Versant Power Integrated Grid Planning (IGP)

Environmental, Equity, and Environmental Justice (EEEJ) and Proposed Solutions

8/19/2025

Purpose

Provide stakeholders an overview of the approach to assessing IGP solutions on metrics related to environmental, equity and environmental justice (EEEJ) and an initial discussion of IGP solutions.

EEEJ consideration is required by the Maine Public Utilities Commission's order in Docket 2022-00322, issued July 12, 2024.

Versant welcomes stakeholder comments on this presentation and proposal.

- Written comments can be submitted by emailing gridandclimate@versantpower.com.
- Please provide all comments by September 19, 2025.

More information on Versant's Grid and Climate Planning can be found at:

https://www.versantpower.com/about/environmental/grid-climate-planning

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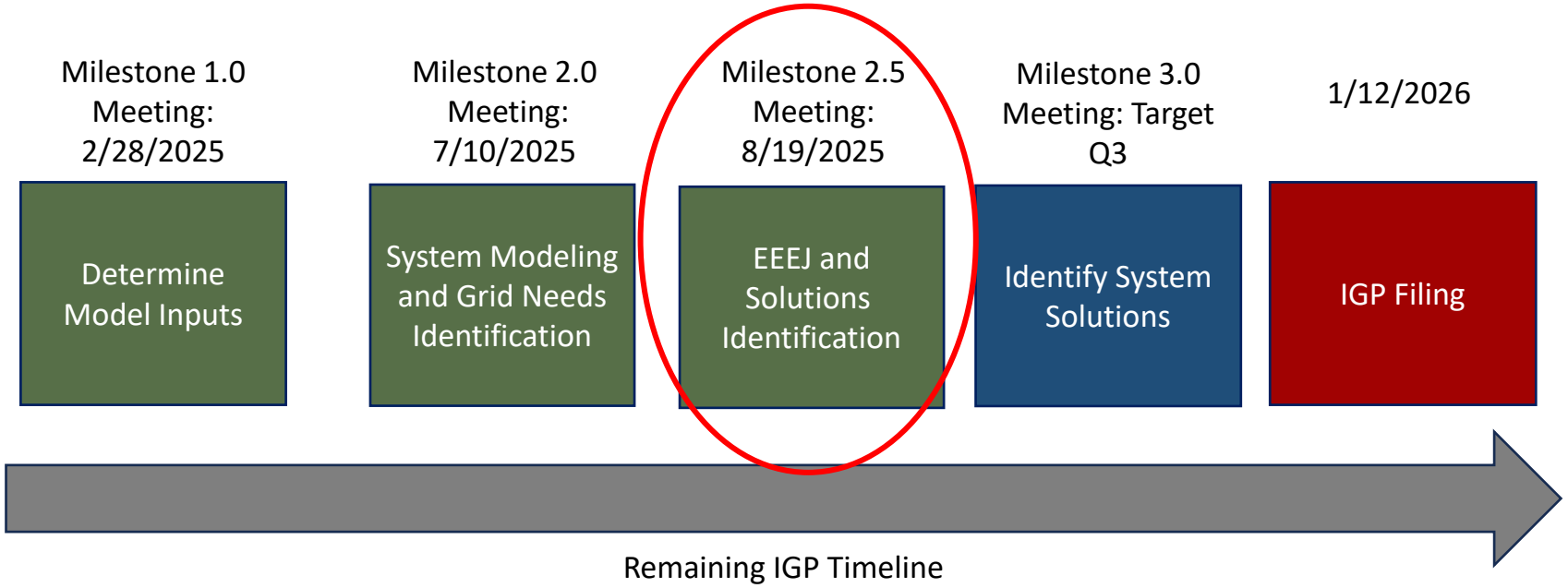
IGP Progress



Integrated Grid Planning: Public Engagement

Public engagement

- Utilities are required to actively engage with stakeholders, fostering open dialogue and transparency throughout the planning process.
- Engagement to date has included:
  - 17 community meetings
  - 2 public virtual meetings
  - 3 public presentations on IGP process
  - Meetings with state agencies and other stakeholders by request
  - Coordination with CMP
- EEEJ approach has been developed with consideration of stakeholder comments to date, including those on original IGP order

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Environmental, Equity, and Environmental Justice (EEEJ) Evaluation

Overview of EEEJ Focus

Goal: evaluate EEEJ impacts of potential grid solutions.

Three EEEJ metrics:

- **Equity –** do potential solutions benefit disadvantaged customers in Versant's service territory?
- **Emissions –** do potential solutions affect local or global emissions?
- **Environmental Impact –** do potential solutions affect the physical environment?

