Scoring Process Design and Plan for Completing

- How to divide into groups of use cases to be scored? By sector? By application? By type?
- Scoring done in small teams for a group of use cases? Team can select one or more sectors, or applications, or type, does not have to score every use case in that category.
- Scoring as a giant individual survey of entire WG?
- Parties encouraged to focus on the sectors/sub-sets most able/most interested in contributing to
- Multiple results per use case are allowed, will be reviewed for average/max/min
- How to ensure consistency for a given metric (column) across all use cases? Have some people or teams focus on a given metric (column) across all use cases? ("Column people")

Scoring Process Design and Plan for Completing

- For benefit assessment consistency:
  - Focus on Sector, Application, and Type dimensions
  - Do one benefit metric for all use-cases, then do the other metric for all use-cases; this helps comparing and benchmarking among use-cases
  - When done with scoring on both metrics: review all scores and see if considering Approach or Resource affect your results
  - Throughout: Document assumptions!
  - Develop consensus assumptions, such as Indirect use-cases are likely to have higher {EV Population} than Direct, and Direct use-cases are likely to have higher {$/EV} than Indirect

Proposal for the Scoring Process

a. **Gridworks to divide the use-cases into sub-sets.**
    i. Based on Sector or Application:
        i. 11 sub-sets for 11 Sectors (Rideshare Residential combined, and Rideshare Commercial combined)
        ii. 8 Applications: Customer Bill Mgmt, Customer Other, System RA, System Renewable Integration, System GHG Reduction, System Grid Deferral & Backup Resiliency, System Energy & Voltage, System Ancillary Services

b. **Every party can sign-up to any of the sub-sets.**
    i. Any party can sign up for more than 1 sub-set
    ii. Any party can score any number of use-cases in each sub-set, a party does not have to submit a score for every single use-case in a sub-set

c. **Parties submit use-cases to Gridworks only; submission would not be automatically visible to other parties**
    i. Advantage: Prevent potential mental biases and "gaming the system" (party X might score a use-case too high if it saw that party Y scored it too low…); the "blind" submission would encourage parties to be objective, honest, and more open to share knowledge
    ii. Parties can voluntarily choose to collaborate and make joint submissions

d. **Gridworks would aggregate the results, and then present the results in two forms:**
    i. For each use-case: Average score of Cost, Benefit, and Implementability
    ii. For each use-case: Min-Max gap for each score

e. **Gridworks would facilitate discussions between the Parties targeting the use-cases with the widest Min-Max gap in score, in order to try to narrow down that gap.**
    i. All parties can engage in these discussions, not only the parties that originally submitted the min/max scores (who may remain anonymous)

GRIDWORKS

Scoring—CalETC Comment

- There can be multiple versions of the a single use case where each variation scores differently.
- For example, an optional TOU rate today results in customer bill savings compared to a default TOU rate at a home, small apartment or condo, or an commercial optional TOU rate today in a large MUD does the same compared to a more normal or default TOU rate, then this can be scored for costs, benefits and implementability.
- Another example is that customers are providing savings (deferring upgrades) by charging at 1.4 kW, 3.3 kW, 5.0 kW and 6.6 kW at homes and condos (UC 13) compared to a baseline kW. For 6.6 kW at least one utility is paying for the home charging station, and another is thinking about doing it for 5.0 kW For the others, customers are doing lower level charging based on how they have been educated by autos, utilities and others. Each of these scores differently.

