

PNM 2017-2036

Integrated Resource Plan

SEPTEMBER 1, 2016 TRANSMISSION, ENERGY EFFICIENCY & RENEWABLES



Talk to us.



RENEWABLE RESOURCES IN PNM PORTFOLIO

- Wind – 306 MW
 - NM Wind Energy Center
 - Red Mesa Wind Project
- Solar – 157 MW
 - 15 utility-scale facilities at sites throughout NM
 - Estimated customer-sited distributed generation of over 50 MW solar
- Geothermal – 4-10 MW
 - Dale Burgett Geothermal near Lordsburg

RENEWABLE RESOURCES IN PNM PORTFOLIO

			Built/ In-Service	Nameplate Capacity MW	Generation 2015 MWh	Capacity Factor
	2015 Renewable Resources	Type				
1	Solar (2011)	Solar PV	2011	22.5	47,669	24.2%
2	Solar (2013)	Solar PV	2013	21.5	49,147	26.1%
3	Solar (2014)	Solar PV	2014	22.8	54,929	27.3%
4	Solar (2015/other)	Solar PV	2015	40.0	n/a	n/a
5	NMWEC (PPA) Taiban Mesa	Wind	2003	204.0	404,765	22.7%
6	Red Mesa (PPA)	Wind	2010/2015	102.0	184,297	20.6%
7	Lightning Dock, DBGEC (PPA)	Geothermal	2014	4.0	10,450	29.8%
8	PNM Renewable Plant			416.8	751,257	44.0%
9	Customer-owned Dist Gen Solar	Solar PV	various	49.5	92,818	21.4%
10	Total PNM Renewable Resources			466.3	844,076	20.7%

MODELING ASSUMPTIONS FOR RENEWABLE RESOURCE ADDITIONS

	Solar PV	Solar PV	Solar PV	Solar PV PPA	Solar Power Tower (10 hrs Storage)	Wind PPA 1	Wind PPA 2	Wind PPA 3	Geo-thermal PPA
IRP Size, MW	10	49.5	99	49.5	100	50	50	50	15
Capital Cost, NPV (\$000s)	\$15,553	\$95,722	\$191,444	n/a	n/a	n/a	n/a	n/a	n/a
Capital Cost, \$/kW	\$1,712	\$1,700	\$1,700	n/a	n/a	n/a	n/a	n/a	n/a
First Year PPA Price, \$/MWh	n/a	n/a	n/a	\$42.32	\$185.00*	\$29.64	\$46.89	\$43.85	\$85.00*
Fixed O&M, \$/kW-yr	\$27.87	\$20.95	\$20.95	included	included	included	included	included	included
Variable O&M, \$/MWh	\$0	\$0	\$0	included	included	included	included	included	included