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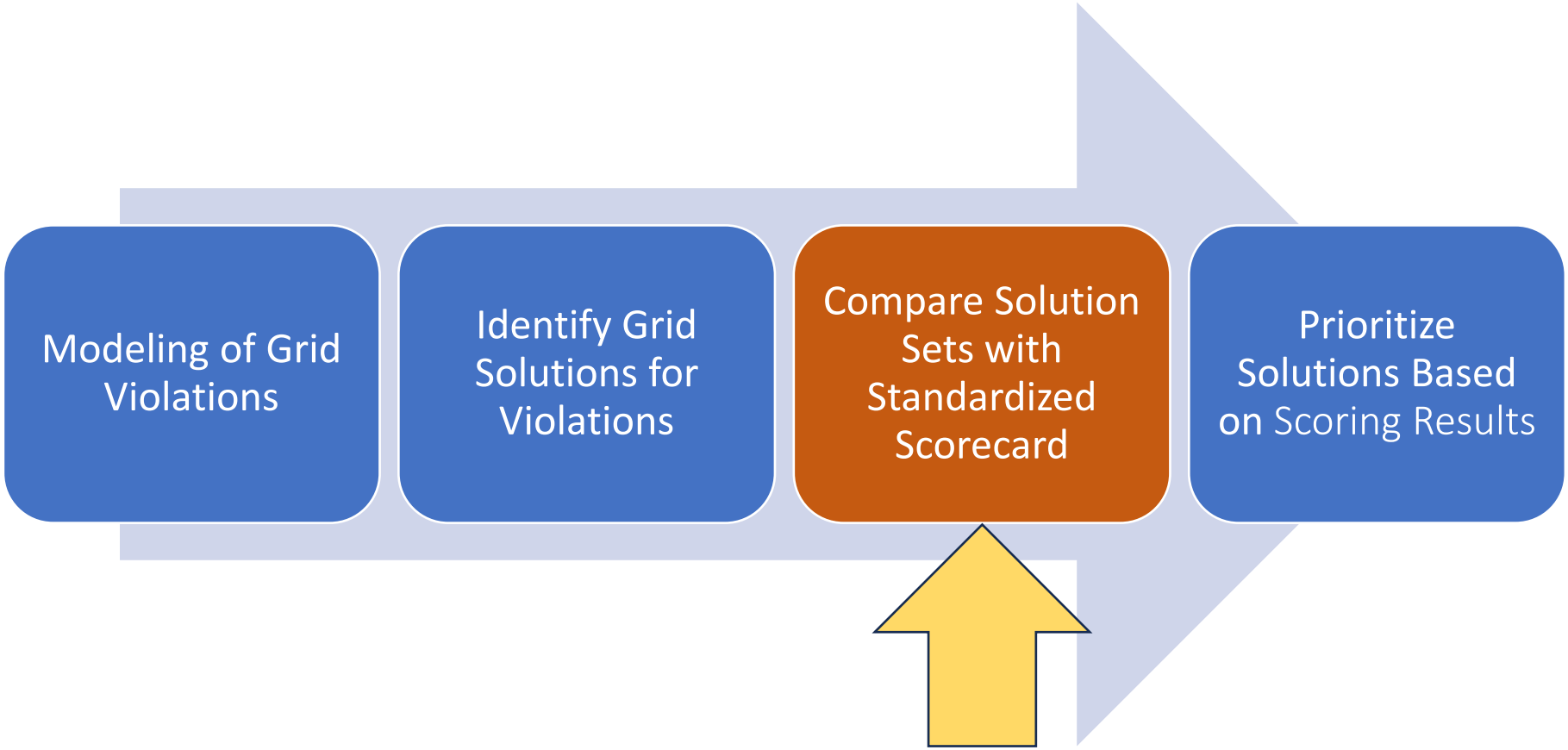
IGP Grid Solution Scoring Process



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EEEJ in the IGP Scorecard

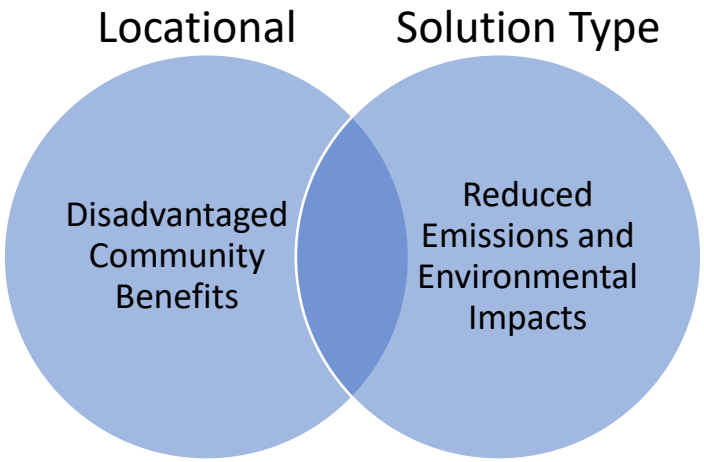
EEEJ metrics comprise 3 of 15 required evaluations on the scorecard.

Description of System Need:		*[1-3 sentences summarizing need]*			
	Evaluation Category	**Comparative Assessment Scorecard**			
		Alternative A	Alternative B	Alternative C	Alternative D
Cost	Capital costs	*[low, medium, or high impact]*			
	Operations & maintenance costs				
	Avoided costs				
Technical Performance	Efficacy				
	Execution and schedule risk				
	Existing infrastructure optimization				
	Reliability & resiliency impact				
	Flexible management of customers' load and generation				
EJ	Equity				
	Emissions impact				
	Local environmental impact				
Policy Alignment	Peak load reduction				
	Electrification readiness				
	DER and renewables integration				
	Advances state energy and climate goals				
	Overall prioritization ranking	*[1st, 2nd, 3rd, 4th]*			
Scorecard Narrative:		*[longer text describing scoring process & results, with any necessary supporting data]*			

EEEJ Evaluation Process

EEEJ Metric	Metric Measurement	Evaluation Type
Equity	Does affected grid infrastructure serve disadvantaged customers?	Locational analysis
Emissions	Does solution increase or decrease emissions?	By grid solution type
Environmental Impact	Does solution require development of new land?	By grid solution type

- Other important considerations relevant to discussions of EEEJ impacts (e.g., cost, reliability, resiliency, DER integration, alignment with policy goals) will be evaluated in other areas of the scorecard.
- Process for ongoing tracking of EEEJ impacts will be developed



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Equity Evaluation Metrics

The Equity metric will assess whether solutions will provide benefits to disadvantaged communities.