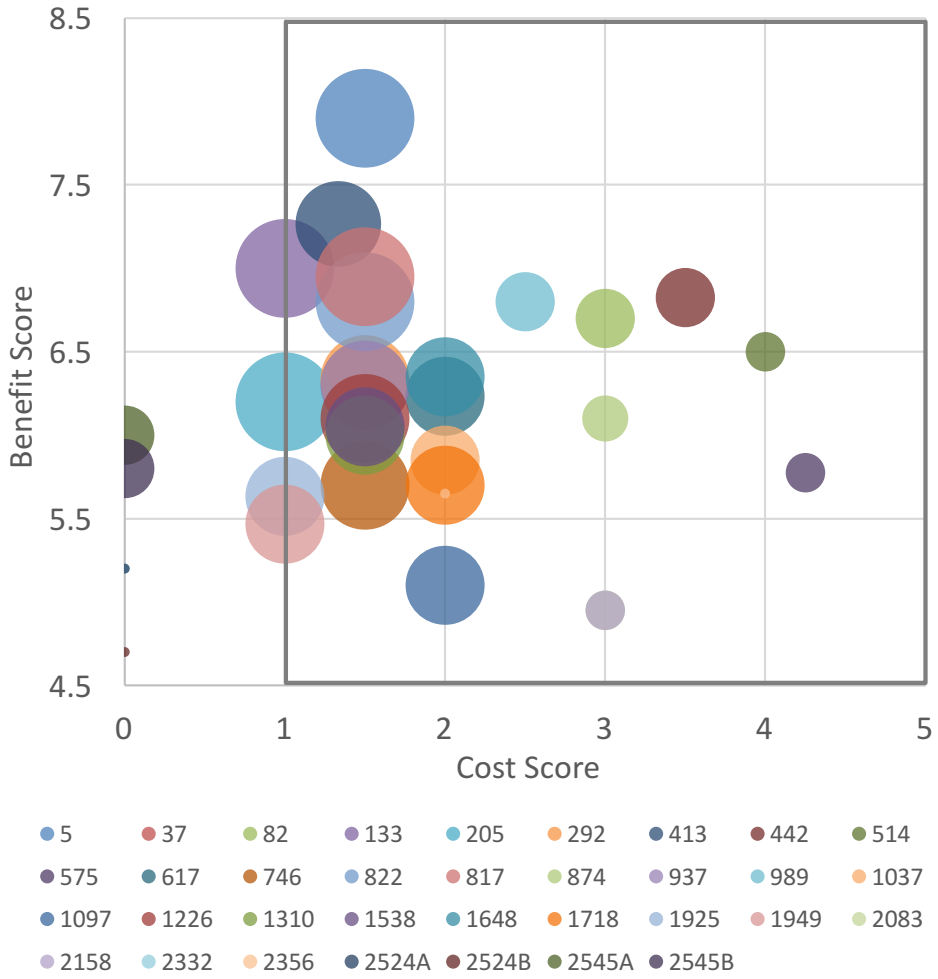
GRIDWORKS

Exercise on Ranking and Prioritization

Use-case ID	Cost Score	Benefit Score	Implementability Score	Sector	Application	Type	Approach	Resource Alignment
5	1.5	5.0	5.0	Residential - Single Family Home	Customer - Bill Management	V1G	Direct	EV-EVSE Fragmented, Aligned
37	2.0	2.2	4.0	Residential - Single Family Home	Customer - Renewable Self-C	V1G	Indirect	EV-EVSE Unified, Aligned
82	3.0	2.9	3.0	Residential - Single Family Home	System - Voltage Support	V2G	Direct	EV-EVSE Unified, Aligned
133	1.0	3.4	5.0	Residential - Single Family Home	System - RA, System Capacity	V1G	Indirect	EV-EVSE Unified, Aligned
205	1.0	2.1	5.0	Residential - Single Family Home - Ride	Customer - Bill Management	V1G	Indirect	EV-EVSE Unified, Aligned
292	1.5	2.0	4.5	Residential - Single Family Home - Ride	System - Day-Ahead Energy	V1G	Direct	EV-EVSE Unified, Aligned
413	1.3	3.9	4.3	Residential - Multi-Unit Dwelling	Customer - Bill Management	V1G	Direct	EV-EVSE Fragmented, Aligned
442	3.5	3.1	3.0	Residential - Multi-Unit Dwelling	Customer - Backup, Resilienc	V2G	Direct	EV-EVSE Unified, Aligned
514	4.0	2.6	2.0	Residential - Multi-Unit Dwelling	System - Real-Time Energy	V2G	Direct	EV-EVSE Unified, Aligned
575	4.3	1.3	2.0	Residential - Multi-Unit Dwelling	System - RA, Local Capacity	V2G	Direct	EV-EVSE Fragmented, Aligned
617	2.0	2.1	4.0	Residential - Multi-Unit Dwelling - Ride	Customer - Bill Management	V1G	Direct	EV-EVSE Fragmented, Aligned
