EVs2Scale 2030™

NASUCA Presentation: GridFAST and EV Service Connection Roadmap

June 25, 2025

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Agenda

1. EVs2Scale general program updates
2. GridFAST portal
3. EV Service Connection Roadmap for small fleets and MFH
4. NASUCA member takeaways

The Electrical Grid Challenge

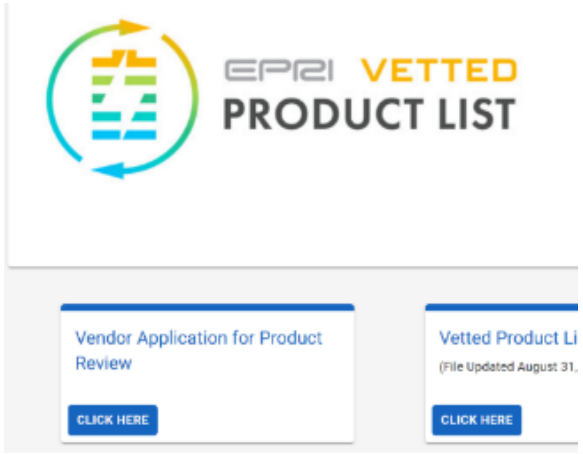
- There are **3,200 utilities in North America (+145 in Canada)** – each with different processes, tools, regulators
- **Planning and integrating new electrical loads** on the grid is typically a **multi-year process**
- **Uncertainty** in where/when loads are expected **prevents utilities (and utility regulators) from being able to plan**
- Utilities (and regulators) **must have confidence in when and where loads** are coming in order to accelerate interconnection times

Early engagement with utilities is critical

4 Major EVs2Scale Deliverables Now Released

EVs2Scale 2030

1



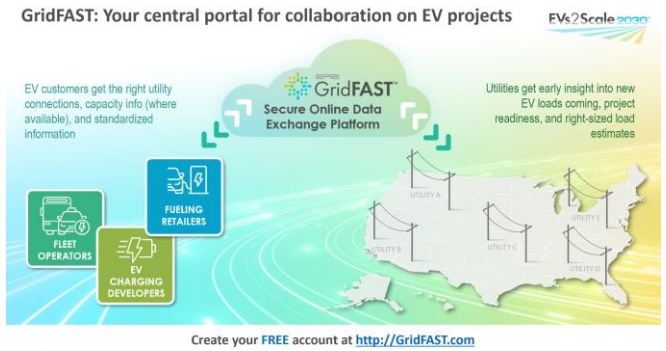
- 105 vendors and 750 products "listed"
- Vendors now have access to over $1.8B in utility and state grant programs
- https://www.epri.com/vpl

2

- Visualization of planned/expected EV loads
- Cited in over 10 state proceedings to date
- https://eroadmap.epri.com/

3

GridFAST



- Industry portal for early project planning (and ultimately service requests)
- http://GridFAST.com

4

50-State GridREADY

- Promotes a common data-based understanding of need for proactive grid planning
- Available to all NGOs and state leaders
- No state left behind
- EPRI EVs2Scale2030 GridREADY | Powered by Box

