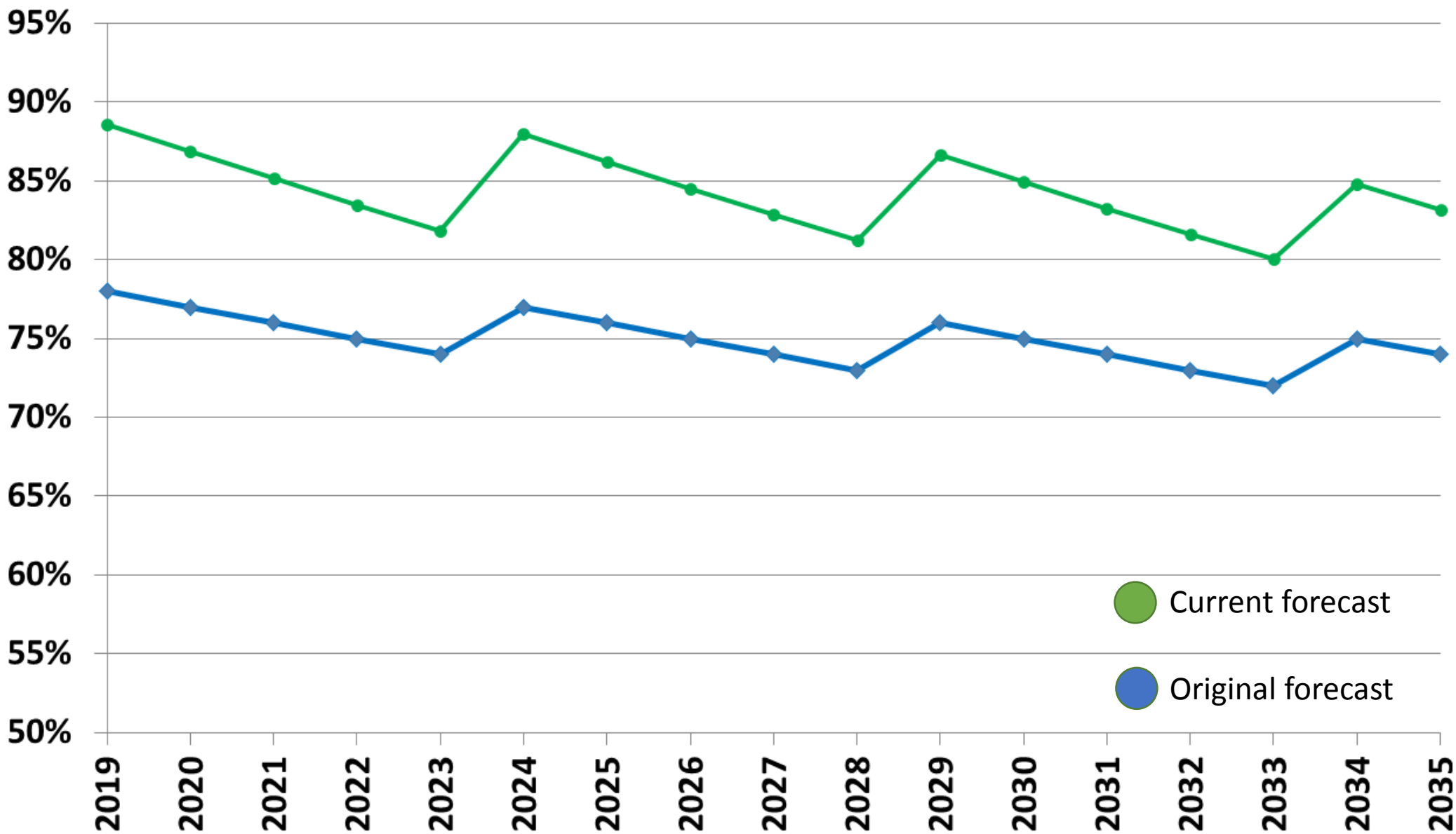
Wind 45%-55%

Solar 30%-35%