746	1.5	1.2	4.5	Residential - Multi-Unit Dwelling - Ride	System - RA, System Capacity	V1G	Indirect	EV-EVSE Fragmented, Aligned
817	1.5	3.4	5.0	Commercial - Workplace	Customer - Bill Management	V1G	Indirect	EV-EVSE Unified, Aligned
822	1.0	3.1	5.0	Commercial - Workplace	Customer - Bill Management	V1G	Direct	EV-EVSE Fragmented, Misaligned
874	2.5	1.9	2.5	Commercial - Workplace	System - Grid Upgrade Defer	V2G	Direct	EV-EVSE Unified, Aligned
937	1.0	2.2	5.0	Commercial - Workplace	System - GHG Reduction	V1G	Indirect	EV-EVSE Unified, Aligned
989	1.0	3.1	5.0	Commercial - Workplace	System - Frequency Regulati	V1G	Direct	EV-EVSE Fragmented, Aligned
1037	2.0	1.5	3.5	Commercial - Public, Destination	Customer - Upgrade Deferra	V1G	Direct	EV-EVSE Fragmented, Aligned
1097	2.0	0.2	4.0	Commercial - Public, Destination	System - Voltage Support	V1G	Direct	EV-EVSE Fragmented, Aligned
1226	1.5	1.9	4.5	Commercial - Public, Destination - Ride	Customer - Bill Management	V1G	Indirect	EV-EVSE Fragmented, Aligned
1310	1.5	1.7	4.0	Commercial - Public, Destination - Ride	System - Day-Ahead Energy	V1G	Indirect	EV-EVSE Fragmented, Aligned
1538	1.5	1.8	4.0	Commercial - Public, Commute	System - Renewable Integrat	V1G	Indirect	EV-EVSE Fragmented, Aligned
1648	2.0	2.3	4.0	Commercial - Public, Commute - Rideshi	Customer - Upgrade Deferra	V1G	Direct	EV-EVSE Unified, Aligned
1718	2.0	1.2	4.0	Commercial - Public, Commute - Rideshi	System - Day-Ahead Energy	V1G	Indirect	EV-EVSE Fragmented, Aligned