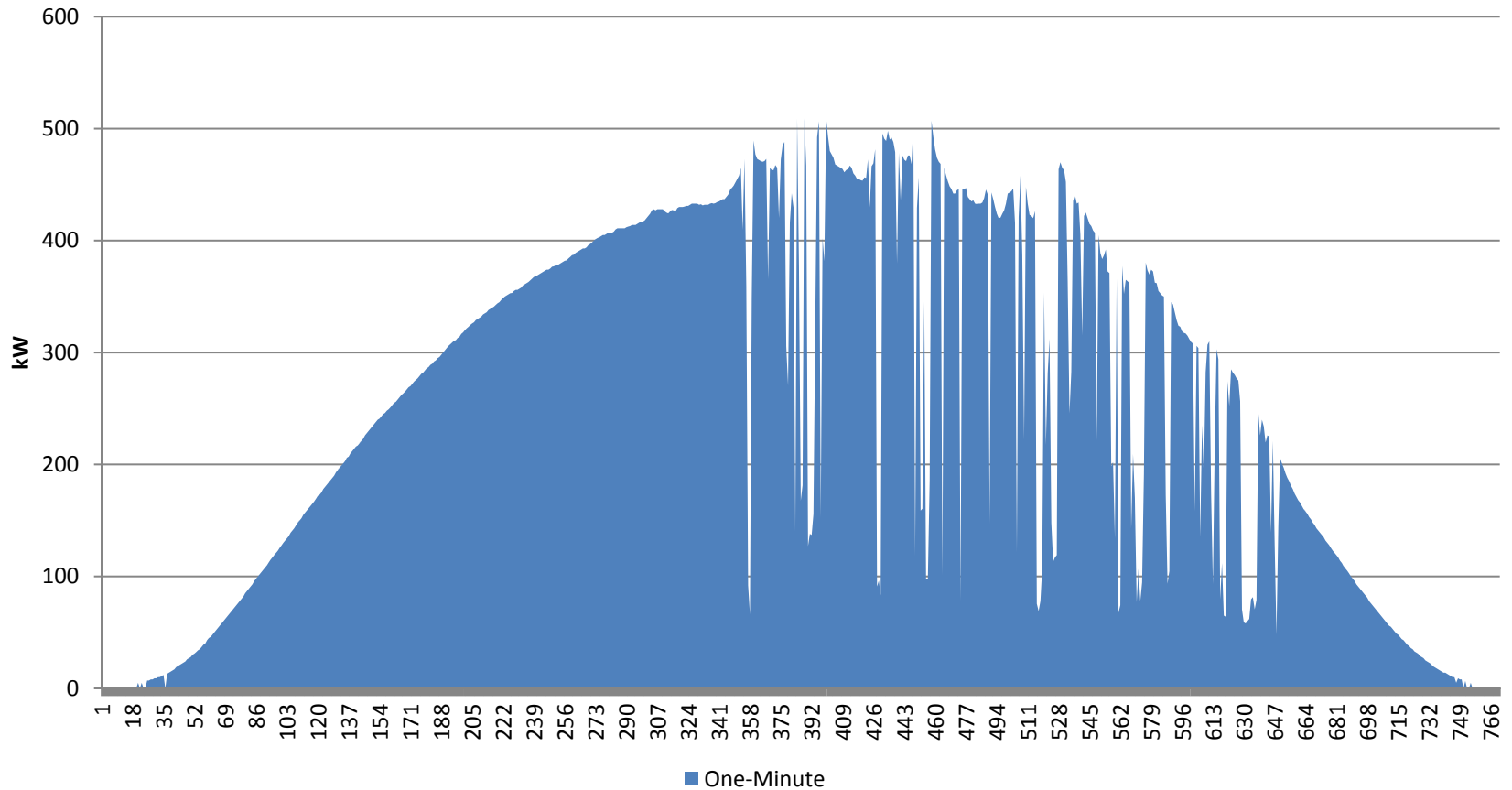
*PPA price reflects a fixed price over the term of the PPA

RENEWABLE ENERGY TAX CONSIDERATIONS

- Investment Tax Credit -- Federal
 - Solar 30% of costs through 2019, phase-out by 2022
 - Wind 2016 = 30%, 2017 = 24%, 2018 = 18%
- Accelerated Depreciation; 50% 1st year, expires Dec. 2017
- Production Tax Credits
 - 2.3 cents/kWh (w/inflation adjustment); 10 years
 - Wind, geothermal, solar = 2.3 / Biomass = 1.2 cents/kWh
 - Phase-out 2017 = 80%, 2018 = 60%, 2019 = 40%
 - Must choose either ITC or PTC