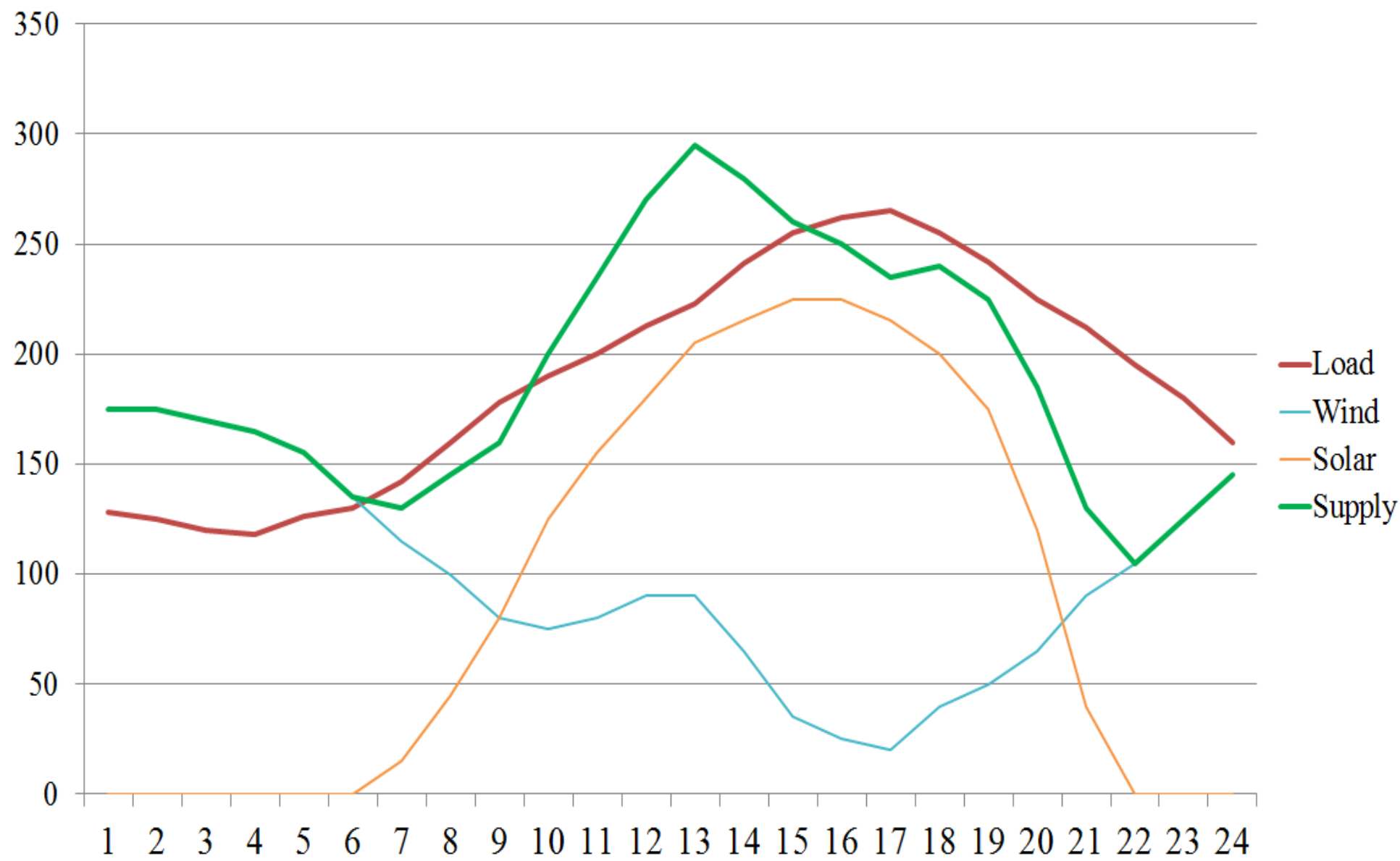
Resource Production in MWh