Results from Scoring Pilot: Illustration to Facilitate Assessment

Averaging all submitted scores

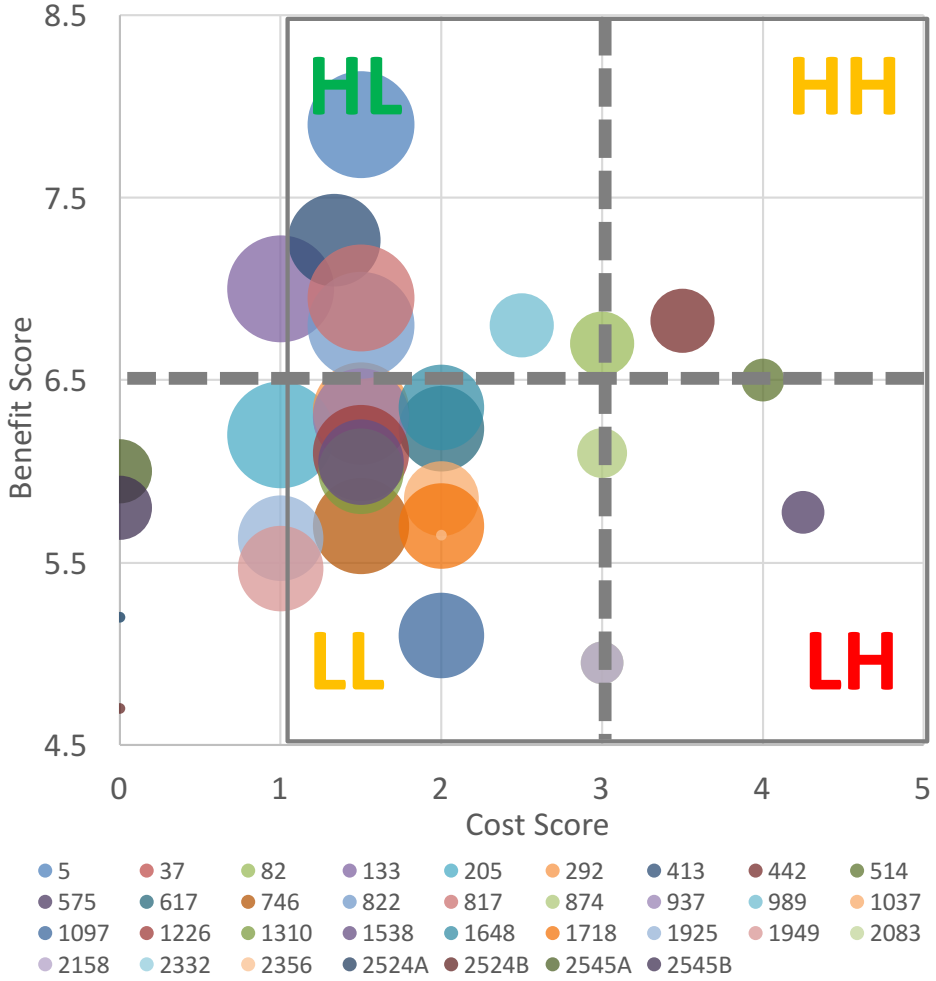


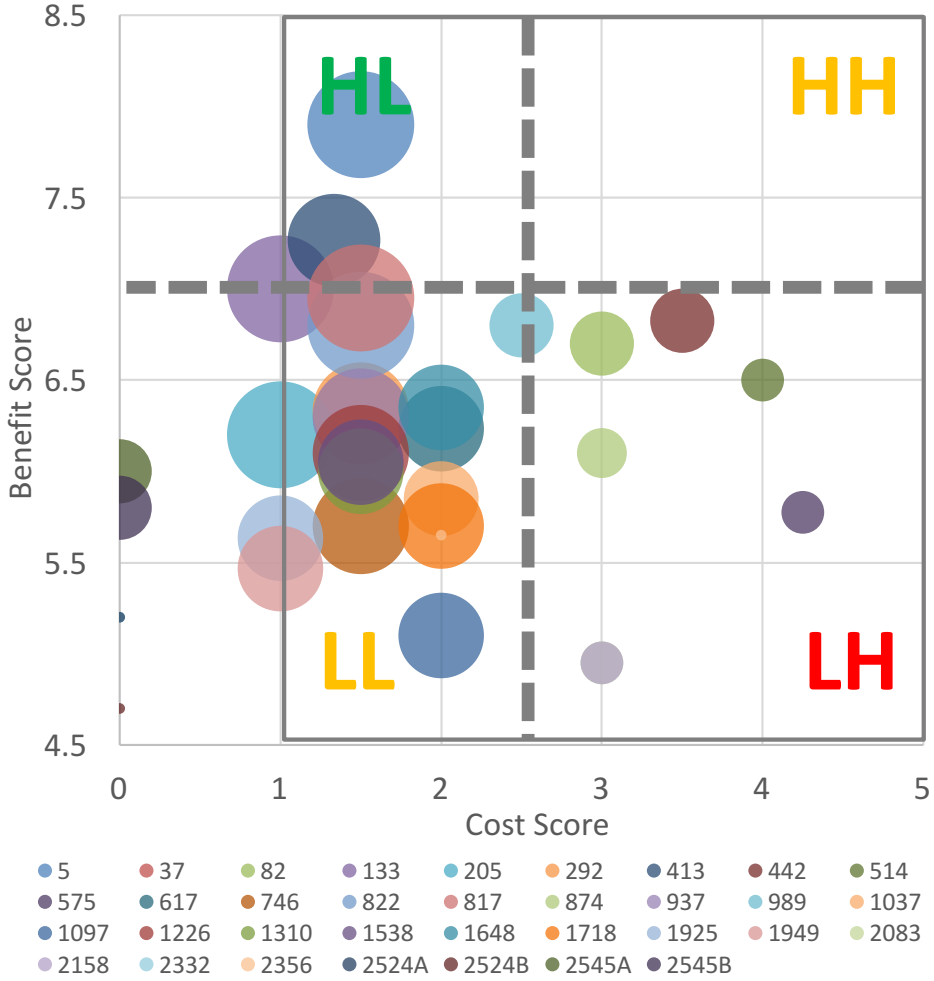
Min-Max gap in submitted scores

Use-case	Cost Score	Benefit Score	Implementability Score
5	1	0	0
37	1	0	1
82	0	0	0
133	0	0	0
205	0	0	0
292	1	1.1	1
413	1	0.5	1
442	1	2.8	2
514	2	1.6	2
575	1	0.7	0
617	2	0.7	2
746	1	1.2	1
817	1	0.3	0
822	1	0	0
874	2	1	1
937	1	0	1
989	3	0	4
1037	2	1.5	3
1097	2	0	2
1226	1	2	1
1310	1	1.8	2
1538	1	0.5	2
1648	2	1.1	2
1718	2	1.2	2
1925	0	0.2	0
1949	0	0.5	0
2083	0	0.5	0
2158	0	0.5	0
2332	0	0	0
2356	0	0.3	0
2524A	0	0	0
2524B	0	0	0
2545A	0	0	0
2545B	0	0	0

Results from Scoring Pilot: Translate from Scoring to Ranking?

Where do we draw the "boundaries"?





GRIDWORKS

Plan for Ranking and Prioritization

Possible Consensus Assumptions (Rules) – PG&E/SCE/Enel X

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	V1G - Indirect	V1G - Direct	V2G - Indirect	V2G - Direct
FAILS SCREEN IF….				
Resource alignment is…	Misaligned		Misaligned	
Or Sector is….	SFH - Fragmented	SFH - Fragmented	SFH - Fragmented	SFH - Fragmented
	MUD - Unified	MUD - Unified	MUD - Unified	MUD - Unified
	Public-Commute - Unified	Public-Commute - Unified	Public-Commute - Unified	Public-Commute - Unified
				Public-Commute - all grid services
				Fleet -Transit-Bus - all grid services
				Rideshare - all grid services
Or Application is….	RA-flex	Frequency regulation	RA-flex	RA-flex
	RA-local	Spinning	RA-local	RA-local
	Real-time	Non-Spinning	Real-time	Day-Ahead Energy
	Voltage support	Backup	Voltage support	Real-time