Data Need	Description	Data Source(s)
Disadvantaged Customer Definition	What customers are defined as disadvantaged from an EEEJ perspective?	Customers in census tracts identified as disadvantaged in the CEJST 2.0 data set (includes tribal areas)
Infrastructure Assessment	Which network lines and substations provide benefits to disadvantaged customers?	Geographical analysis of customers served by each network line and substation. High/Medium/Low will be determined based on % of served customers that are disadvantaged

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CEJST Disadvantaged Definition

- Census tracts are considered disadvantaged if they meet the thresholds for at least one of the tool's categories of burden, or
- If they are on land within the boundaries of Federally Recognized Tribes
- Additionally, census tracts in certain U.S. Territories are considered disadvantaged if they meet a low-income threshold.

Categories of Burden:

1. Climate change
2. Energy
3. Health
4. Housing
5. Legacy pollution
6. Transportation
7. Water and wastewater
8. Workforce development

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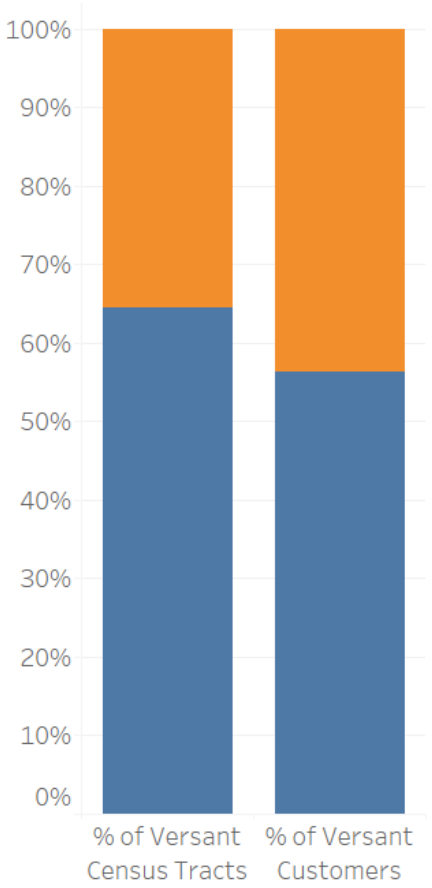
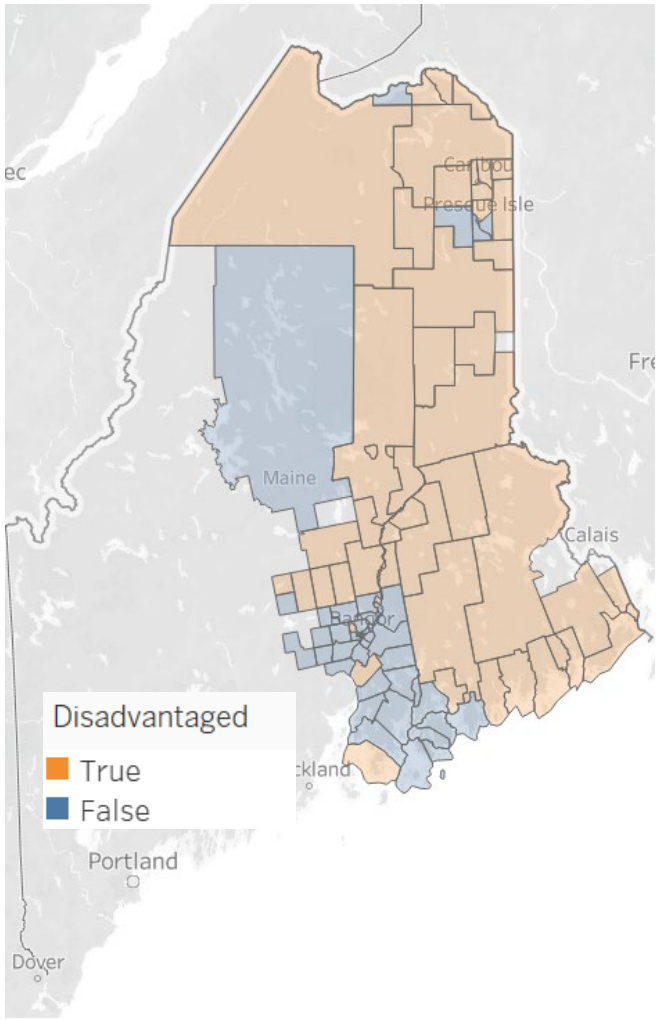
Source: Methodology & data - Climate & Economic Justice Screening Tool

Disadvantaged Census Tracts

- 127 of 358 (35%) of Versant Census Tracts are Disadvantaged
- 59,000 of 135,000 (44%) of Versant customers are in disadvantaged census tracts





