



Utility Scale Renewables and Distributed Generation

2014 UNS IRP Workshop

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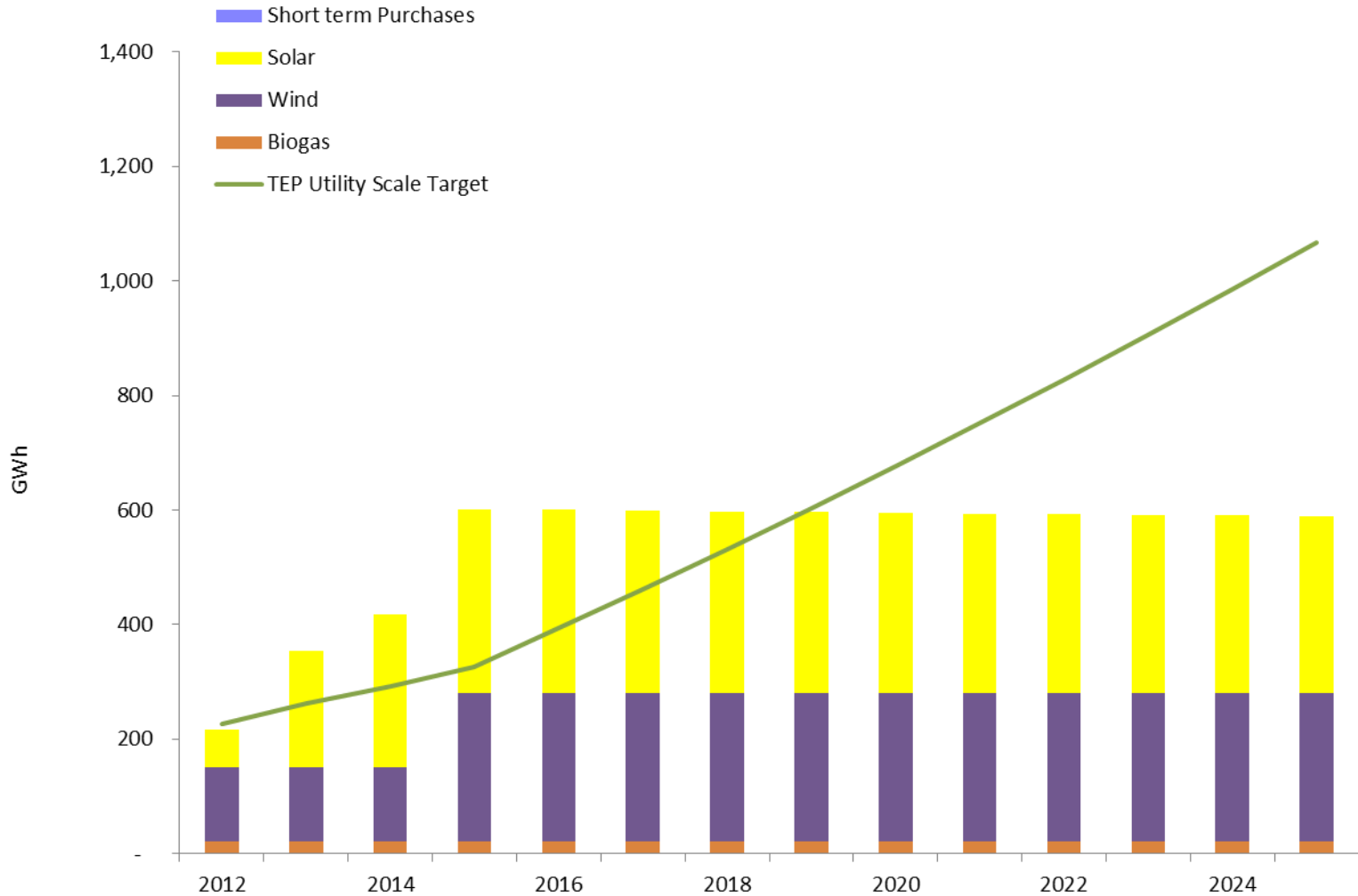
Director Wholesale and Renewable Resources