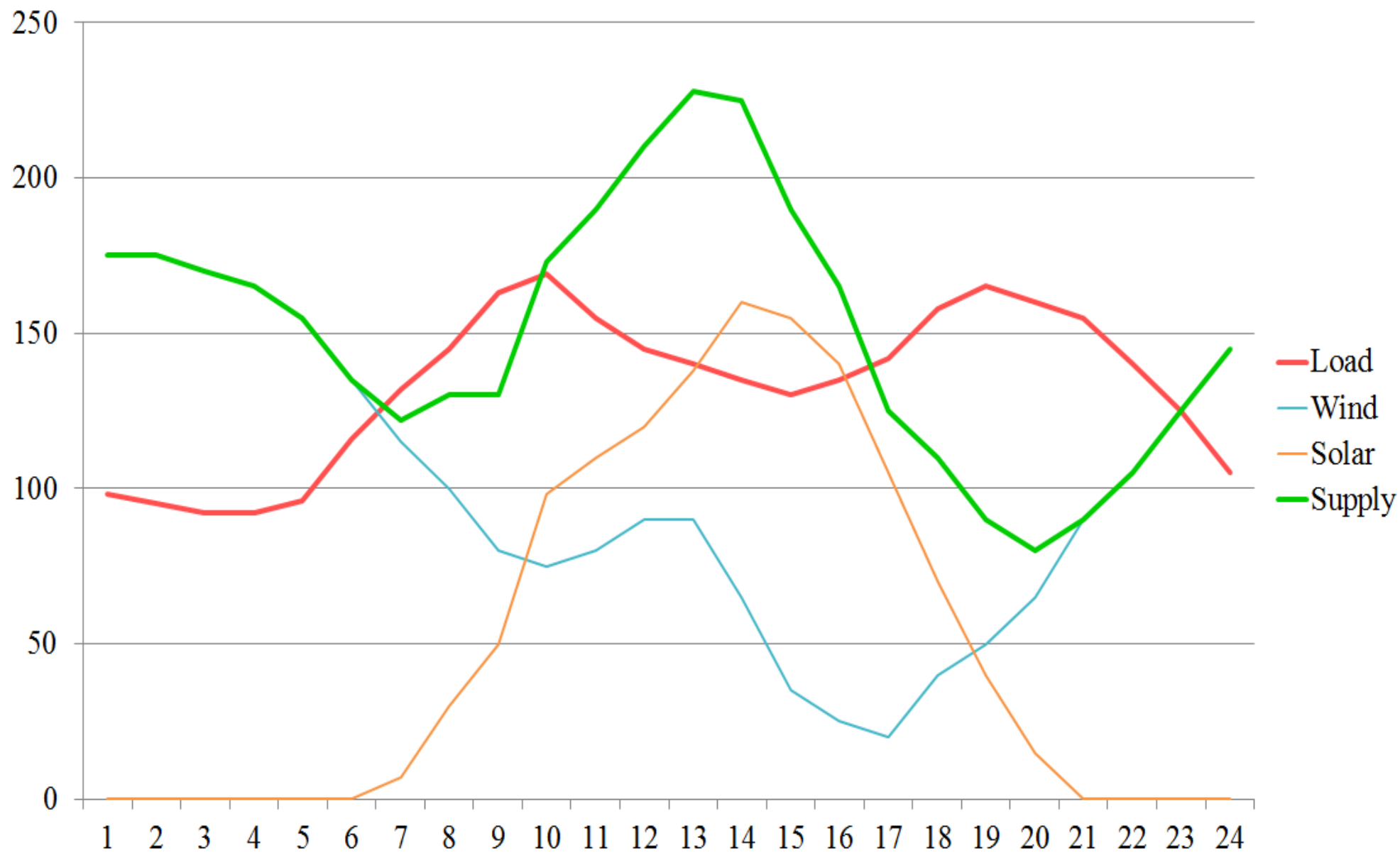
Physical Renewable Percentage



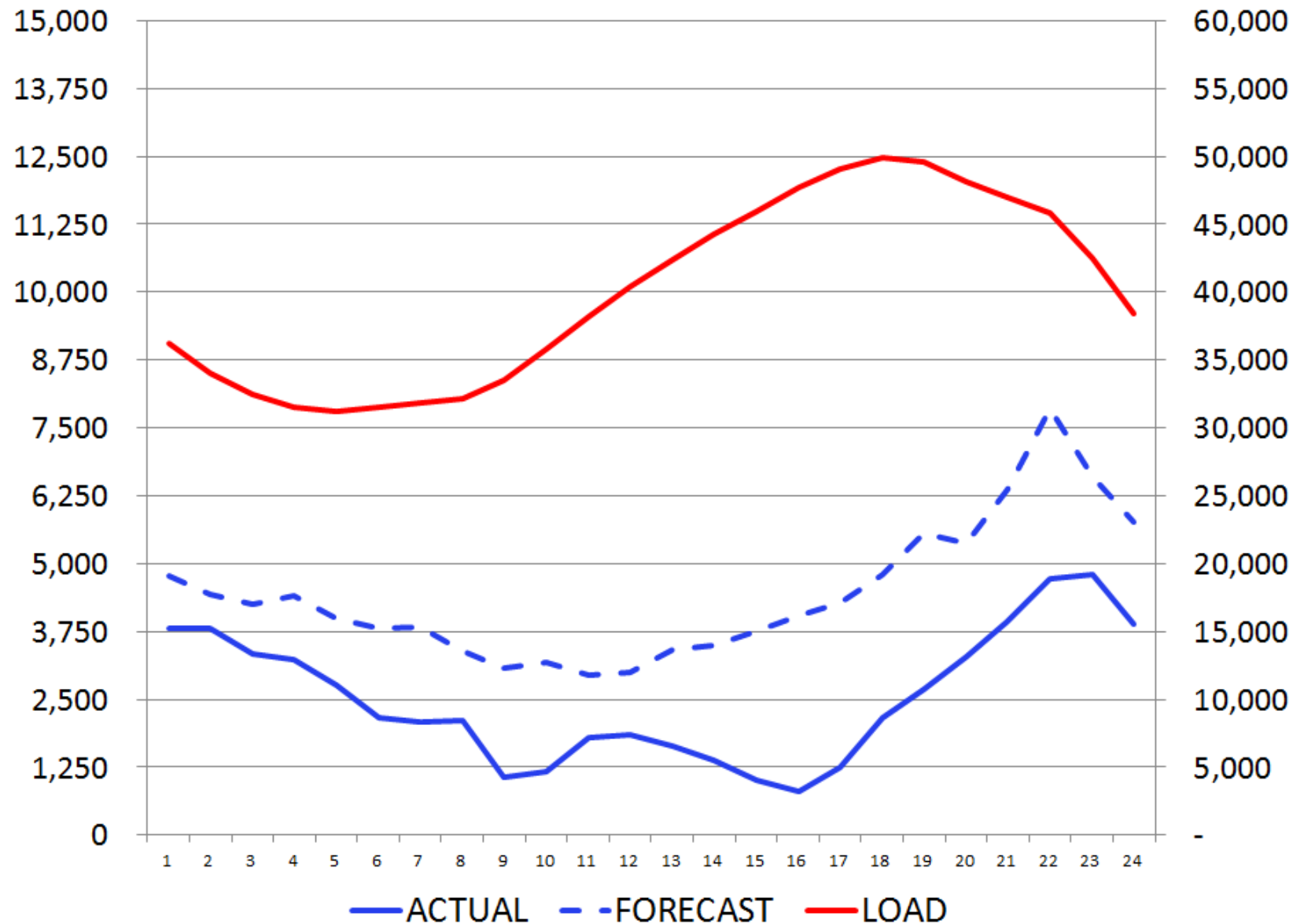
Solar & Wind Output Verses Average Load Profile Jun-Sep