EPRI

ENERGIZATION JOURNEY

Typical Service Connection Process

0. INFORMATIONAL PHASE: VISION, PLAN, FUNDING

1. Site Selection and Assessment

2. Submit service request

3. Review application

4. Develop cost estimates & design site plan

5. Submit materials for permitting and/or zoning review

6. Grant Permits

7. Obtain easement

8. Payment of upgrade costs

9. Site construction

10. Site inspection

SITE ENERGIZED

11. Post-Energization

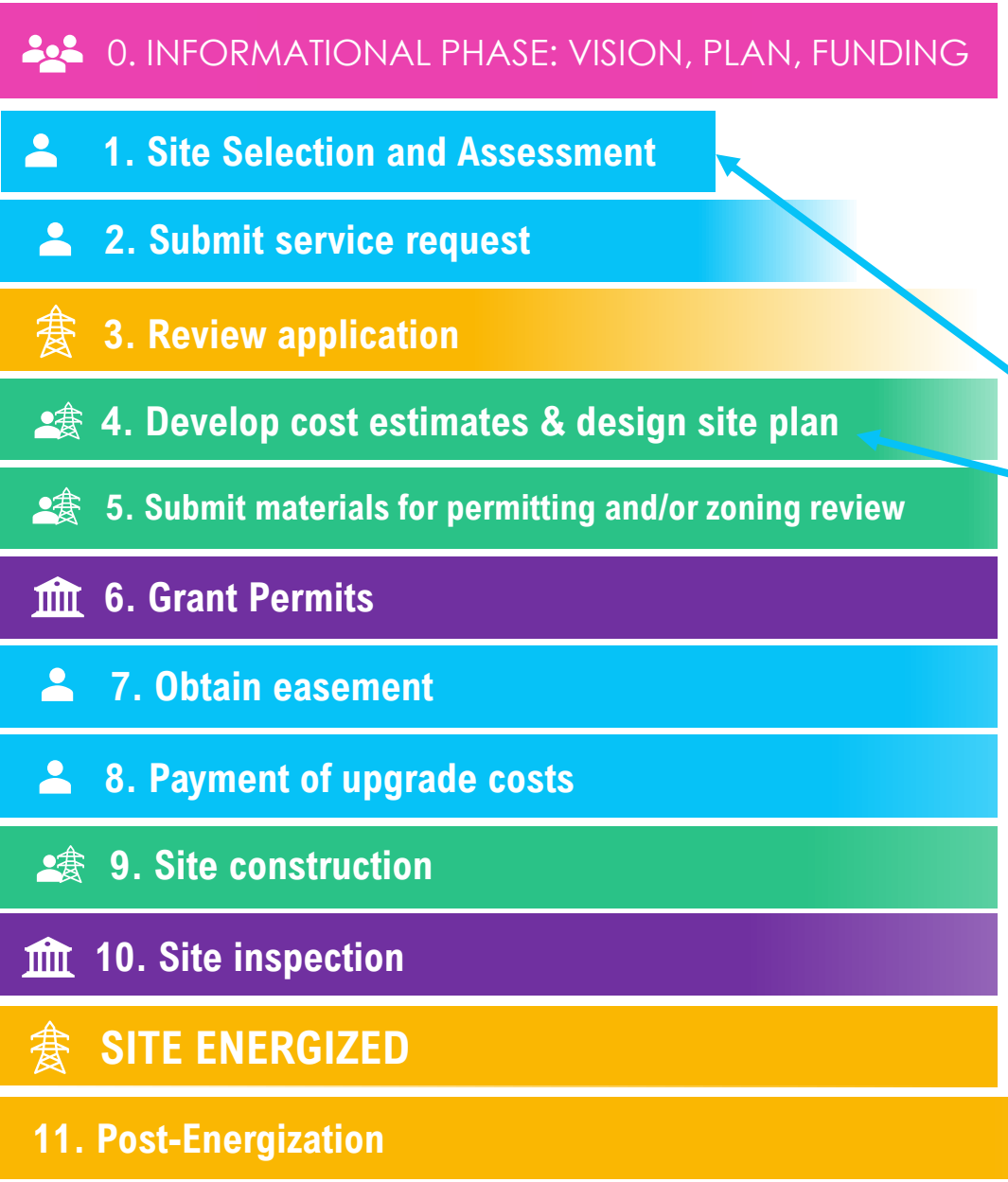
PLANNING PHASE

IMPLEMENTATION PHASE

ENERGIZATION

- Local Gov
- Utility + Customer
- Utility
- Customer
- Utility or 3rd party

EPRI has 3 major efforts to streamline various steps of this journey:



1

GridFAST:
up to the service request, for projects 1+ years out

3 **GridFAST Express:**
DCFC typology catalogue, impacts Site Selection and Assessment (Step 1), Develop Cost Estimates and Design Site Plan (Step 4)

2 **Grid Connection Roadmap:**
all steps, geared towards small customers though solutions benefit all