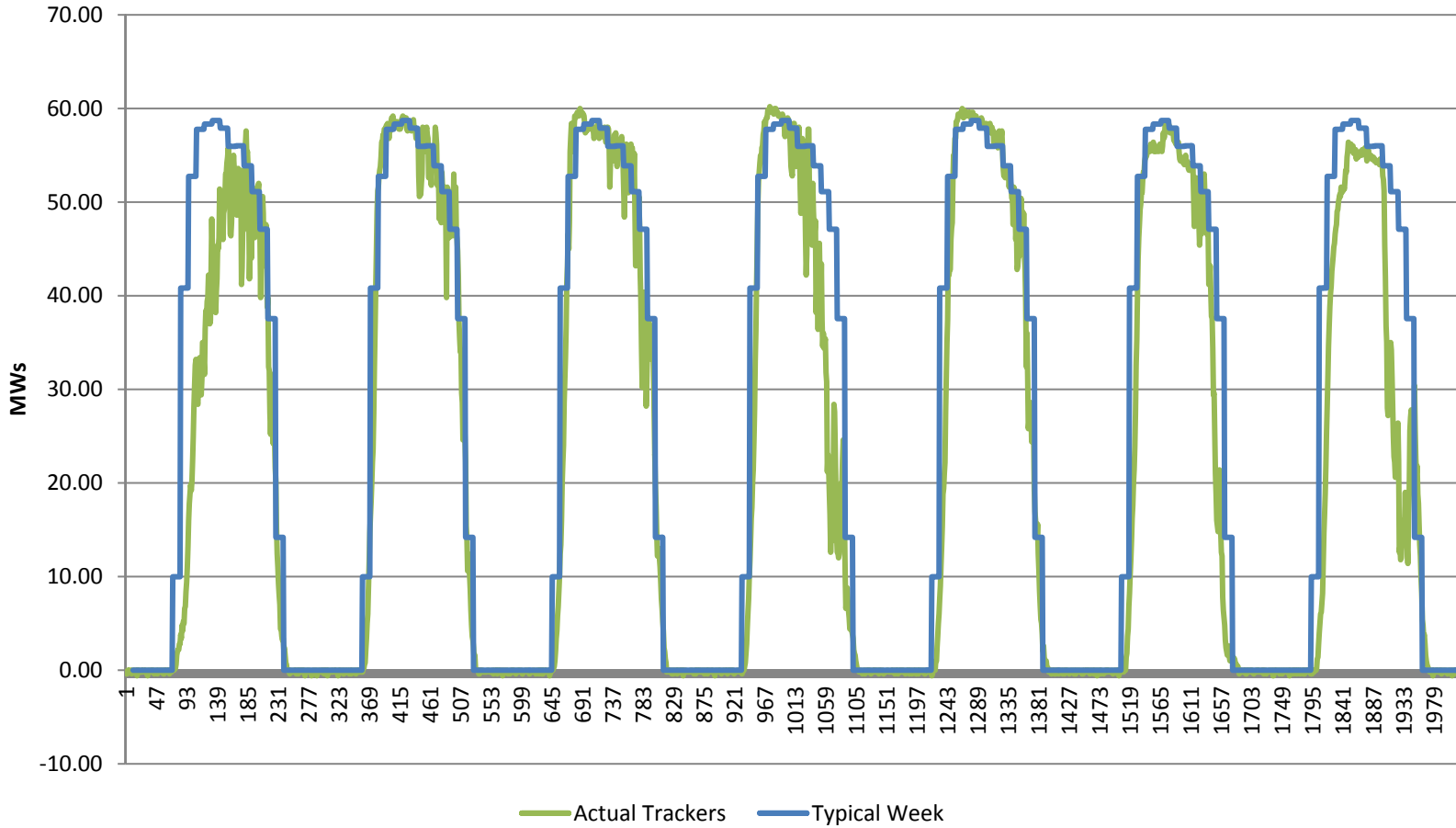
SOLAR ENERGY KEY ATTRIBUTES

Prosperity Solar Energy; One-Minute Daylight Hours, 4/16/12