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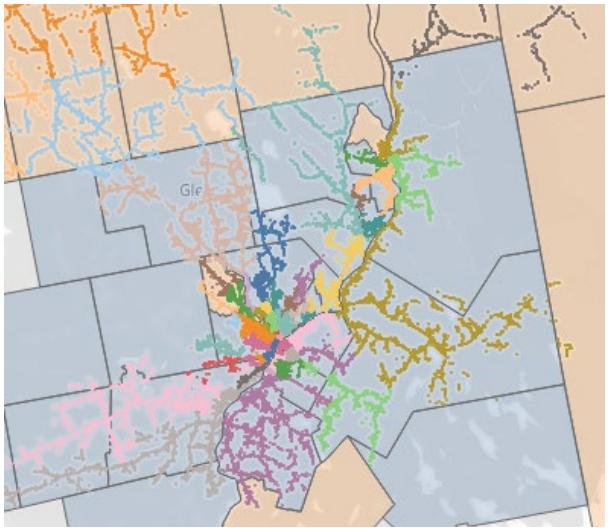
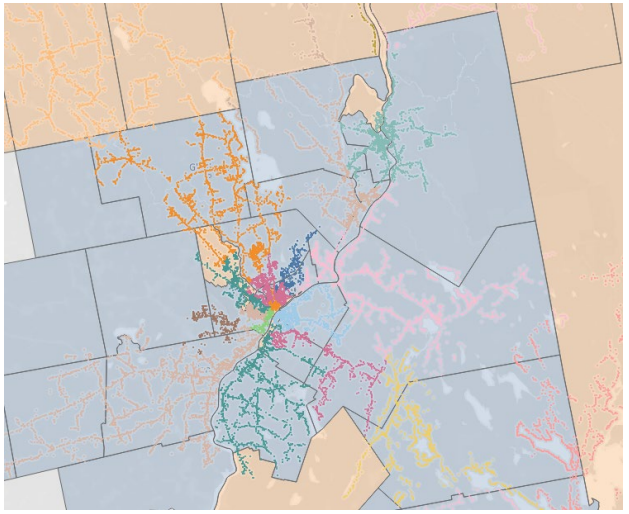
EEEJ Disadvantaged Geographic Analysis

- Customers were overlayed with census tracts to determine disadvantaged classification of each customer
- Customers were also mapped to feeders and substations
- Substations aggregate multiple feeders
- Anonymized data was used to protect customer data

By Feeder



By Substation



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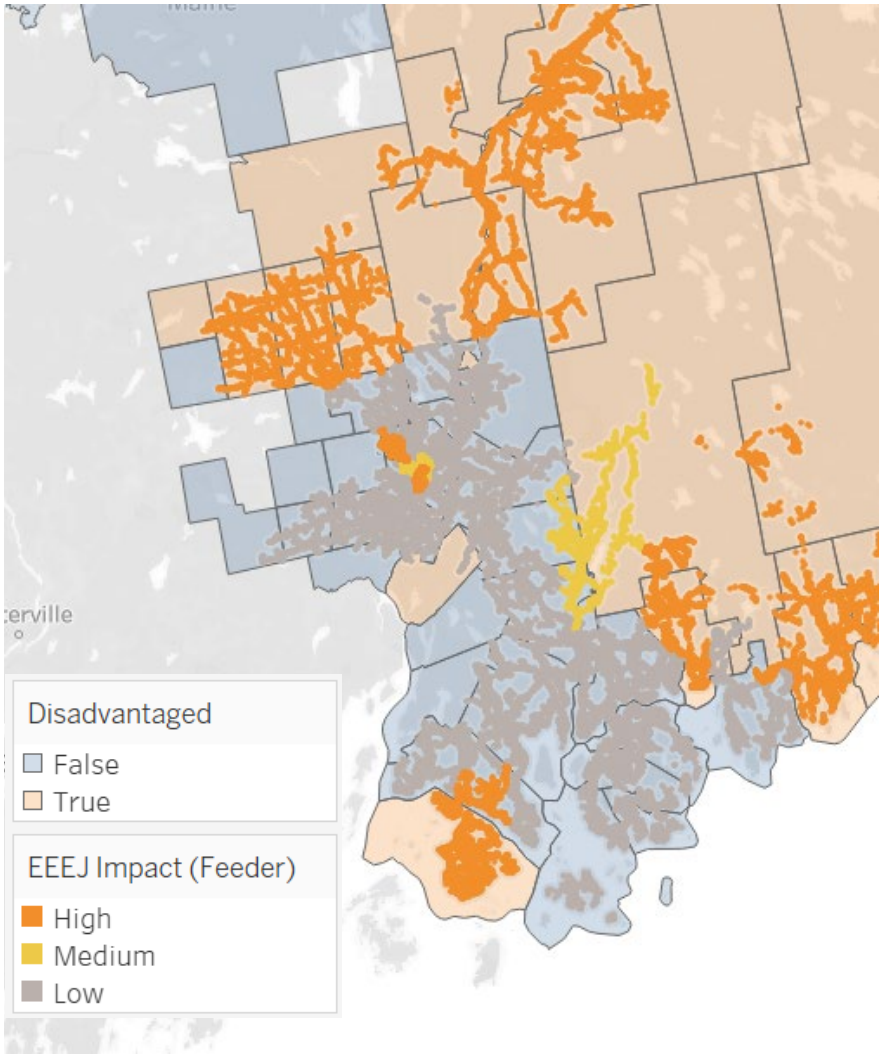
EEEJ Disadvantaged Definition

EEEJ Equity Impact determined for each Feeder/Substation based on the % of customers served that are disadvantaged

% Disadvantaged	EEEJ Equity Impact
>= 2/3 (66.7%)	High
>= 1/3 (33.3%)	Medium
< 1/3 (33.3%)	Low