GridFAST

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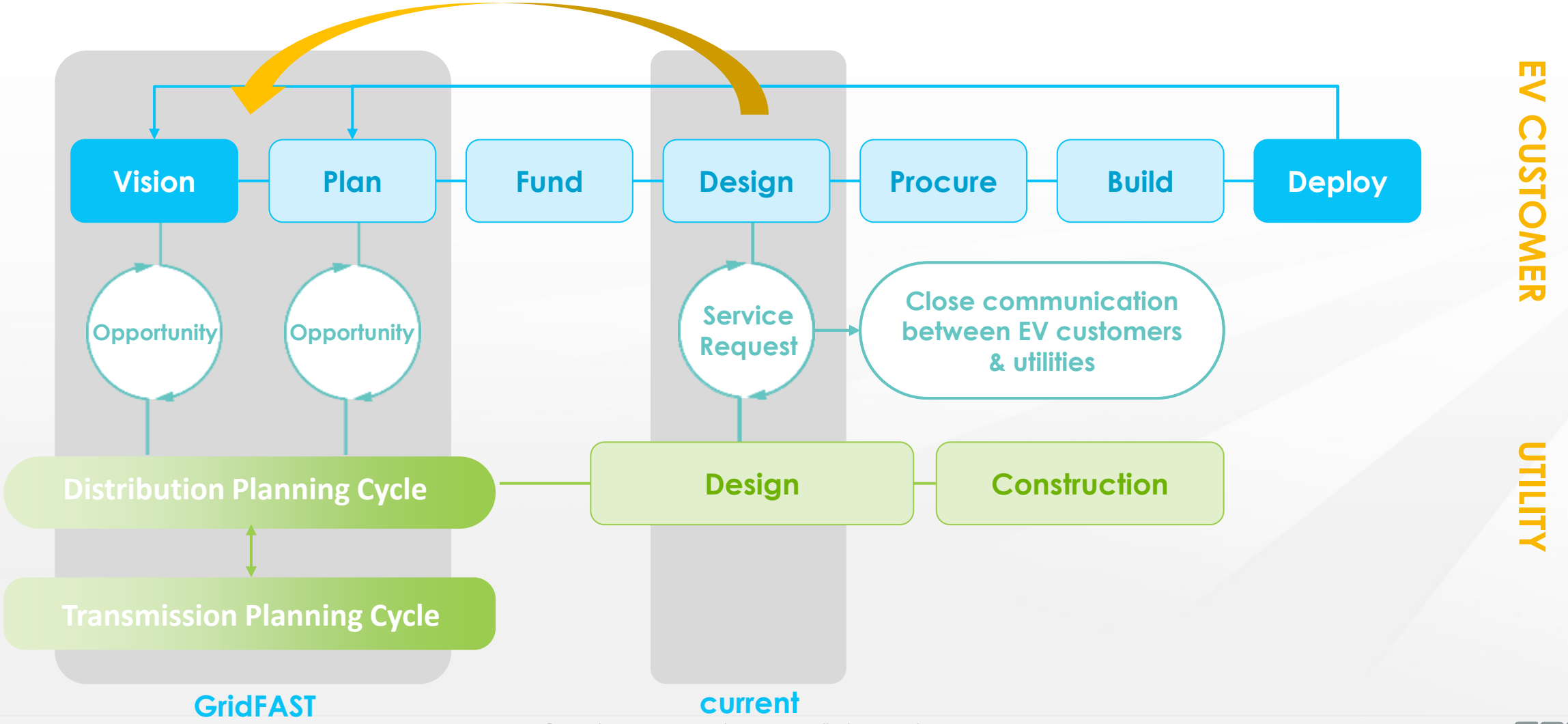
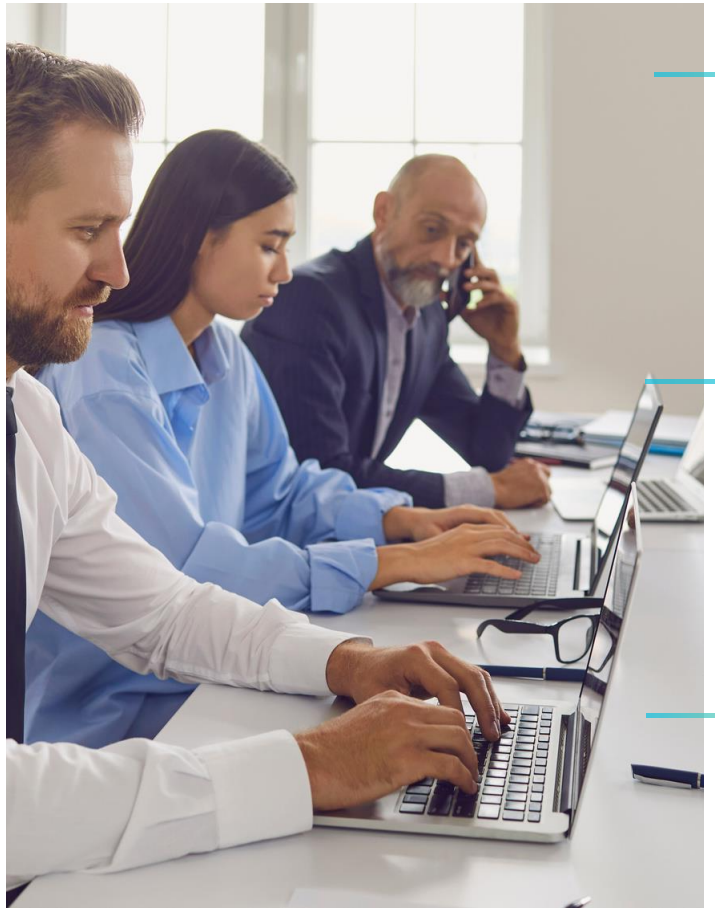
Grid Interconnection Problem

How might we help EV customers and utilities get ***actionable*** information ***earlier***?