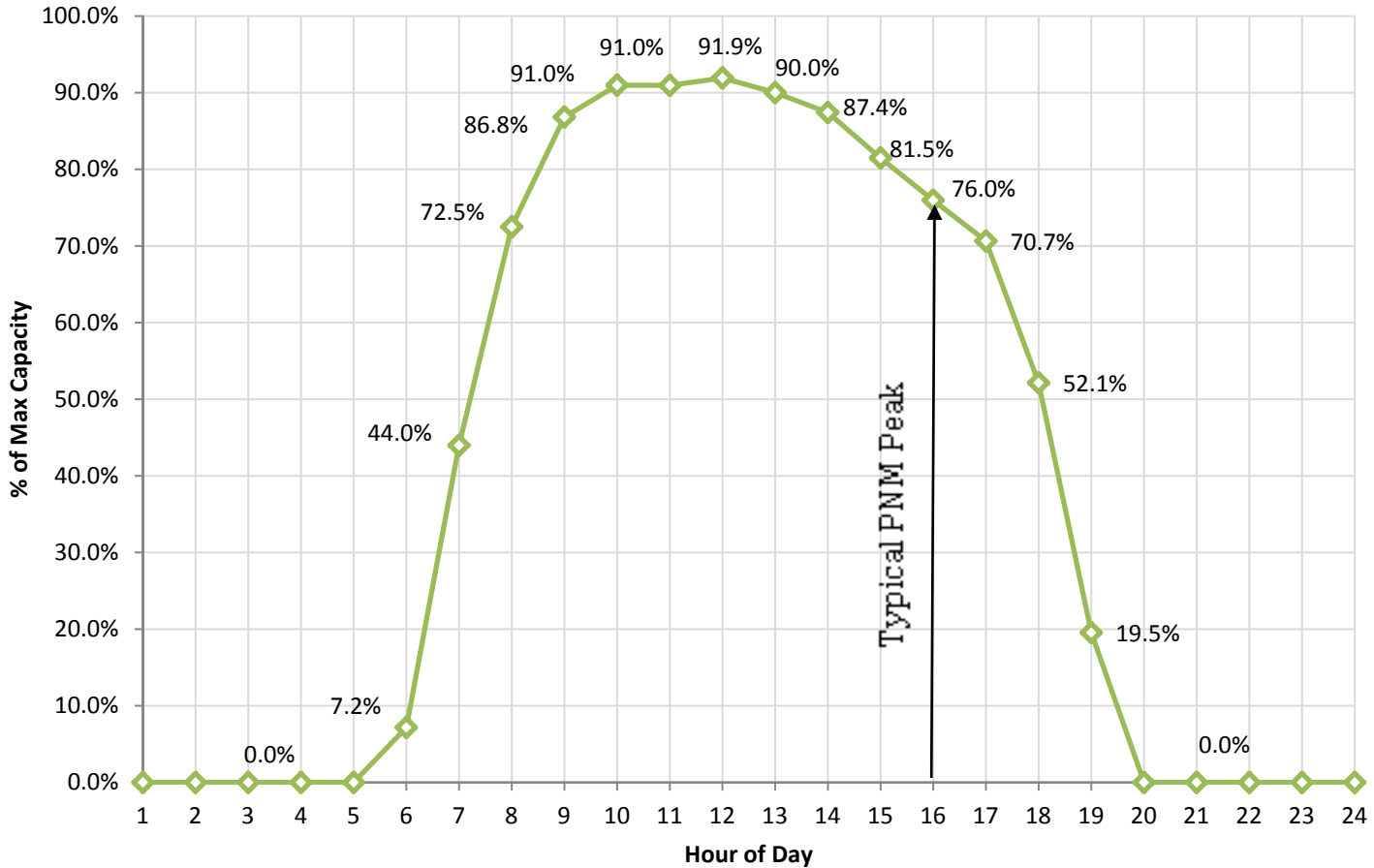


SOLAR ENERGY INTERMITTENCY – SINGLE SITE VS. DISPERSED PORTFOLIO

Tracking Solar: Typical Week vs. 5-min Actual (6/1/16-6/7/16)