Feeder By EEEJ Status

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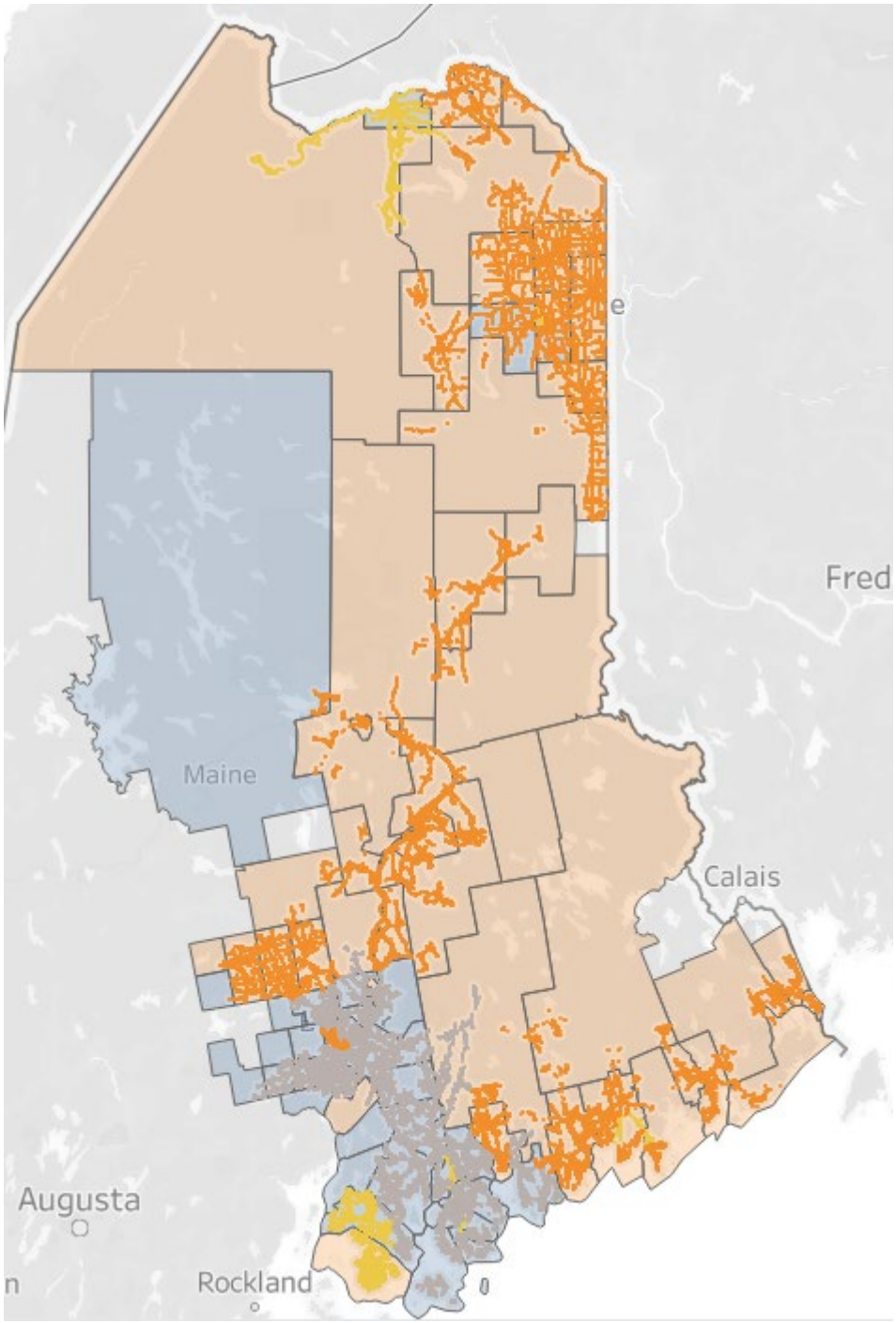
EEEJ Disadvantaged Definition