Customers shared pain points that informed GridFAST

GridFAST addresses customer pain points



"**I've spent many weeks trying to figure out which utilities serve which of our locations** – and I'm still not done… **make this information available to us.**"

"**I had 10 utilities for 11 sites… they're all different utilities… All the utilities' processes are different.**"

"…**enable us to make good decisions.** Because **right now, everyone's just operating on a lot of assumptions, and that can be dangerous.**"

Powering utility insights

GridFAST addresses utility pain points

"**90% of customer forms are returned for incomplete information.** Tracking down this input significantly increases our workload. Customers just don't understand what we're looking for."

"**There are thousands of fleets in our service territory – we know about 38**"

"**EV customers traditionally have not been a managed account.** The managed account team doesn't have the bandwidth to understand EV customer needs nor the time to build relationships."

GridFAST: Your central portal for collaboration on EV projects

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EV customers get the right utility connections, capacity info (where available), and standardized information

EPRI GridFAST™

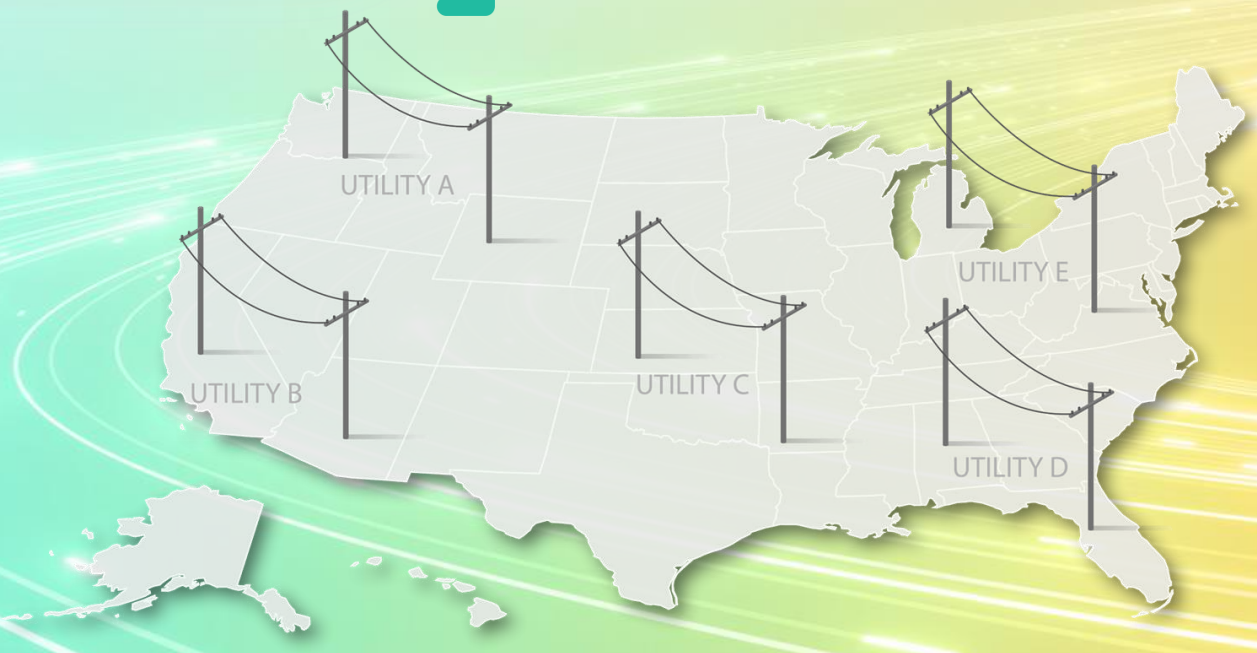
Secure Online Data Exchange Platform

Utilities get early insight into new EV loads coming, project readiness, and right-sized load estimates

