

2026 DER Forecast Enhancements



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ADVANCED FORECASTING & ANALYTICS



Acronyms

ATB	Annual Technology Baseline	IOU	Investor-owned utility
BESS	Battery Energy Storage System	ITC	Investment tax credit
BTM	Behind-the-meter	NEB	Net energy billing (ME)
CBI	Capacity-based incentive	NM, NEM	Net metering, net energy metering
CELT	Capacity, Energy, Load, and Transmission report	NREL	National Renewable Energy Laboratory
C&I	Commercial and industrial	NRES	Non-residential Renewable Energy Solutions (CT)
DER	Distributed energy resource	PBI	Performance-based incentive
DG	Distributed generation	PP-12	Planning Procedure 12
DGFWG	Distributed Generation Forecast Working Group	PV	Photovoltaic
dGEN™	Distributed Generation Market Demand Model	REF	Renewable Energy Fund (RI)
EOR	Energy only resources	REG	Renewable Energy Growth program (RI)
FCM	Forward Capacity Market	RRES	Residential Renewable Energy Solutions (CT)
FITs	Feed-in-tariffs	SCEF	Shared Clean Energy Facility program (CT)
IBI	Investment-based incentive	SMART	Solar Massachusetts Renewable Target
ICR	Installed Capacity Requirement		

Objectives

- This presentation describes three enhancements planned for the 2026 distributed energy resource (DER) forecast
 1. DER PV Scenario Forecast
 2. DER storage (or battery energy storage system - “BESS”) forecast update
 3. Accounting for DER PV end-of-life

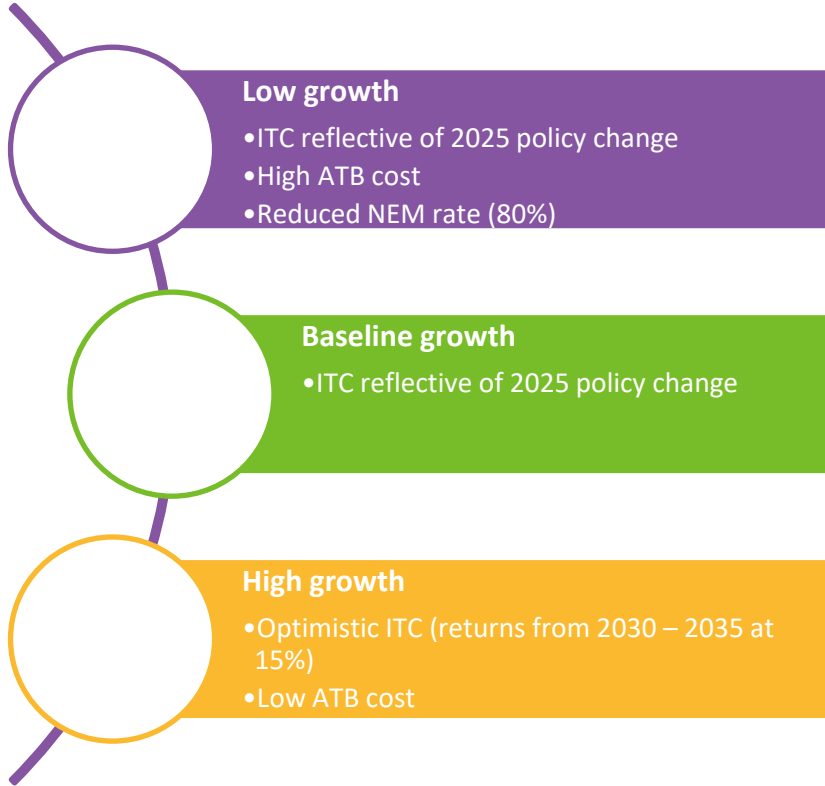
DER PV SCENARIO FORECAST



Introduction

- To date, the DER PV forecast has reflected a single set of baseline assumptions
 - Has not considered uncertainty of primary adoption drivers such as different technology costs, net energy metering (NEM) credit rate, or policy outlooks
- For CELT 2026, the ISO will develop the DER PV forecast using different scenarios (i.e., sets of assumptions) to illustrate different outlooks on PV adoption growth in the region.
- The goals of the forecast scenarios include:
 - Help quantify the amount of forecast uncertainty due to uncertainty in key assumptions
 - May provide support for existing study processes that require non-baseline assumptions
 - Represent first steps towards more comprehensive scenario-based forecasts for longer-term studies