By Substation EEEJ Status

Same analysis as for feeders, but feeders have been consolidated by substation



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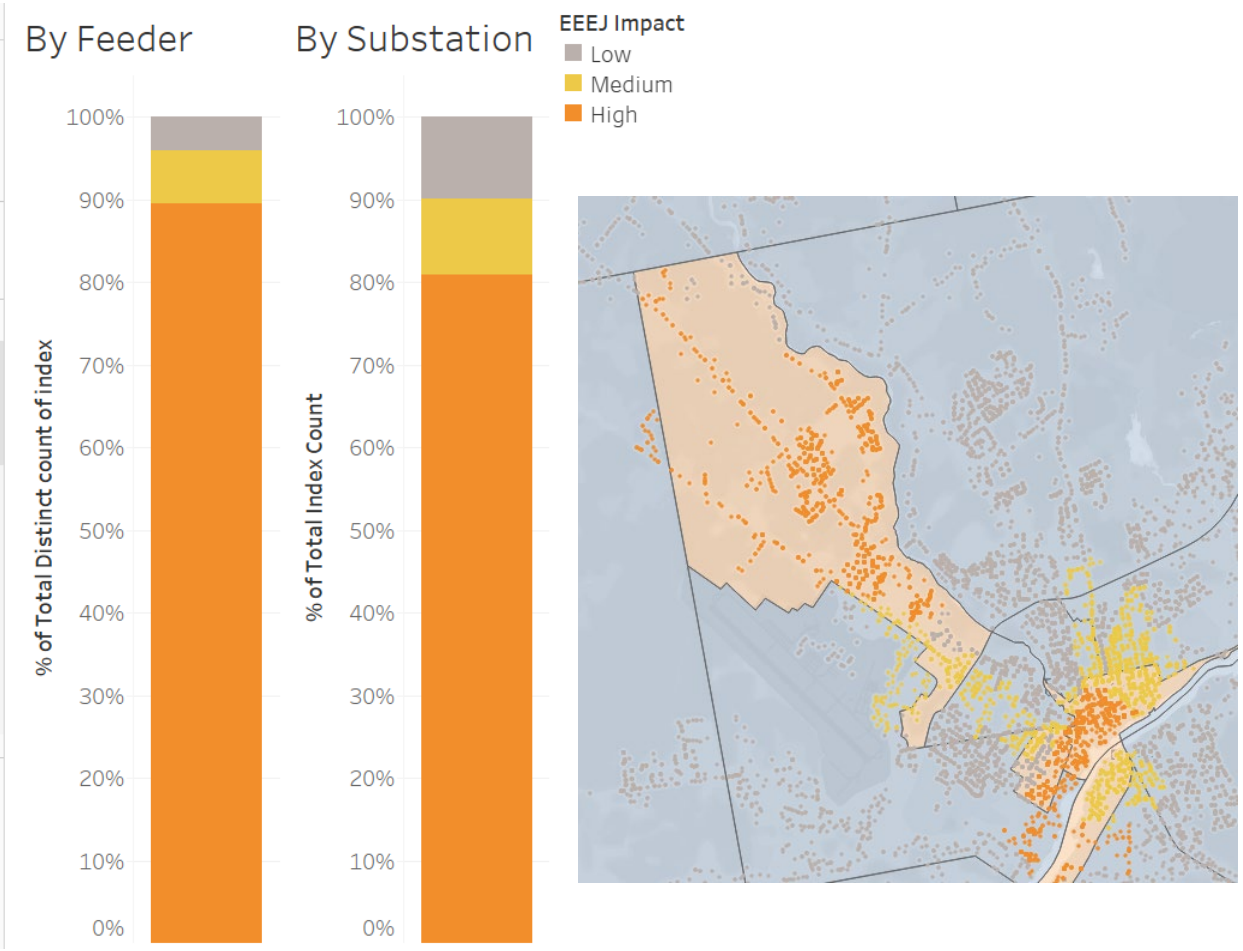
EEEJ Disadvantaged Definition

Approach results in minimal mismatch between disadvantaged customers and EEEJ infrastructure

- Over 90% of disadvantaged customers are on infrastructure with an EEEJ Impact of High or Medium



Emissions Evaluation Metrics

1. Identify solutions with emissions benefits
2. Since climate change effects are global and disproportionally affect disadvantaged communities, assessments will not be locationally specific
3. Solutions will be evaluated on their ability to directly or indirectly reduce emissions
4. Each solution type will be assigned a standard emissions impact

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Examples of Emissions Impact

Emissions Impact	Types of Impact	Examples

Direct Reduction	• Reduce system losses/inefficiencies
	• Decrease peak load
	• Decrease maintenance requirements
		• Loss reduction
		  ○ Reconductoring
		  ○ Efficiency upgrades
		• Solar & Battery Microgrids
		  ○ Resiliency back up
		  ○ Islanding
		• Reduce Load/Peak Shifting
		  ○ Demand Response
		  ○ Energy Efficiency Programs

Indirect Reduction	• Increase grid capacity for renewables and beneficial electrification	• Grid enhancing technologies • Curtail export generation
Increase	• Directly increase emissions	• New diesel backup generation

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Local Environmental Impact Evaluation Process

- Does not include emissions which are evaluated separately
- Environmental impact will evaluate whether a project will increase or decrease the development of new land.
- Projects requiring new land development can negatively impact the environment in the following ways:
  - Disturb local wetlands
  - Create challenges to wildlife and habitat loss
  - Displace farmland important to the local economy
  - Effect water runoff and flooding through the increase of impervious surfaces.
- Water-use could also be considered, where appropriate
- Each solution type will be assigned a standard environmental impact rating

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Environmental Impact Examples

Environmental Impact	Types of Impact	Examples
Low	• No new land-use • Reduction of land-use	• Demand Response • Energy Efficiency • Grid Enhancing Technologies (GETs) • Reduce Load/Peak Shifting • Curtail Export Generation • Equipment Replacements
Medium	• Moderate increase in land-use	• Upgraded generation • Upgraded substation • Upgraded feeder / transmission lines in existing corridor • Distributed energy storage • Distributed microgrids
High	• Increased land-use	• New generation • Grid-scale energy storage • New substation • New feeder / transmission lines in new corridor

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Other Equity Metrics

The following equity-related metrics were considered and are covered elsewhere in the scorecard

EEEJ Metric	Scorecard Category	Scorecard Item(s)
Energy Reliability	Technical Performance	Reliability and Resiliency Impact
Affordability / Energy Burden	Costs	Capital; Operations & Maintenance; and Avoided Costs
Support for Electrification	Policy Alignment	Electrification readiness
Simplified Interconnection of DERs	Policy Alignment	DER and renewables integration

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Simplified EEEJ Scoring Example

EEEJ Metric	New Diesel Generator for Reliability Serving Non Disadvantaged Customers	Line Upgrade Serving 50% Disadvantaged Customers	Replace Diesel Generator with Battery Microgrid Serving 100% Disadvantaged Customers
Equity	Low	Medium	High
Emissions	Increase	Indirect Reduction	Direct Reduction
Environmental Impact	High	Medium	Low
Planning Priority	Low	Medium	High

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Score Card Metrics & Potential Solutions

Evaluation Category Definitions

Parent Category	Evaluation Category	Definition
Costs	Capital costs	What is the cost to implement the proposed solution?
	Operations & maintenance costs	How much O&M does the proposed solution require?
	Avoided costs	What costs can be avoided down the line by implementing the proposed solution?