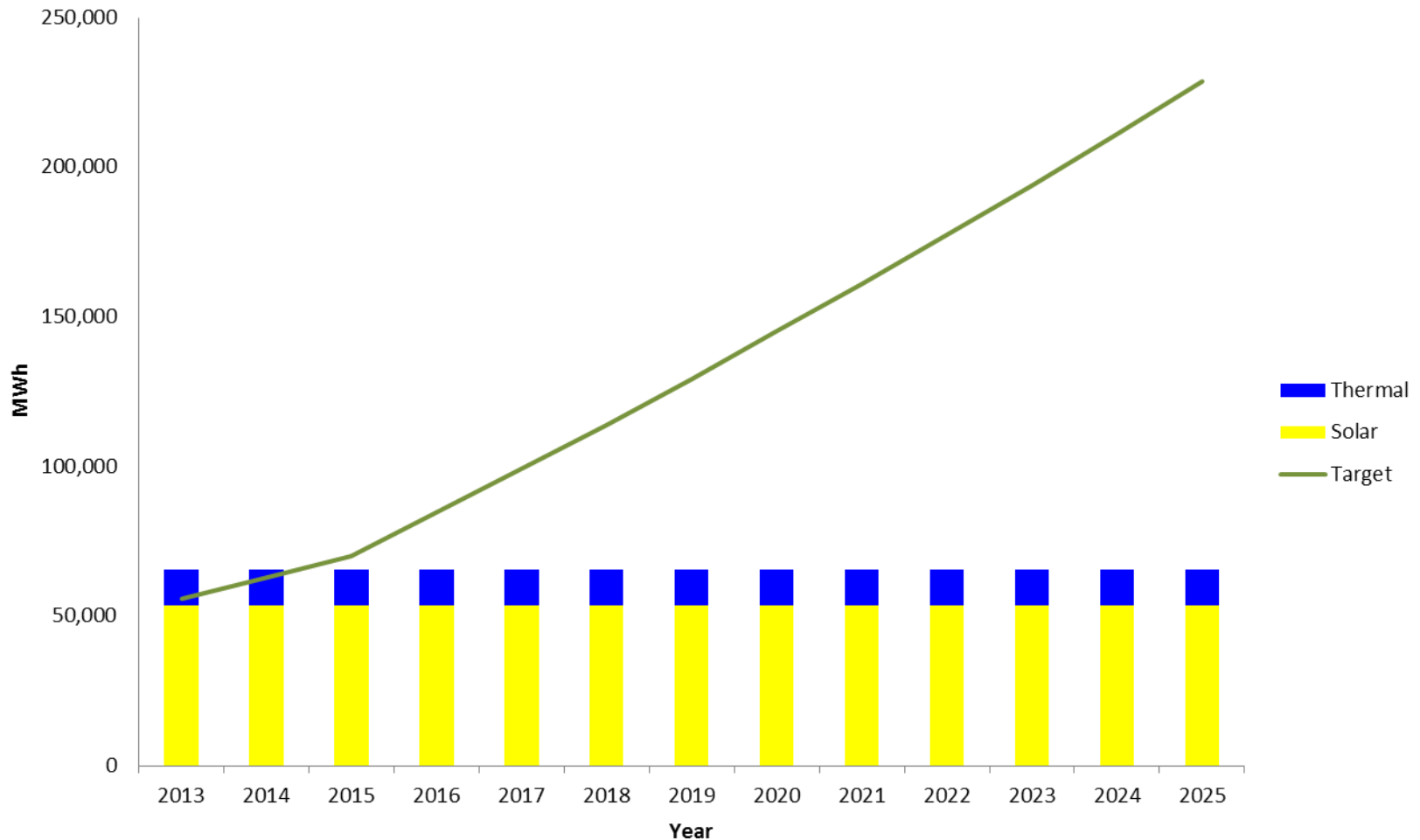
TEP Utility Scale Generation

Project	Capacity MW (DC)	Annual MWh	Technology	Expected In- Service Date	TEP Owned
Existing Renewable Generation					
Sundt –Los Reales	4	21,100	Biogas	Operational	Yes
SGS	6.4	7,573	Fixed PV	Operational	Yes
UASTP I - Solon	1.6	3,041	SAT PV	Operational	Yes
UASTP II - Amonix	2	4,111	CPV	Operational	No
UASTP III - Solon	5	7,914	Fixed PV	Operational	Yes
UASTP IV - AstroSol	6	10,407	Fixed PV	Operational	No
SunPower	0.5	875	Fixed PV	Operational	Yes
Prairie Fire	5	7,954	Fixed PV	Operational	Yes
NRG Solar	35	78,010	Fixed PV	Operational	No
SunEdison	25	57,950	SAT PV	Operational	No
E.ON	6.2	14,518	SAT PV	Operational	No
E.ON	14	32,782	SAT PV	Operational	No
Macho Springs	50.4	130,244	Wind	Operational	No
Total Existing	161	376,480			
Bright Tucson Solar Buildout Plan					
SunPower	10	19,947	Fixed/LCPV	1-Oct	Yes
Areva	5	14,310	PV/Thermal	1-Feb	Yes
Total Future - BTSBP	15	34,257			
Future Renewable Generation					
Cogenra	1	1,968	LCPV	1-Jun	No
Avalon Solar	35	66,532	Fixed PV	1-Jul	No
Red Horse Wind	50	129,560	Wind	2015	No
Total Future – Pending (Contracts)	86	198,061			
Total Planned Generation (Contracts)	262	608,798			
Total Planned Generation thru 2014	212	479,237			