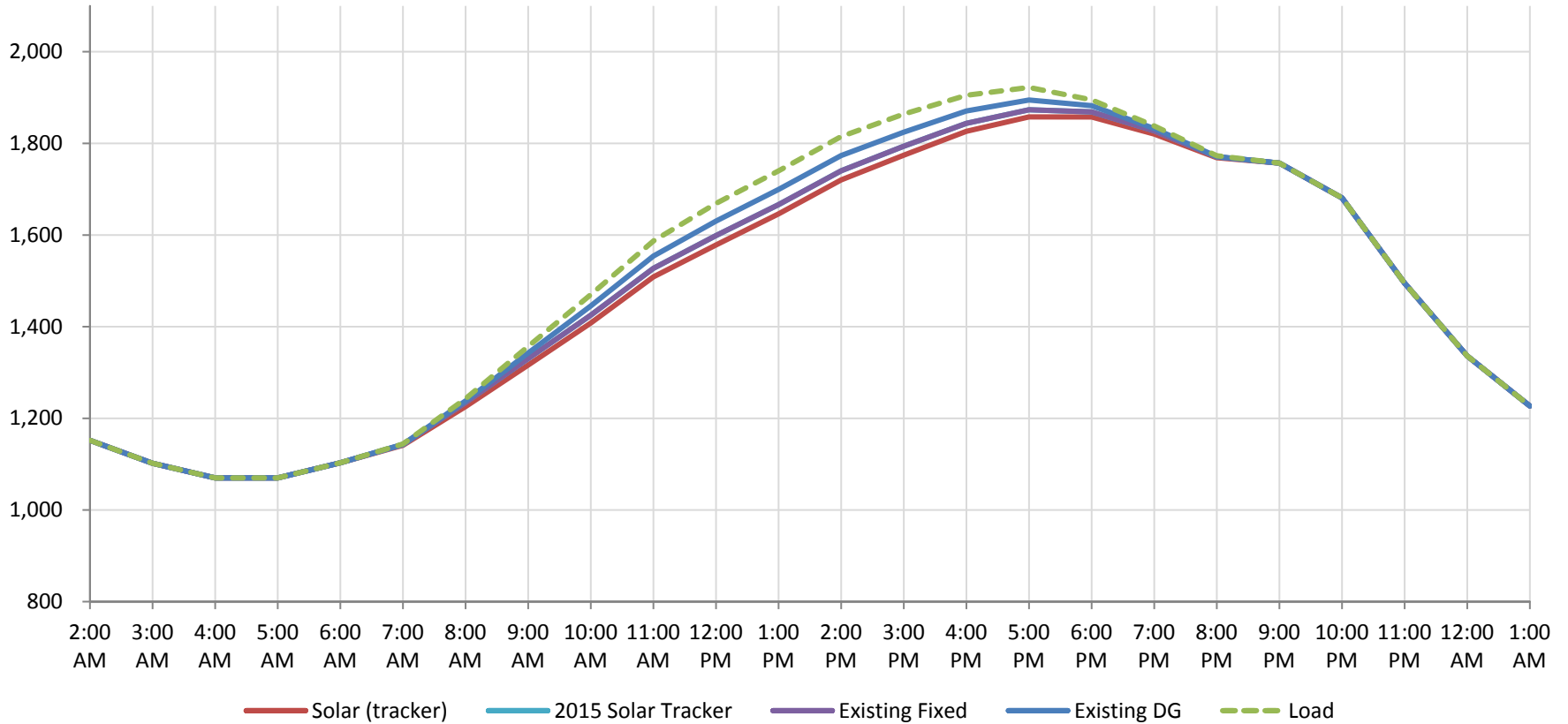


SOLAR ENERGY – JULY TYPICAL DAY ENERGY PRODUCTION