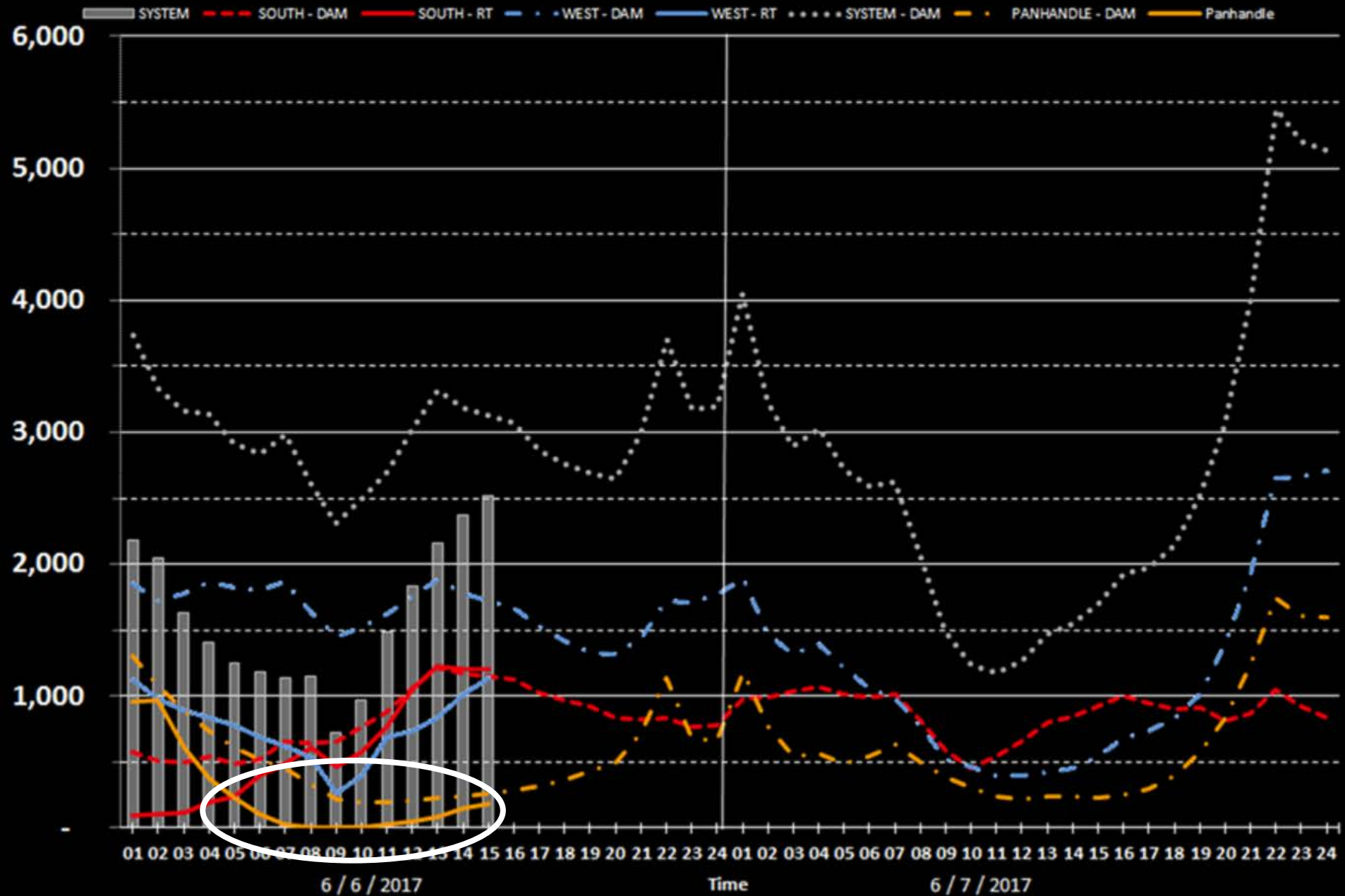
Solar & Wind Output Verses Average Load Profile Jan-Apr