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Evaluation Category Definitions

Parent Category	Evaluation Category	Definition
Technical Performance	Efficacy	How well does the proposed solution allow system operation within thermal and voltage limits ?
	Execution and schedule risk	What execution and schedule risks can be expected from the proposed solution?
	Existing infrastructure optimization	How well are we using existing equipment?
	Reliability & resiliency impact	Does the proposed solution improve system reliability (SAIDI/SAIFI) and resiliency ?
	Flexible management of customers' load and generation	Does the proposed solution use control of customer power input/output?

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Evaluation Category Definitions

Parent Category	Evaluation Category	Definition
Policy Alignment	Peak load reduction	Does the proposed solution reduce peak load?
	Electrification readiness	Does the proposed solution allow for future increase in load?
	DER and renewables integration	Does the proposed solution allow for DERs & renewable integration?
	Advances state energy and climate goals	Does the solution help advance state goals? • 80% electricity from renewables by 2030 • 100% electricity from renewables by 2050 • 750 MW installed distribution generation • 300 MW installed storage by Dec 31, 2025 & at least 400 MW by Dec 31, 2030 • 41,000 light duty EV by 2025 • 219,000 light duty EV by 2030

Approach to Non-Wires Alternatives (NWA)

- In addition to traditional infrastructure solutions, the IGP will assess NWAs as potential solutions
- IGP assessments will provide helpful information about the cost and benefits of various solutions including potential EEEJ impacts
- As Versant pursues specific grid upgrades (e.g. via rate filing or CPCN application), projects will still undergo NWA review when meeting existing statutory thresholds (e.g., investment >= $500,000).

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Examples of Potential Solutions

Grid Need: Substation transformer overloaded at peak load	
Potential Solutions	○ Transfer load to surrounding circuits ○ Upgrade transformer to increase capacity ○ Demand Response for load reduction ○ BESS for load reduction ○ Managed charging for load shifting
Grid Need: Line regulator overloaded at peak load	
Potential Solutions	○ Transfer load to surrounding circuits ○ Rephase/balance loads ○ Upgrade line regulator to increase capacity ○ Demand Response for load reduction ○ BESS for load reduction ○ Managed charging for load shifting

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Feedback Requested: What other proposed solutions could be evaluated?

Examples of Potential Solutions

Grid Need: Substation transformer overloaded at min. load (DER).	
Potential Solutions	○ Upgrade transformer to increase capacity ○ Add DVAR/inductors ○ Flexible interconnection ○ Advanced IBR control (Volt/VAR, Volt/Watt, etc.)
Grid Need: Overvoltage on line at min. load (DER).	
Potential Solutions	○ Rephase/balance loads ○ Adjust line regulator settings ○ Add DVAR/inductors ○ Flexible interconnection ○ Advanced IBR control (Volt/VAR, Volt/Watt, etc.)

Feedback Requested: What other proposed solutions could be evaluated?

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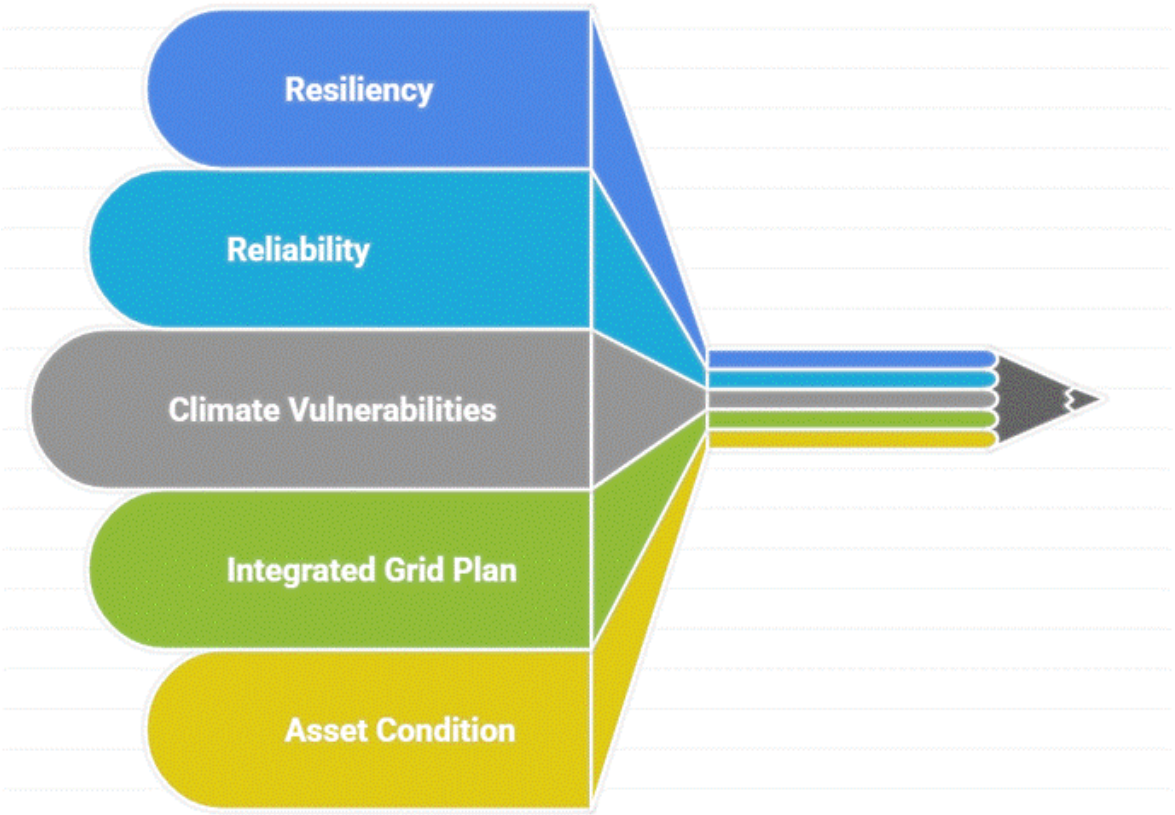
Balancing Grid Needs and Planning