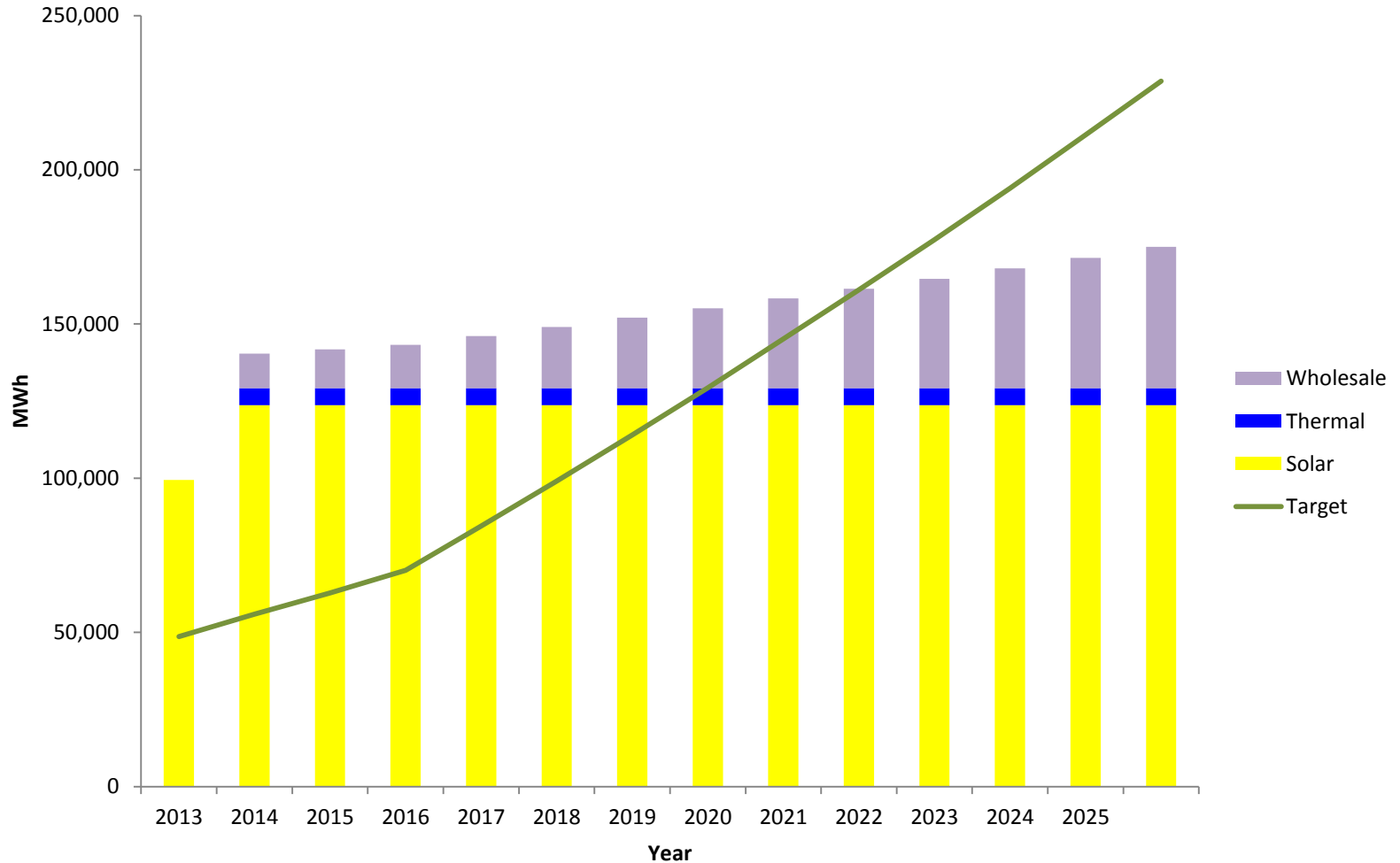
TEP Utility Scale



TEP Residential Distributed Generation