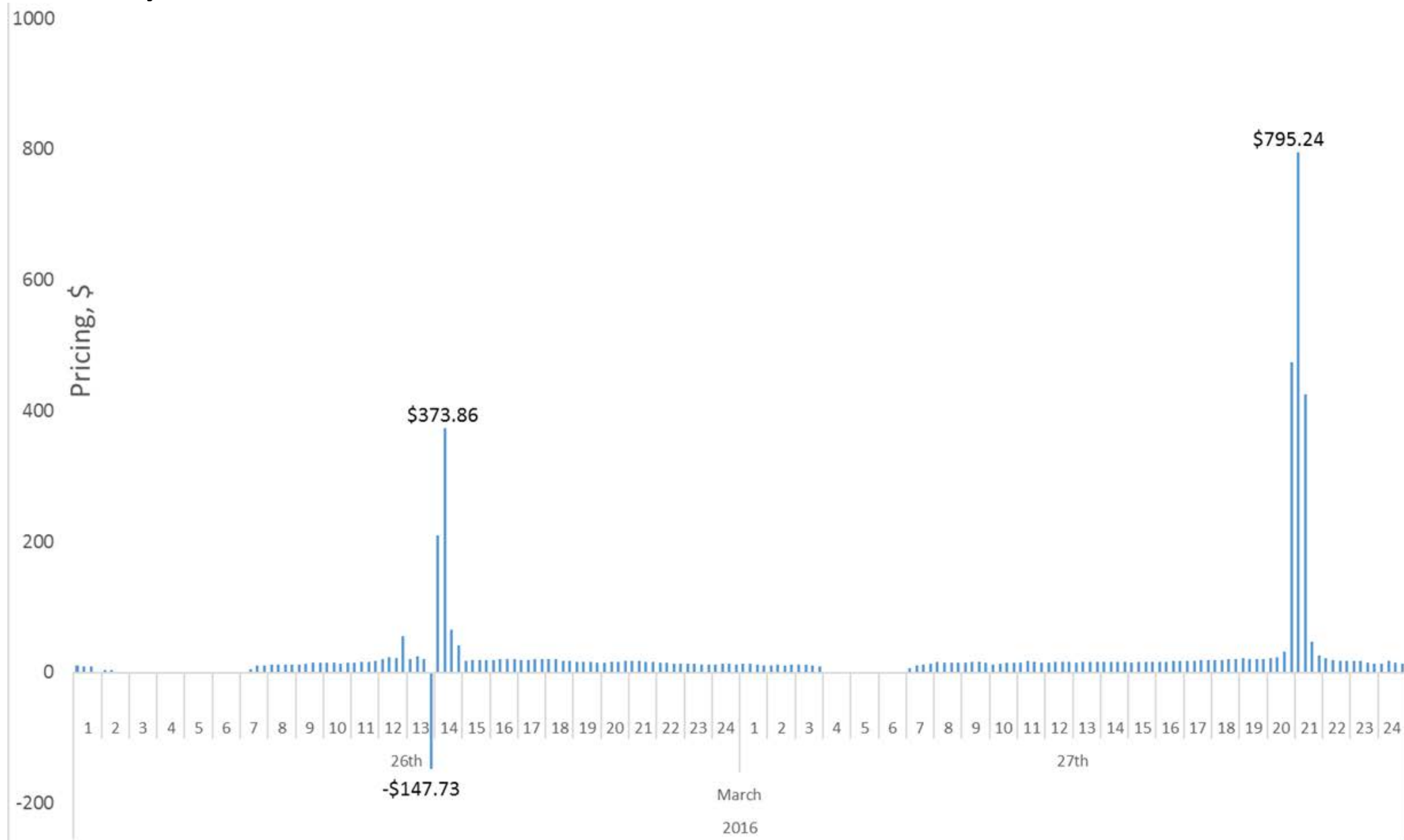
ERCOT Forecast v Actual Wind – 5/29/2017



WIND FORECAST - Day Ahead vs Real Time



2 Day Real-Time Price Fluctuation



Renewable Progress

- Community Solar
 - Benefits residents without access to rooftop solar
 - Details and community involvement opportunities under development
- Storage R&D
 - Discussing partnerships with universities, corporations, and national laboratories
- Rooftop Solar
 - 102 PV systems currently installed
 - \$1,211,666 in rebates since 2009
- Demand Response
 - Multiple commercial demand side management programs are available
- Energy Efficiency
 - Free in-home audits and GreenSense Rebates
- GreenSense Renewable Rate
 - Available since 2004
 - 168 residential accounts enrolled

Residential Solar Rebates in Texas

Utility	4.5 kW _{AC} System No Battery	4.5 kW _{AC} System With Battery	9.0 kW _{AC} System No Battery	9.0 kW _{AC} System With Battery
DME	\$3,375	\$6,750	\$6,750	\$13,500
Austin Energy ¹	\$2,700	\$2,700	\$5,400	\$5,400
San Antonio (CPS) ²	\$2,700	\$2,700	\$5,400	\$5,400
Garland (GP&L)	\$3,375	\$3,375	\$6,750	\$6,750
New Braunfels	\$2,250	\$2,250	\$3,000	\$3,000
San Marcos	\$5,000	\$5,000	\$5,000	\$5,000
AEP North Texas	\$3,600	\$3,600	\$7,200	\$7,200
AEP Texas Central	\$3,600	\$3,600	\$7,200	\$7,200
Oncor	\$2,429	\$2,429	\$4,858	\$4,858
Sharyland	\$1,251	\$1,251	\$2,502	\$2,502
CoServ	\$1,575	\$1,575	\$2,625	\$2,625
DME RANK	3rd (tied)	1st	3rd (tied)	1st

Bryan, College Station, Georgetown, Lubbock, and Greenville do not offer solar rebates or incentives at this time.

¹Austin Energy is currently distributing rebates at the \$0.60 tier level

²CPS calculation includes only base incentive level at \$0.60 per watt

Next Steps

- Following Council's direction, DME is focused on increasing renewables.
- DME anticipates being approximately 88% renewable in 2019.
- DME is pursuing various means for increasing renewable energy, including community solar, energy storage, and demand response.
- An additional renewable RFP will be issued this month, and staff will return with a presentation before the end of the year to discuss the responses.

