

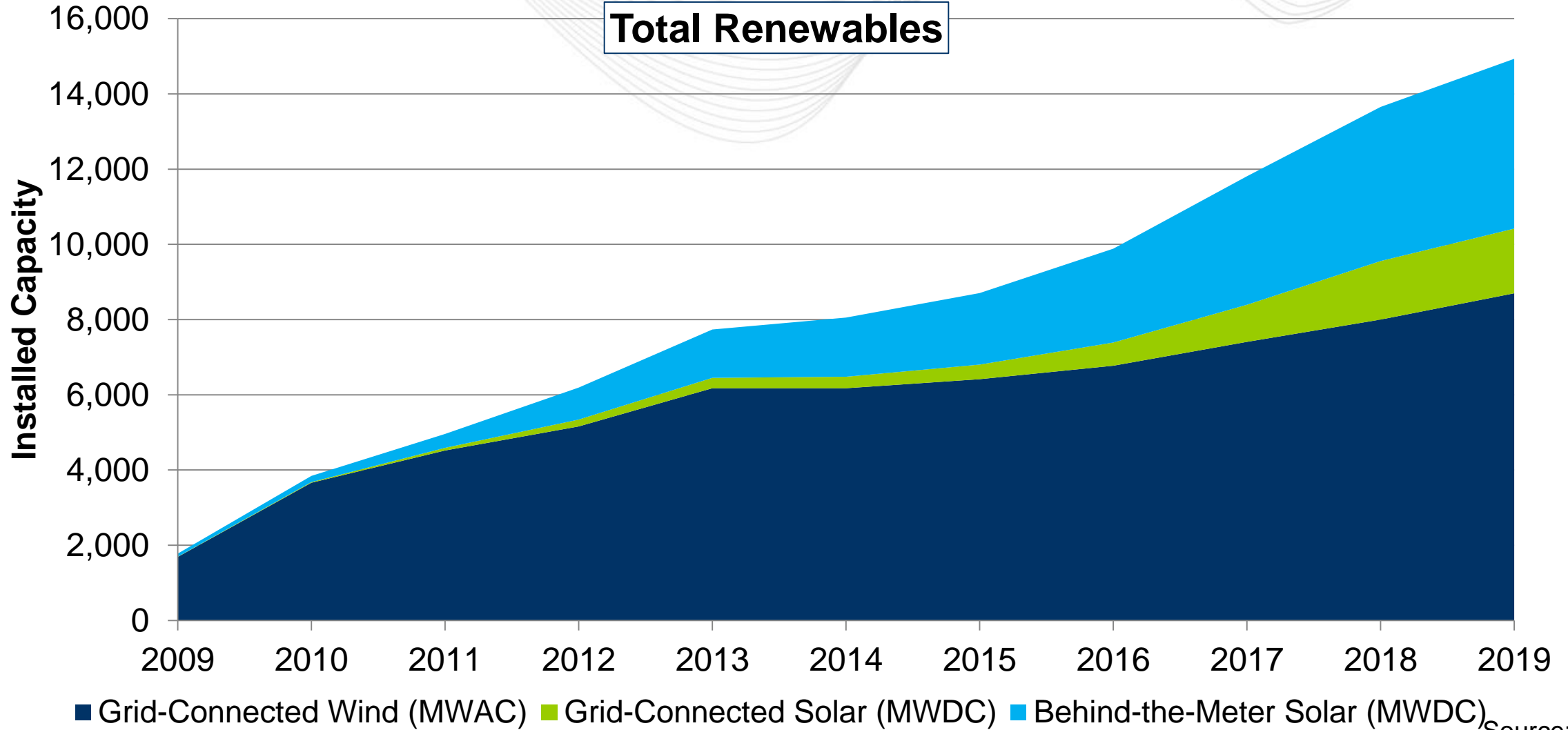
Renewable Forecasts Update

December 9, 2019

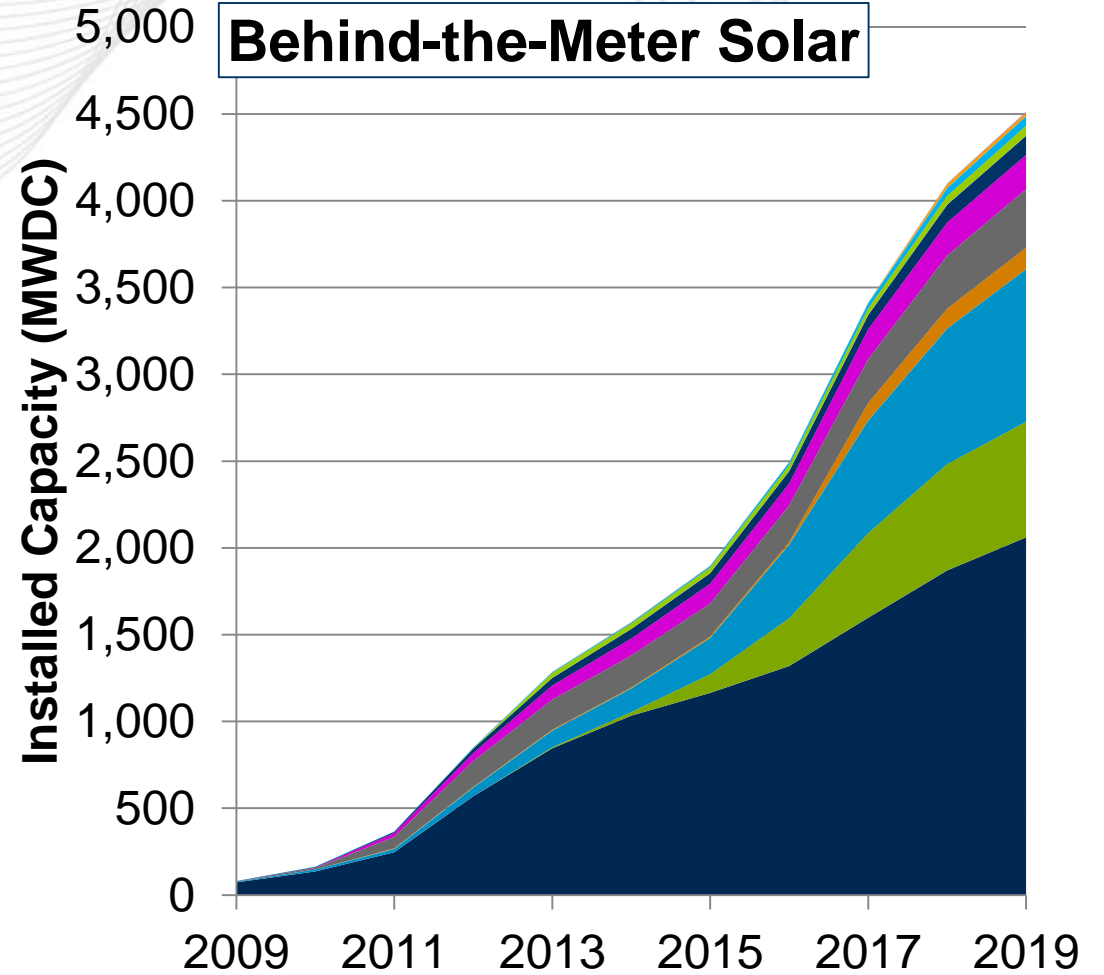
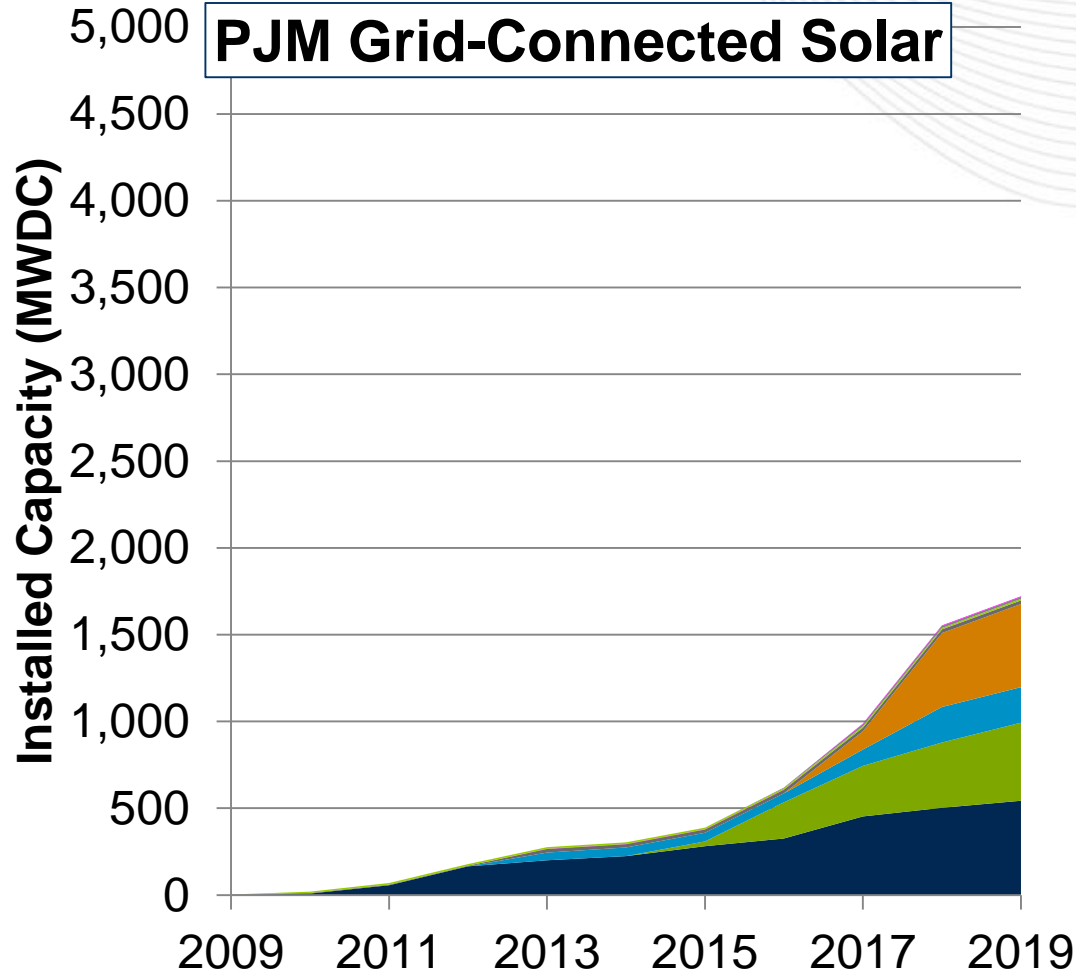
Joseph Mulhern
Sr. Engineer, Generation



Ten Years of Renewable Growth in PJM



Source: GATS



■ NJ
 ■ NC
 ■ MD
 ■ VA
 ■ PA
 ■ OH
 ■ DE
 ■ IL
 ■ DC
 ■ KY
 ■ IN
 ■ MI
 ■ WV
 ■ TN

Source: GATS

High visibility

Moderate visibility

PJM Grid-Connected	Behind the Meter
Owned by PJM Members	Owned by individuals or non-members
Participate in PJM wholesale markets	Do not participate in PJM markets
Data sent to PJM in queue process	Some limited public data available
Send real-time output data to PJM	Only some send real-time data to PJM

5-minute granularity for next 6 hours
Hourly granularity for next 7 days

Load

Wind

Solar

By Zone

Grid-
Connected
by Farm

Grid-
Connected
by Park

BTM (≥ 15
MW) by
park

BTM (all)
by zone

Monthly Wind Power Curtailments – 2014 to 2018