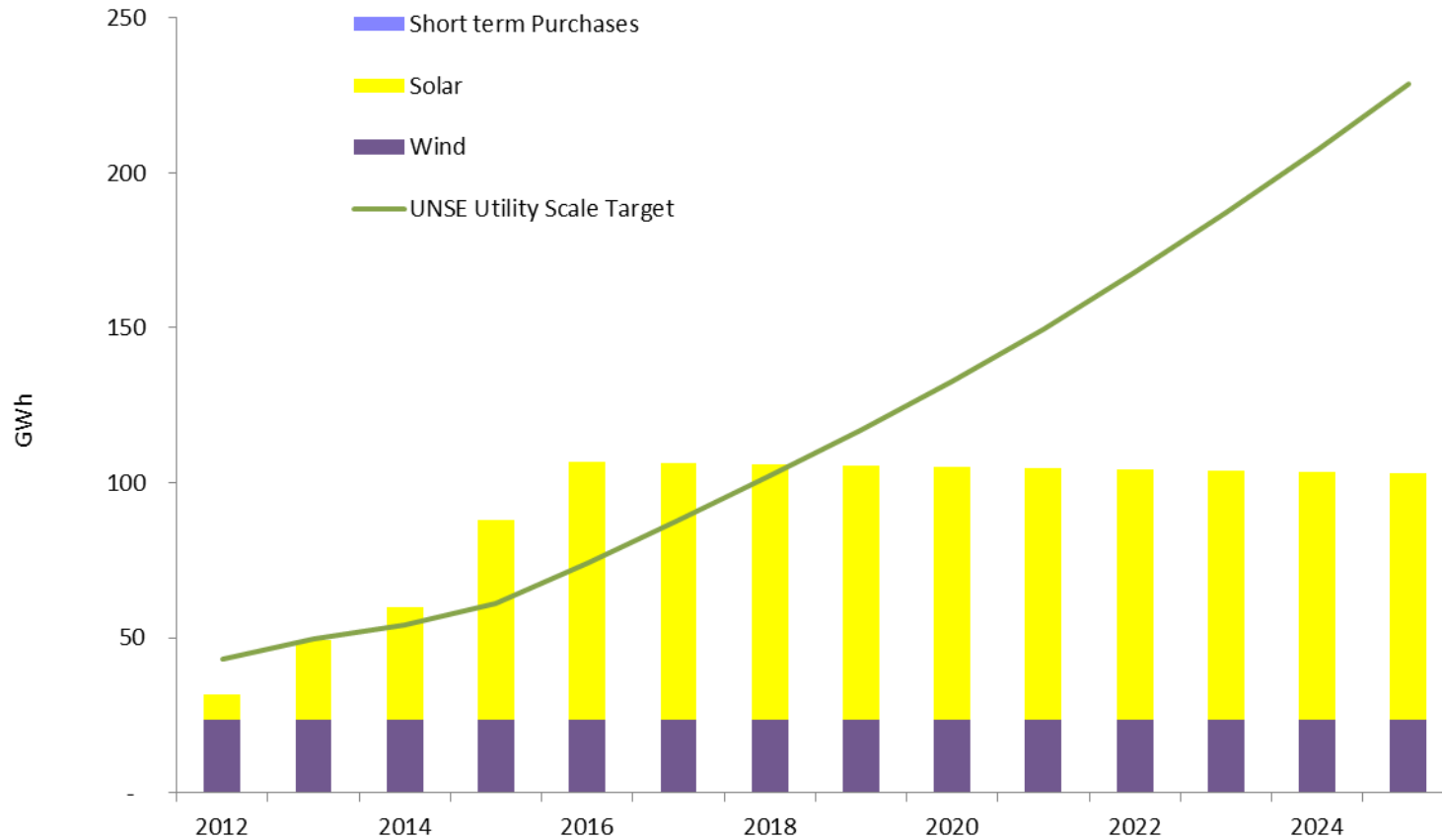
TEP Non-Residential Distributed Generation



