



Integrated Grid Planning

Stakeholder Council Meeting

August 18, 2020

LISTENING+ INTEGRATING+ COLLABORATING
to Reach 100% Renewables



Meeting Agenda

1. Welcome
2. Ideas for Improved Stakeholder Council Engagement
3. Update on the NREL Resource Potential Study
4. Looking Ahead

Nov '19	<ul style="list-style-type: none"> • Update on Working Groups • Challenges the Company Faces
Jan '20	<ul style="list-style-type: none"> • Review Preliminary Forecasts and Other Assumptions • Review Resilience Planning Criteria and Resilience Modeling Information • Public Meeting Preview
Mar '20	<ul style="list-style-type: none"> • Review Forecasts and Other Assumptions • Modeling Sensitivities (SEOWG) • Public Meeting Recap
May '20	<ul style="list-style-type: none"> • Review Stage 2 Final Award Group • Review Point Letter and Filing • Review SEOWG Proposed IGP Services
Jun/July Aug '20	<ul style="list-style-type: none"> • Ideas for Improved Stakeholder Council Engagement • Review NREL Resource Potential Update • Review Needs Assessment Preliminary Results (Will present to SEOWG/TAP meeting first)
Aug Sept '20	<ul style="list-style-type: none"> • Complete Review of SEOWG Deliverable • TBD
Jun '21	<ul style="list-style-type: none"> • Review 5-Year Resource and T&D Solution Sourcing Preliminary Results
Nov '21	<ul style="list-style-type: none"> • Review Solution/Bid Evaluation and 5-Year IGP Plan



Stakeholder Council Engagement



Stakeholder Council Background

- The SC provides strategic input and feedback on process development, activities and results, and aspects for improvement. Discussions on priority issues with subject matter expert-based will occur to address tactical and technical issues. The aim is to foster collegial, balanced discussions and shared understanding of issues in addressing IGP planning results.
- SC Members must commit to meeting in-person for a two-year IGP planning cycle. Online participation is acceptable on a limited basis. Members are expected to share ideas, ask questions, and contribute to discussions.

Commission Guidance

- Stakeholder engagement is critical to the success of the IGP process and the commission expects the Companies' proposed customer and stakeholder process will support and improve the resulting plans. (Order 35569 Pages 24-25, July 12, 2018)



NREL Solar and Wind Resource Potential Update



Discussion

- What is a realistic or achievable potential for solar and wind (grid scale and rooftop) after considering community impacts and land use policies?
- Given potential transmission constraints on the system, should the Company analyze establishing renewable energy zones where new transmission is added in high potential areas?
- If the technical potential for rooftop solar represents a de facto “high” forecast for customer adoption, how should we think about a realistic high forecast?

Oahu Results

Capacity Factor (%)	PV (1-3) Excl DoD Lands 3% Slope	PV (2-5) Incl DoD Lands 5% Slope
>=10%	1,271 MW	3,604 MW
>=12%	1,271 MW	3,604 MW
>=14%	1,271 MW	3,604 MW
>=16%	1,266 MW	3,594 MW
>=18%	1,253 MW	3,558 MW
>=20%	1,219 MW	3,370 MW

Rooftop PV Capacity (MW)	Rooftop PV Capacity Factor (%)
3,936 MW	21.23%

Wind Speed (m/s)	Wind (3-20) Excl DoD Lands Addt'l Setbacks	Wind (2-20) Incl DoD Lands
>=6.5	97 MW	316 MW
>=7.5	6 MW	24 MW
>=8.5	0 MW	0 MW

Hawaii Island Results

Capacity Factor (%)	PV (1-3) Excl DoD Lands 3% Slope	PV (2-5) Incl DoD Lands 5% Slope
>=10%	14,260 MW	38,355 MW
>=12%	14,242 MW	38,319 MW
>=14%	14,231 MW	38,214 MW
>=16%	13,160 MW	34,824 MW
>=18%	8,993 MW	24,471 MW
>=20%	4,478 MW	16,528 MW

Rooftop PV Capacity (MW)	Rooftop PV Capacity Factor (%)
2,393 MW	19.36%

Wind Speed (m/s)	Wind (3-20) Excl DoD Lands Addt'l Setbacks	Wind (2-20) Incl DoD Lands
>=6.5	1,855 MW	2,991 MW
>=7.5	638 MW	908 MW
>=8.5	176 MW	200 MW

Maui Results

Capacity Factor (%)	PV (1-3) Excl DoD Lands 3% Slope	PV (2-5) Incl DoD Lands 5% Slope
>=10%	1,274 MW	3,028 MW
>=12%	1,274 MW	3,028 MW
>=14%	1,274 MW	3,028 MW
>=16%	1,273 MW	3,027 MW
>=18%	1,273 MW	3,025 MW
>=20%	1,193 MW	2,770 MW

Rooftop PV Capacity (MW)	Rooftop PV Capacity Factor (%)
1,636 MW	21.06%

Wind Speed (m/s)	Wind (3-20) Excl DoD Lands Addt'l Setbacks	Wind (2-20) Incl DoD Lands
>=6.5	648 MW	1,052 MW
>=7.5	187 MW	263 MW
>=8.5	36 MW	41 MW

Molokai Results

Capacity Factor (%)	PV (1-3) Excl DoD Lands 3% Slope	PV (2-5) Incl DoD Lands 5% Slope
>=10%	1,442 MW	3,354 MW
>=12%	1,442 MW	3,354 MW
>=14%	1,442 MW	3,354 MW
>=16%	1,442 MW	3,354 MW
>=18%	1,429 MW	3,335 MW
>=20%	1,423 MW	3,320 MW

Rooftop PV Capacity (MW)	Rooftop PV Capacity Factor (%)
126 MW	19.94%

Wind Speed (m/s)	Wind (3-20) Excl DoD Lands Addt'l Setbacks	Wind (2-20) Incl DoD Lands
>=6.5	593 MW	832 MW
>=7.5	101 MW	155 MW
>=8.5	20 MW	24 MW

Lanai Results

Capacity Factor (%)	PV (1-3) Excl DoD Lands 3% Slope	PV (2-5) Incl DoD Lands 5% Slope
>=10%	919 MW	1,756 MW
>=12%	919 MW	1,756 MW
>=14%	919 MW	1,756 MW
>=16%	919 MW	1,756 MW
>=18%	919 MW	1,756 MW
>=20%	919 MW	1,756 MW

Rooftop PV Capacity (MW)	Rooftop PV Capacity Factor (%)
68 MW	20.96%

Wind Speed (m/s)	Wind (3-20) Excl DoD Lands Addt'l Setbacks	Wind (2-20) Incl DoD Lands
>=6.5	451 MW	600 MW
>=7.5	102 MW	134 MW
>=8.5	0 MW	0 MW



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Backup Slides