DER PV Scenario Forecast



- Assumptions used in all scenarios
 - Load growth
 - Retail rate
 - State policy
- Final CELT 2026 DER PV nameplate forecast will still use the baseline growth scenario

DER BATTERY ENERGY STORAGE SYSTEM FORECAST

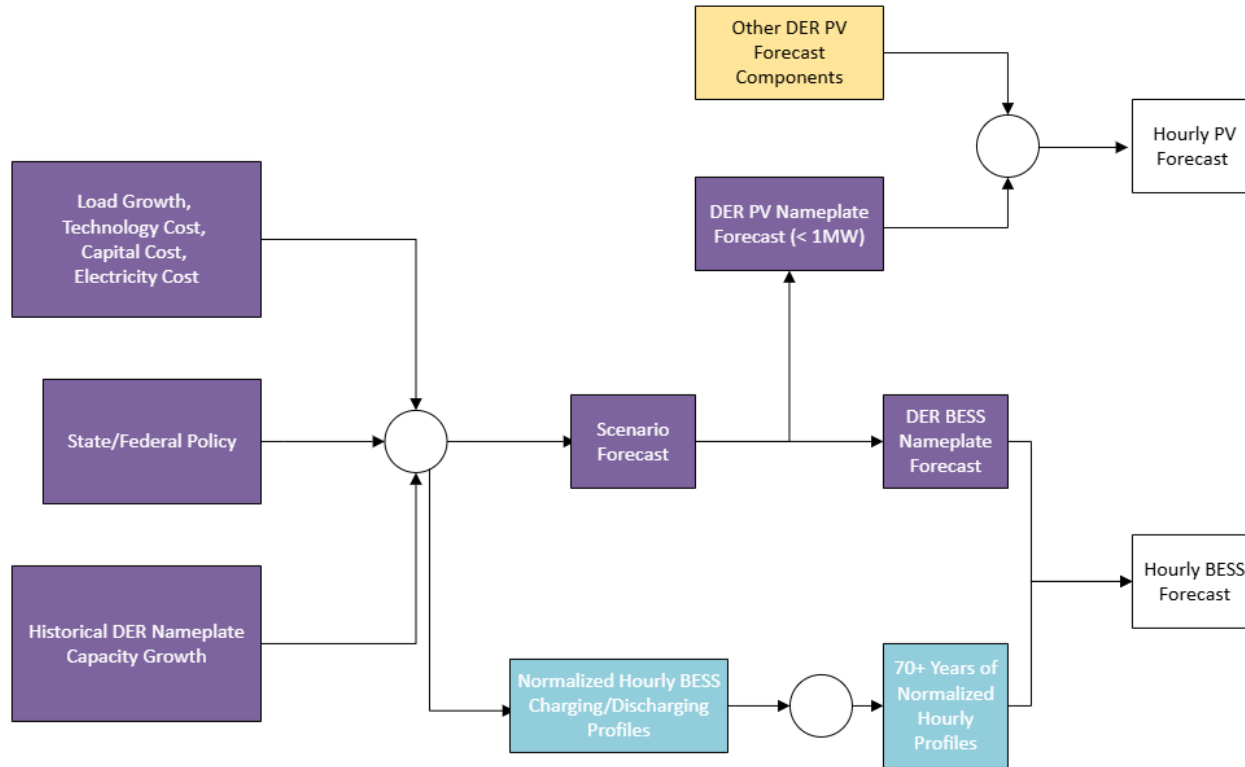
Transitional Slide Subtitle



Introduction

- The ISO is developing a DER BESS forecast to be included in CELT 2026
 - A forecast of behind-the-meter (BTM) batteries co-located with residential and commercial rooftop PV
- The DER BESS forecast will consist of a nameplate adoption forecast and corresponding hourly profiles of BESS charging/discharging