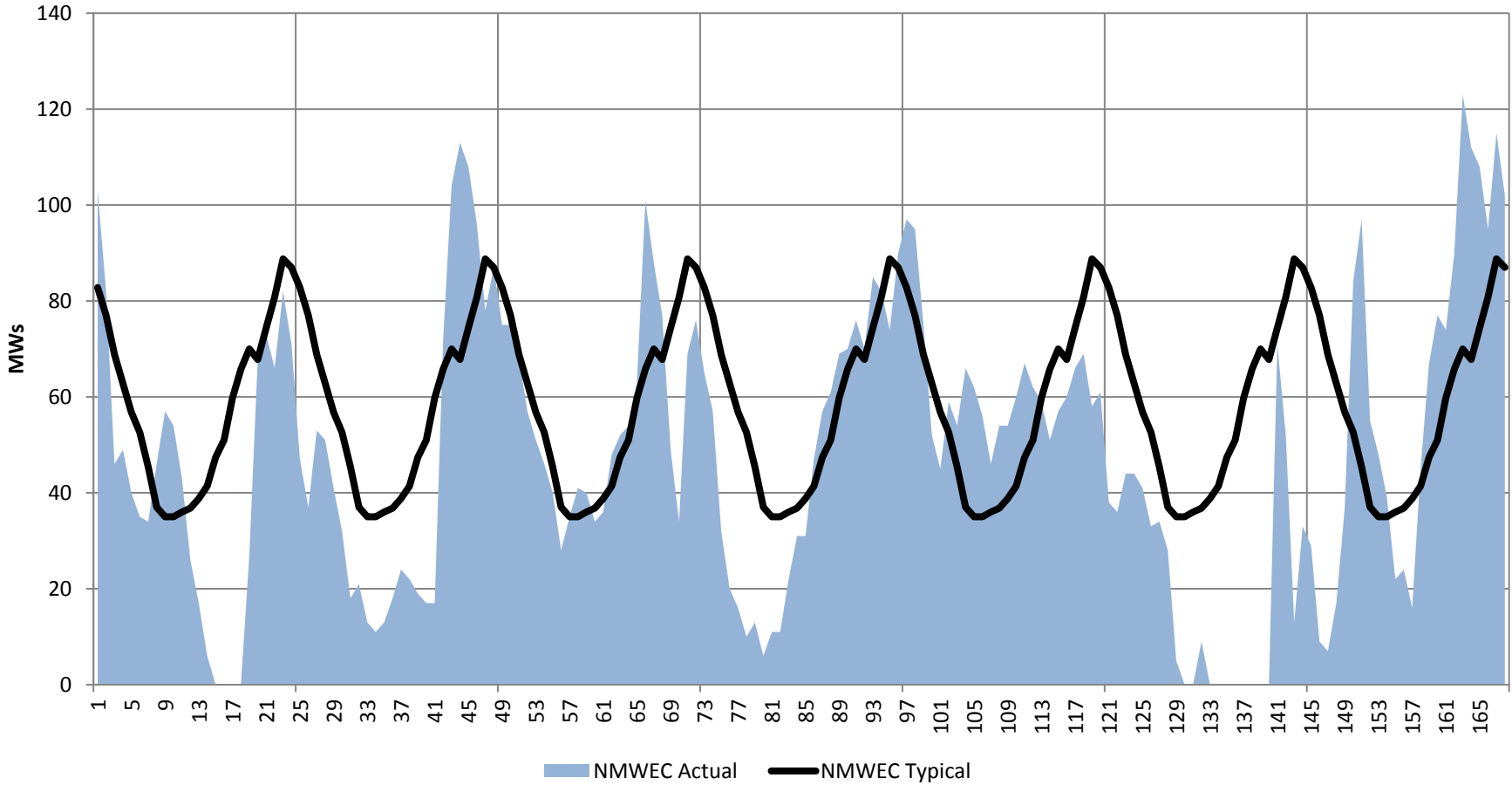
SOLAR ENERGY – SOLAR IMPACT ON PEAK LOAD