	Frequency regulation		Frequency regulation	Voltage support
	Spinning		Spinning	Frequency regulation
	Non-Spinning		Non-Spinning	Spinning
	Backup			Non-Spinning

Screening Adjustments Based on 11/14 Workshop Discussion

- Pile C: resolved in favor of agreed rules, moved to Piles A and B
- Team 8: some of our results may now pass given rules agreed (Gridworks note: likely handled by above bullet, Gridworks will verify)
- Team 9: maybe a few extra pass results related to fleet ownership? But failed for other reasons.
- Fermata: six V2G use cases, for consistency, currently in Pile B, should be moved to Pile A or Pile C (as pass): #46, 419, 527, 826, 827, 935
- CalETC: #13 being done today, should be Pile A or Pile C (as pass)

Work Plan – Revised Schedule

GRIDWORKS

Stage	Content	Sub-Group Working Schedule	Workshop	Follow-up Working Group Call(s)	Draft Report for Review
1	Kick-off	---	8/19	8/26	---
2	Vet and finalize PG&E VGI Valuation Methodology	8/20-9/20 (3 weeks)	9/26	10/3	11/1
3a	PUC Question 1	9/26-11/12 (5 weeks)	11/14-11/15	11/21	11/26
3b	PUC Question 1 (continued)	11/15-1/9 (5 weeks)	1/16-1/17	1/23	1/28
4	Interim Report	---	---		12/10
5	PUC Question 2 (compare to other DERS)	1/23-2/20 (4 weeks)	2/27	3/5	3/10
6	PUC Question 3 (policy recommendations)	3/16-4/23 (6 weeks)	4/30-5/1	5/7 5/14	5/19
7	Final Report	---	6/4	6/11 6/18	5/19

GRIDWORKS

Wrap Up

General

- Recap action items
- Confirm revised work plan
- Other items?
- Next Workshop: 1/16-1/17 in San Francisco

Subgroup “B”

- Sub-group work schedule: 11/17 to 1/9
- First sub-group planning call: (Date and time)
- Sub-group progress calls: (Dates and time)