The IGP will provide Versant, as well as regulators, policymakers and stakeholders, with an important set of tools to identify future grid needs and a comprehensive framework to evaluate potential solutions to those needs.

IGP-driven solutions will be one key part of Versant's overall planning and investment strategy.



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Next Steps

1. Provide comments on EEEJ approach by 9/19/25 to gridandclimate@versantpower.com
2. Upcoming stakeholder meetings: Q3 2025 (TBD)

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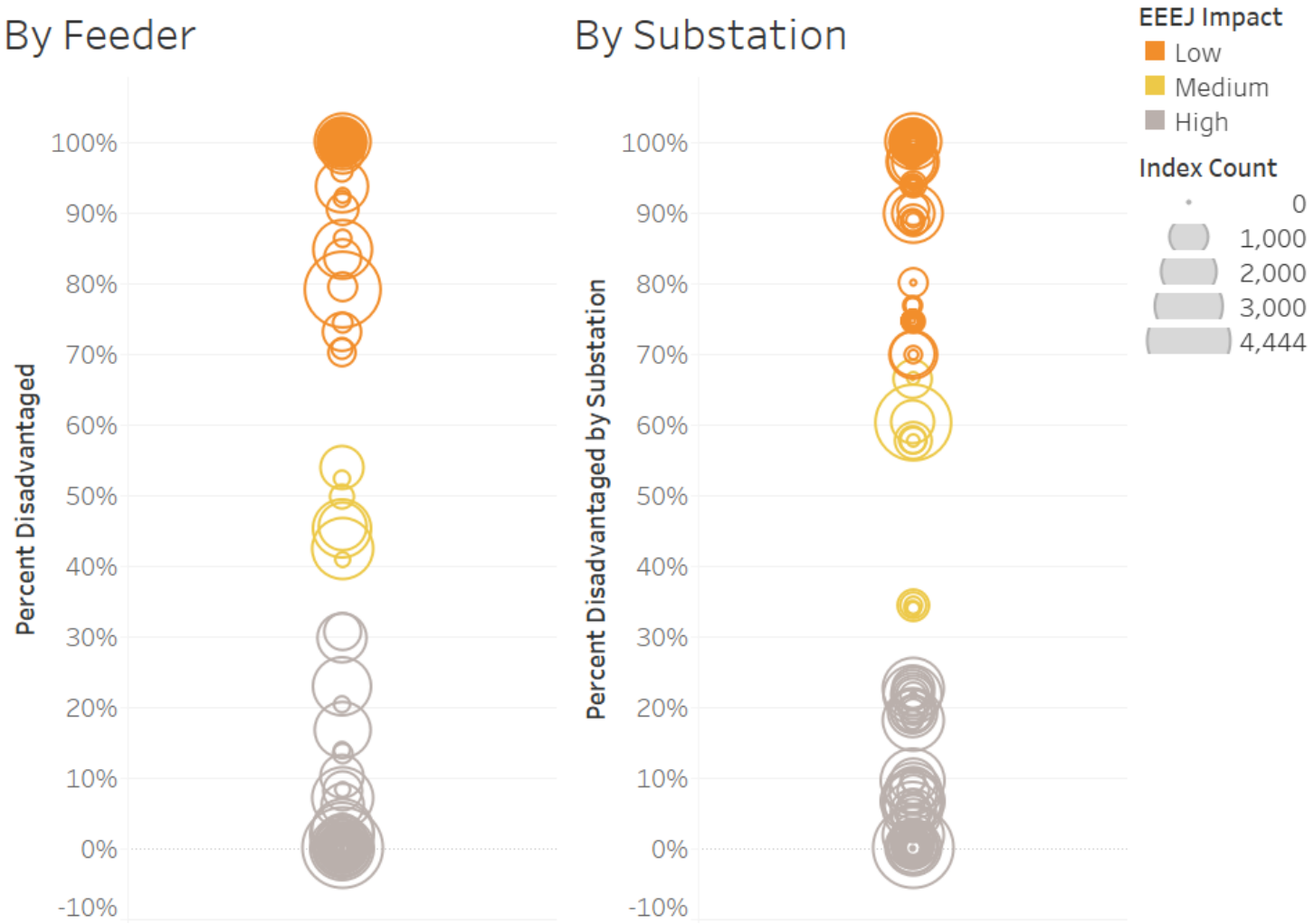
Questions

EEEJ Disadvantaged Definition



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