Typical Peak Day -- Impact of Solar Resources



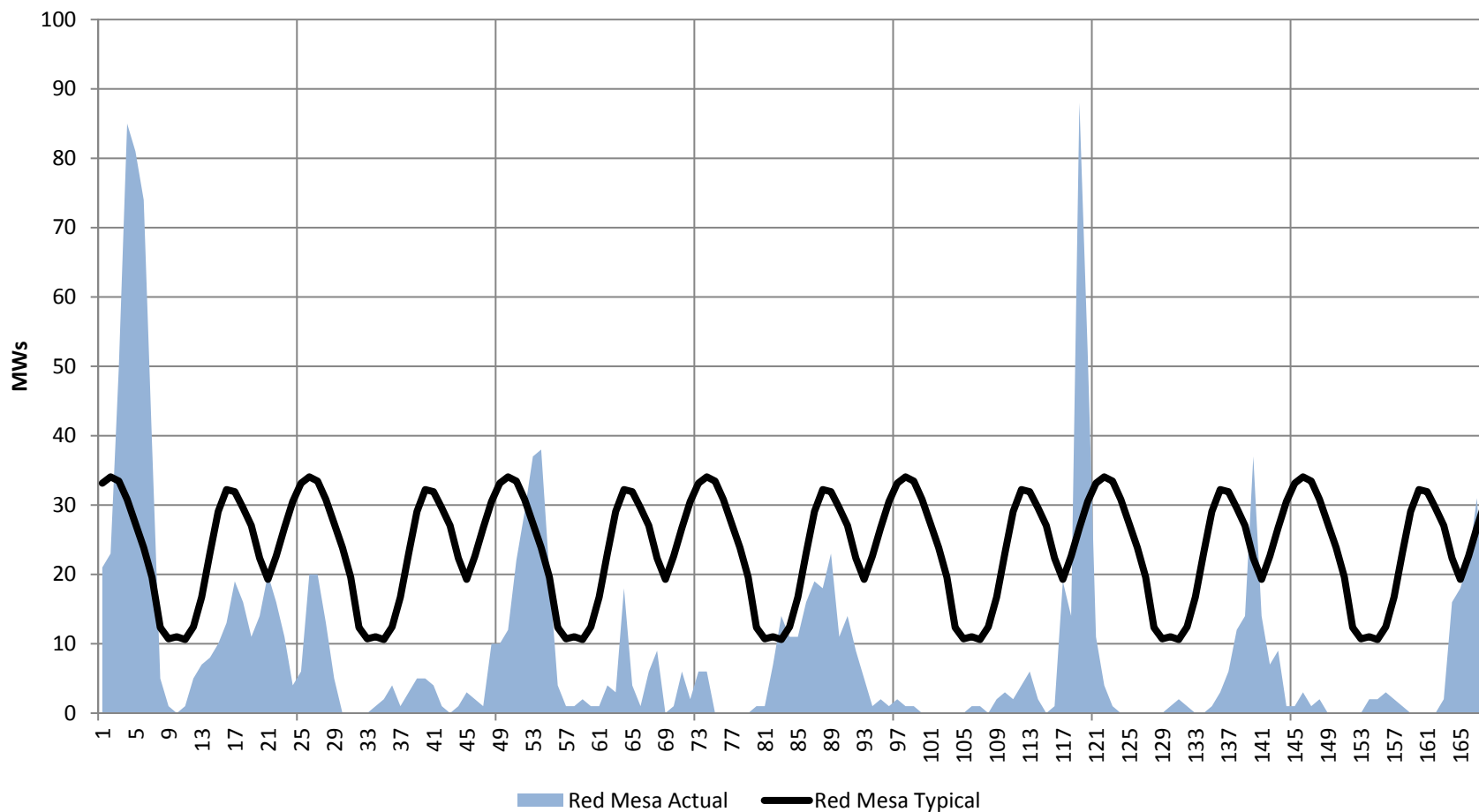
WIND ENERGY KEY ATTRIBUTES

NMWEC Hourly Production 6/20/15-6/26/15



WIND ENERGY KEY ATTRIBUTES

Red Mesa Hourly Production 6/20/15-6/26/15



MAKE SURE WE HAVE UP TO DATE CONTACT INFORMATION FOR YOU

www.pnm.com/irp for documents

irp@pnm.com for e-mails

Register your email on sign-in sheets for alerts of upcoming meetings and notices that we have posted new information to the website.

Meetings Schedule:

Thursday, Sept. 1, 2016, 10 am – 3 pm

Thursday, Sept. 22, 2016, 10 am – 3 pm

Thursday, Oct. 13, 2016, 10 am – 3 pm

Thank you

