

VGI Working Group

OEM Comments on the Work Plan

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Joint OEM Comments on Work Plan

The OEMs are grateful for the opportunity to participate in this Working Group, and appreciate the efforts of all the California agencies to bring together the stakeholders so that we can collectively push to further advance the scaled deployment of VGI as quickly as possible.

Given the complexity of VGI, accomplishing the three Deliverables that were laid out in the Work Plan requires substantial efforts to define terminology and identify specific Use Cases

Emphasis on defining specific Use Cases is necessary to avoid duplicate work and to ensure the Working Group's recommendations can be implemented quickly

Recommended Deliverable Structure

Deliverable 1:
Define VGI Use Cases

Define Use Cases based on specified criteria

Deliverable 2:
Grid Value of Use Cases

Define value for each Use Case

Deliverable 3
Communication
Pathways

Define Communication Pathways and determine which pathways/protocols provide the capability and functionality to meet the Use Case requirements

Deliverable 4
Implementation Cost

Define implementation costs for all stakeholders for each Use Case.

Elements of Use Case Criteria

The following are the starting elements/characteristics that should be used to define each use case:

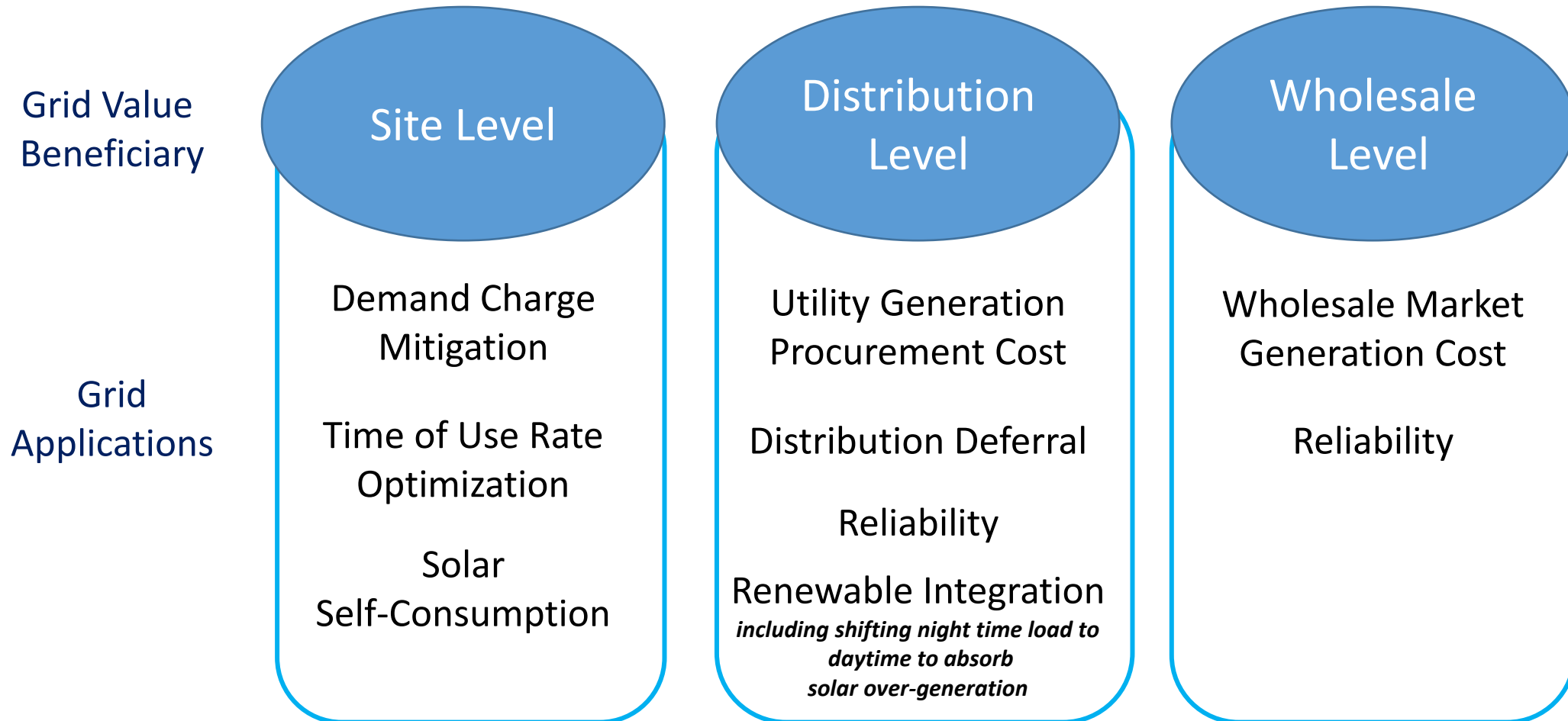
1. Power Flow (V1G or V2G)
 2. Grid Value Beneficiary, Grid Value Category, and Grid Value activity
 3. Location Category (Home or Workplace or Other)
 4. Degree of Charging Flexibility in Business Model
- Once the ecosystem is defined it is important to determine the information flows necessary to execute the Use Case requirements.
 - Use Cases must include not only the grid function, but the charging environment aspects, as these have a critical impact on communication requirements.

VGI Grid Value Categories

Value Category	Description	Value to Grid	Beneficiary	Grid Application
Energy Generation Cost	Moving Charging away from high energy time periods to low energy time periods	Lower wholesale market energy costs	Distribution Level Wholesale Level	Utility Generation Procurement Cost Wholesale Market Generation Cost
Bill Cost	VGI creates bill savings by avoiding high tariff times or demand charge times	Lower On Peak Demand	Site Level	Demand Charge Mitigation Time of Use Rate Optimization Solar Self-Consumption
Distribution Deferral	Avoids future distribution costs by extending the effective life of existing infrastructure	Avoid expensive upgrades to distribution grid	Distribution Level	Distribution Deferral
Reliability	Providing delivery “options” to the utility that can be called during times of high energy prices or reliability issues. Delivery is guaranteed, unlike wholesale market prices	Improve Reliability	Site Level Distribution Level Wholesale Level	Reliability (Volt Var/Frequency Reg)
Renewable Integration	Aligning charging with renewable energy to facilitate more renewables and cleaner charging	Lower CO2 generation, avoid over-generation scenarios	Site Level Distribution Level Wholesale Level	Renewable Integration <i>including shifting nighttime load to daytime to absorb solar over-generation</i>

There are temporal and spatial influences for each of the Value Categories

Grid Value Beneficiary and Application



Summary

The OEMs feel strongly for the Working Group to be most productive, the Deliverables need to be realigned to level-set all stakeholders on the basic fundamentals:

1. **“WHAT?”**: first order of business must be a clear definition of the Use Cases which are most relevant to utility and customer value from the VGI ecosystem.
2. **“WHY?”**: Establish the Grid Value for each Use Case. All progress in deploying VGI will flow from these value elements for the key stakeholders.
3. **“HOW?”**: Associate the multiple communication pathways/protocols to each Use Case, and determine which communications pathways/protocols are best suited to unlock the value of the Use Case from a functional and technical capability standpoint
4. **“HOW MUCH?”**: Determine estimates for communication pathway costs, which will help to determine which ones are most cost-effective to commercially deploy for VGI at scale

The OEMs believe that the ELAAD report, while a good reference document for the Working Group, should not be used as the primary guide, as it does not accurately reflect some important realities of the VGI ecosystem in California and the US at this time.