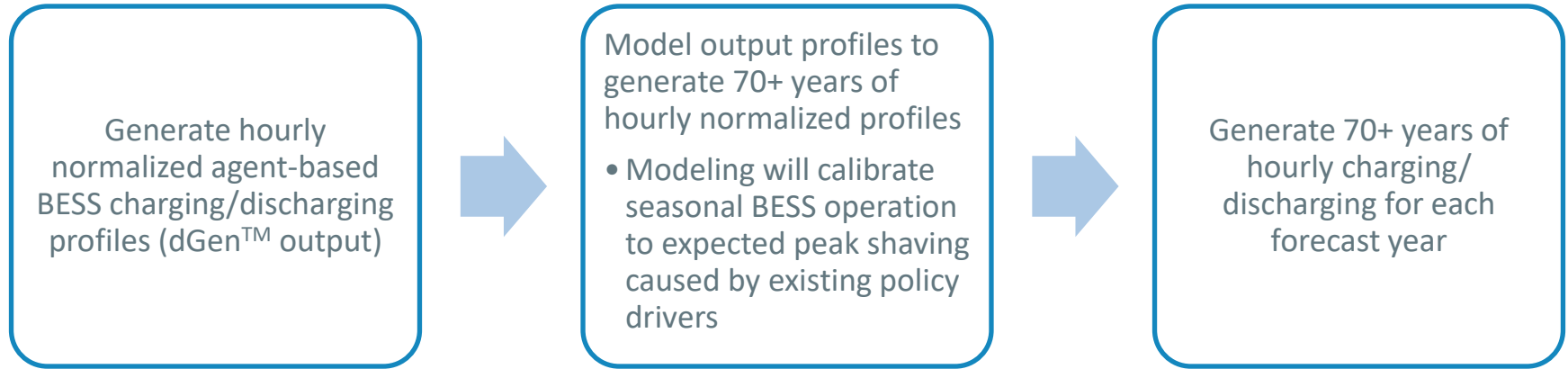
CELT 2026 DER Storage Forecast Process Flow



Methodology – Nameplate Capacity

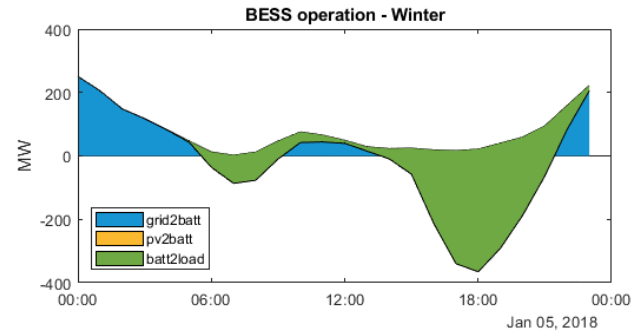
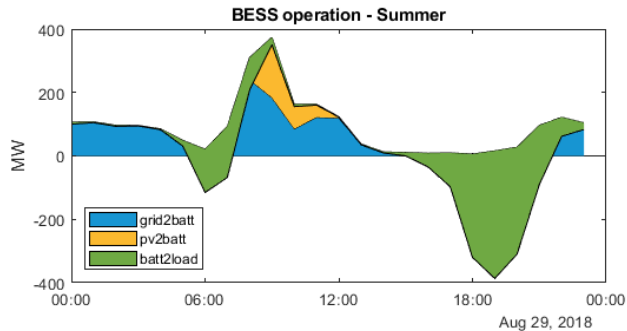
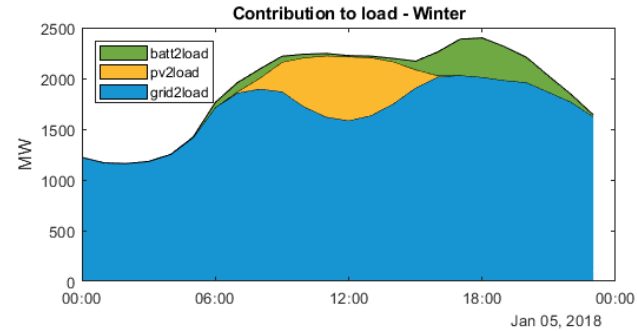
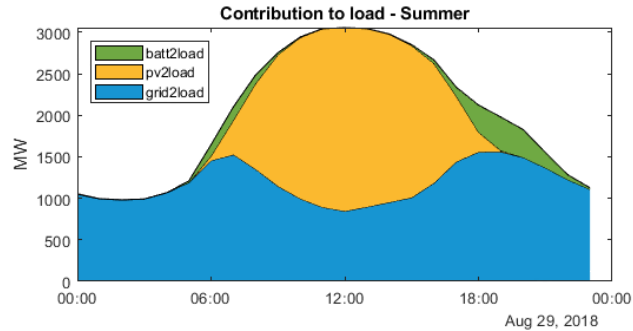
- All BESS nameplate capacity (MW) forecast will be developed using dGen™
 - PV and BESS forecasts will be generated as part of the same dGen runs
- Adoption forecast will be guided by dGen’s agent-based peak shaving dispatch strategy
 - Dispatches the battery to reduce agent-level peak demand to reduce customer bill
- Forecast will be a forecast of incremental BTM BESS growth starting in the first year of the forecast