FLEET OPERATORS

FUELING RETAILERS

EV CHARGING DEVELOPERS



Create your FREE account at http://GridFAST.com

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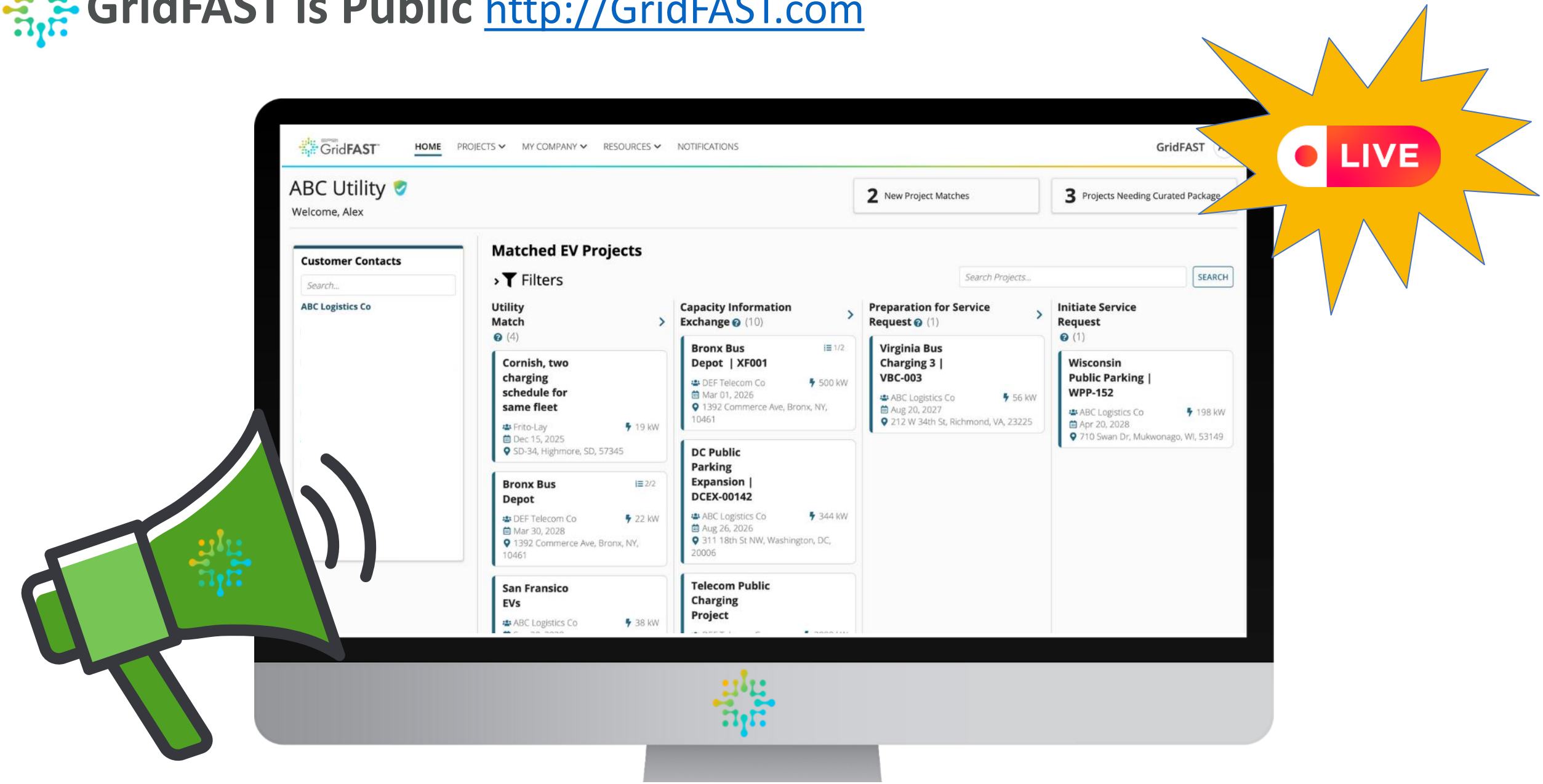
GridFAST is Public http://GridFAST.com



How GridFAST works

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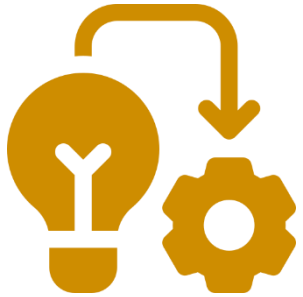
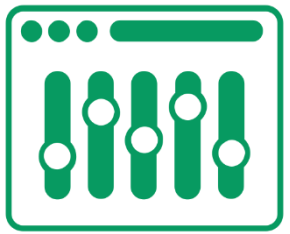