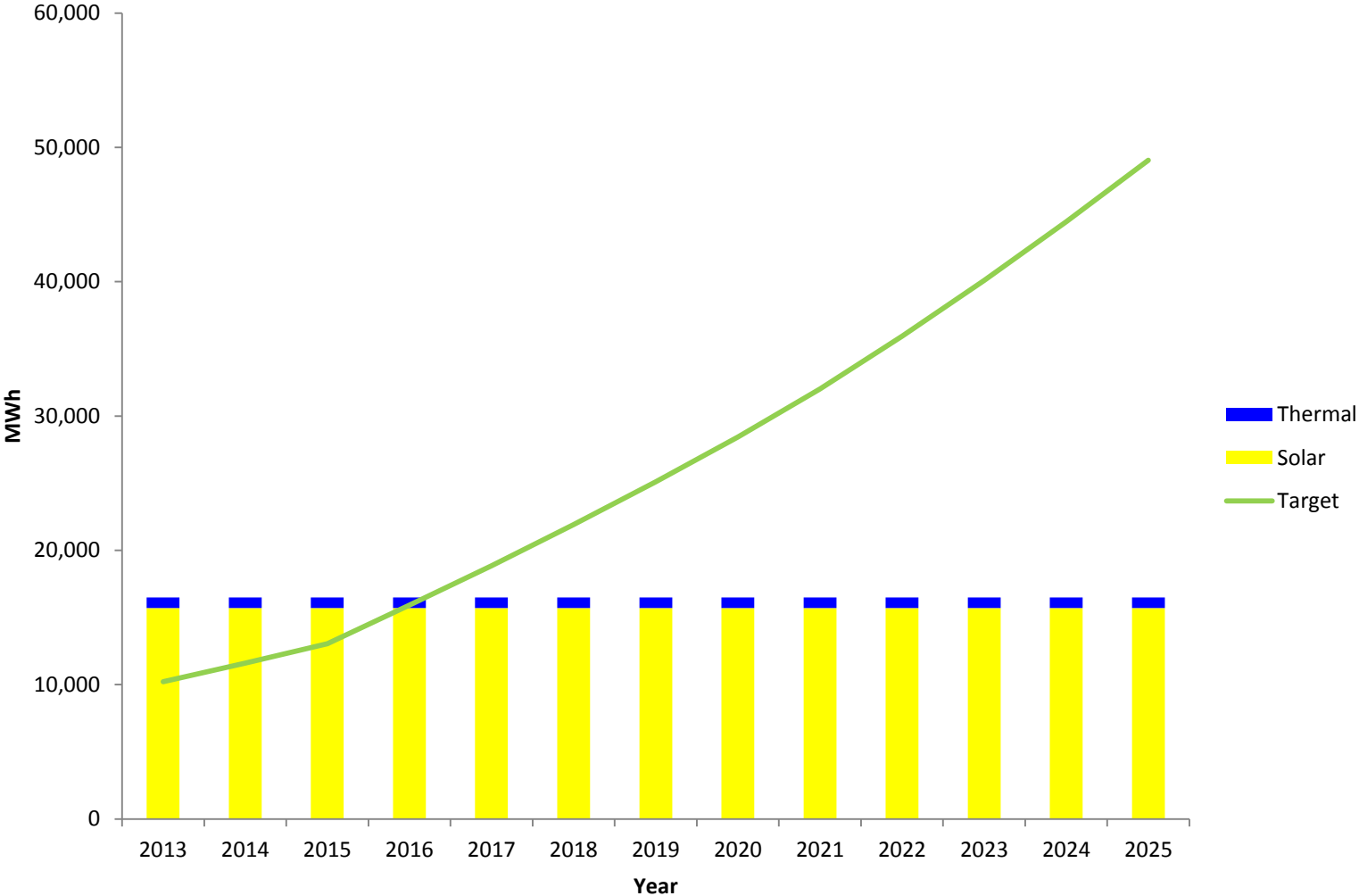
UNSE Utility Scale Generation

Project	Capacity MW (DC)	Annual MWh	Technology	Expected In- Service Date	UNSE Owned
Existing Renewable Generation					
Solon BASBP La Senita	1.2	2,140	SAT PV	Operational	Yes
Solon PPA Black Mtn	10	2,365	SAT PV	Operational	No
Western Wind	10	2,365	Wind (PV)	Operational	No
Total Existing	11.2	6,870			
Bright Arizona Solar Buildout Plan					
Project	Capacity MW (DC)	Annual MWh	Technology	Expected In- Service Date	UNSE Owned
Rio Rico	7.2	11,540	Fixed PV	1-Jan	Yes
Total Future - BASBP	7.2	11,540			
Future Renewable Generation					
20 MW PPA	20	47,300	TBD PV	2015	No
Total Future – PPA	20	47,300			
Total Planned Generation (Contracts)	18.4	18,410			
Total Planned Generation thru 2015	38.4	65,710			

UNSE Utility Scale



UNSE Residential Distributed Generation



UNSE Non-Residential Distributed Generation