Methodology – Hourly Modeling



Example dGen™ Output Hourly Profiles

- Example aggregate hourly load and BESS profiles (for agents with adopted BESS) demonstrating the peak shaving use case



ACCOUNTING FOR DER PV END-OF-LIFE

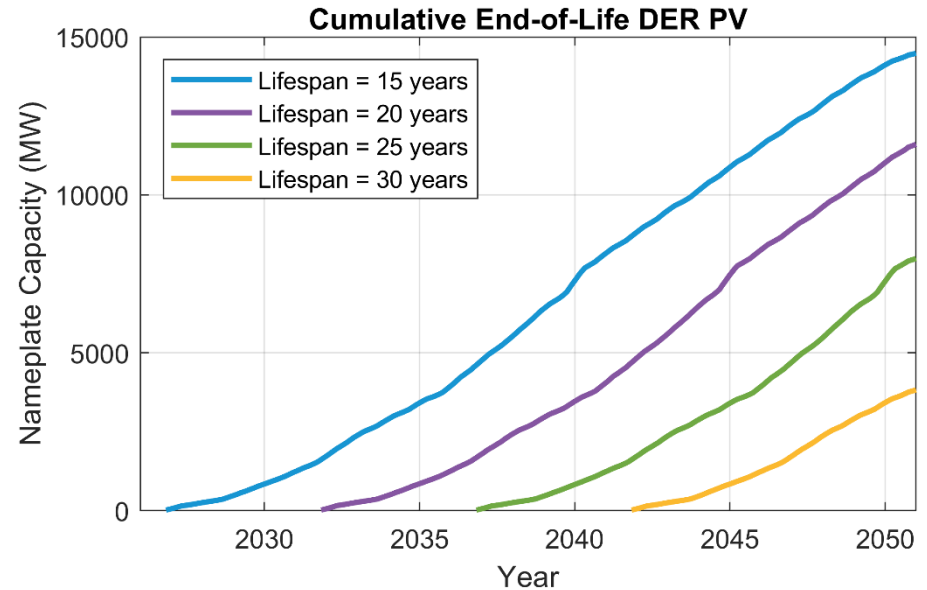


Introduction

- The lifespan of PV systems is affected by numerous factors, including, but not limited to:
 - Time to failure of components (inverters, panels, balance of system)
 - Roof replacement, building renovations or demolition
- When DER PV reaches end-of-life, system owners decide whether to repower or retire the system
 - Repower: System or individual components are replaced/refurbished for continued use
 - Retire: System is decommissioned and will no longer be in service
- The PV forecast reflects newly adopted DER PV, but does not consider the impact of future end-of-life turnover
- As the region's DER PV fleet continues to age, a growing number of systems will begin reaching end-of-life and increasingly impact future cumulative amounts of DER over time

Estimated End-of-Life Turnover

- Based on historical and forecast growth reflected in the 2025 DER PV forecast, simple projections of cumulative end-of-life capacity are illustrated based on different assumed lifespans of a PV system
 - Inverters have a typical lifespan of 15 years
 - PV panels can have a lifespan of 30 years or longer, but produce less power over time



Accounting for PV End-of-Life

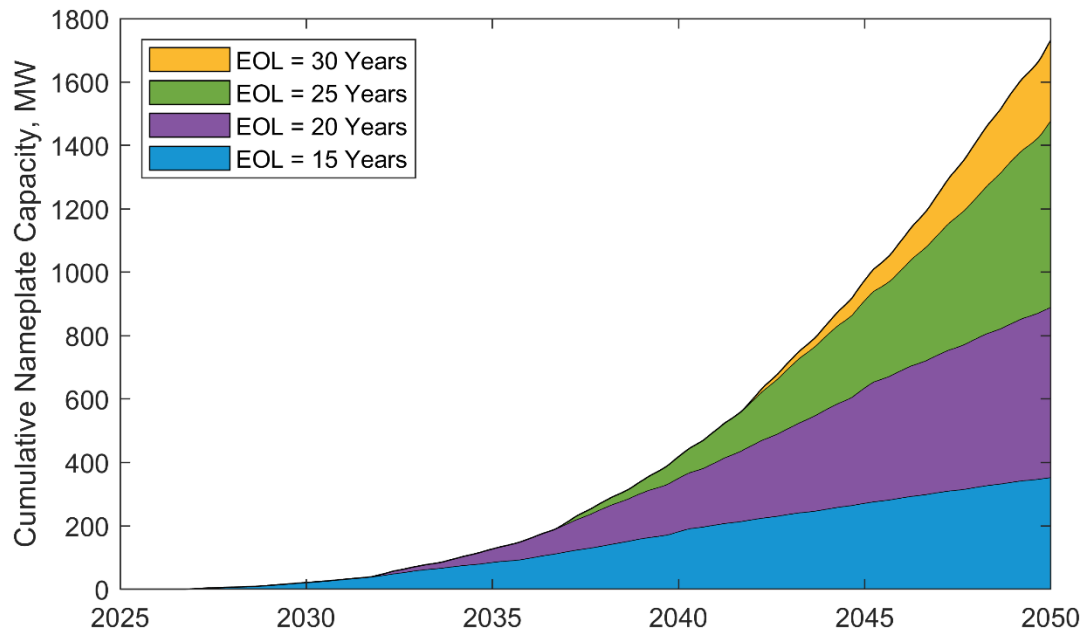
- The ISO has developed the following initial assumptions to account for end-of-life system turnover in the 2026 forecast
 - Systems will reach end-of-life according to a variety of lifespans ranging from 15-30 years
 - 75% likelihood for system repowering, 25% likelihood for retirement

Lifespan (years)	Lifespan Likelihood (%)	Retirement Likelihood (%)
15	10	25
20	20	25
25	35	25
30	35	25

Estimated Cumulative Retired Capacity

CELT 2025

- Based on the assumptions outlined on the previous slide, a projection of cumulative DER PV estimated to be retired due to end-of-life decision-making can be estimated
 - Estimates based on 2025 DER PV forecast are illustrated in plot
- Retired capacity can then be subtracted from the adoption forecast to reflect anticipated end-of-life turnover



NEXT STEPS



Next Steps for CELT 2026

- The ISO will continue working on the 2026 forecast, including the three enhancements outlined herein
 - Refine details in each forecast scenario
 - Update DER BESS hourly modeling methodology
 - Continue reviewing and researching the end-of-life likelihood assumptions
- The next DGFWG meeting will be on December 8 and will include:
 - Policy updates from the New England states
 - ISO updates on the 2026 forecast (tentative)

Questions