Project Input

EV customers enter their project concepts into GridFAST, and can view hosting capacity maps, if available

Utility Match

GridFAST matches EV projects to the relevant utility to start the exchange based on vetted information



Capacity Information Exchange

GridFAST is an easy and secure system for utilities to provide program and processes info to EV customers

Preparation of Service Request

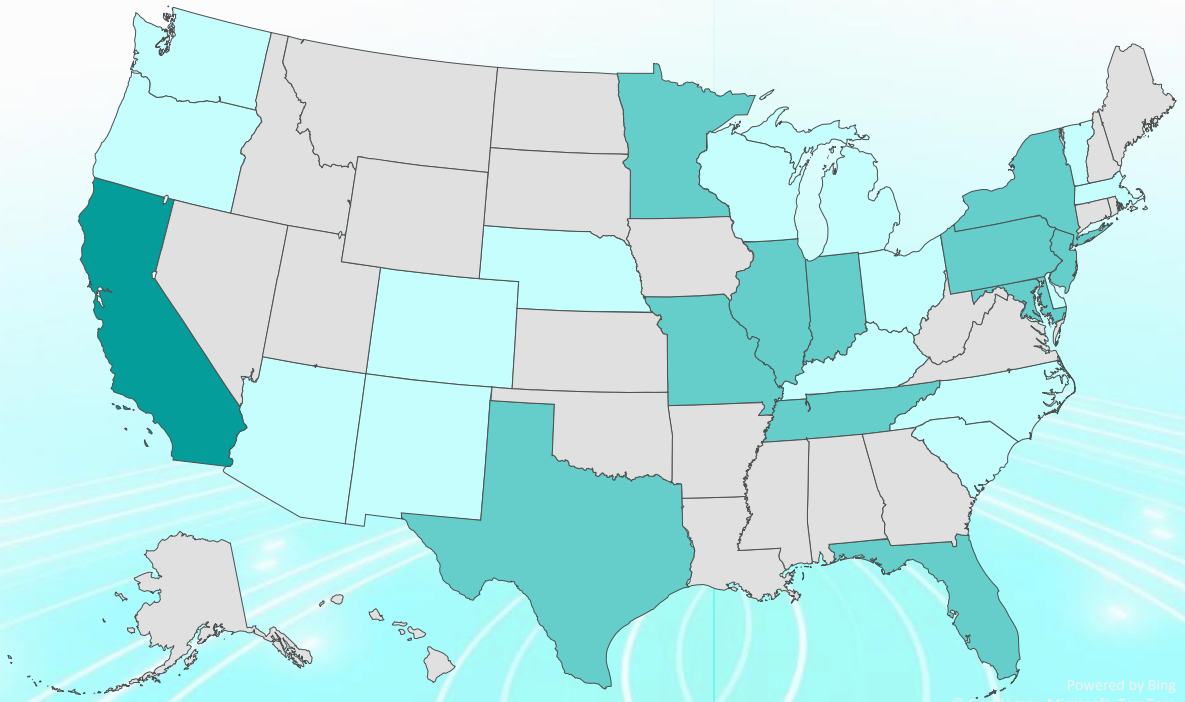
EV customers finalize project details

Service Request

EV customer information in GridFAST submitted to utility when they're ready to move forward

Utilities Continue to Join

EPRI GridFAST™



Utilities in 30 States

Ameren Illinois
CenterPoint Energy
Duke Energy
JEA
Consumers Energy — Count on Us
SMUD
Southern California Edison
Your Energy Partner OPPD Omaha Public Power District
PG&E
PGE
Ameren Missouri
conEdison
exelon
SNP
MVEC Minnesota Valley Electric Cooperative
Seattle City Light
nationalgrid
pepco AN EXELON COMPANY
Xcel Energy

The benefits of GridFAST increase as more users engage

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EV Customers

~ 3,200 US Utilities

GridFAST Lite
(Free version – limited coordination)

Match-making

GridFAST
(Industry portal for project planning)

Customer and utility coordination

GridFAST+
(Full service request functionality)

Service Request via API

Which roles/departments are ideal utility users?

Customer-facing:

Fleet Advisory Services
Account Managers
Business Development
Service Application Engineers

Planning or Analytics:

Distribution Planning
Load Forecasting Specialists

GridFAST | Customer's Project Summary View

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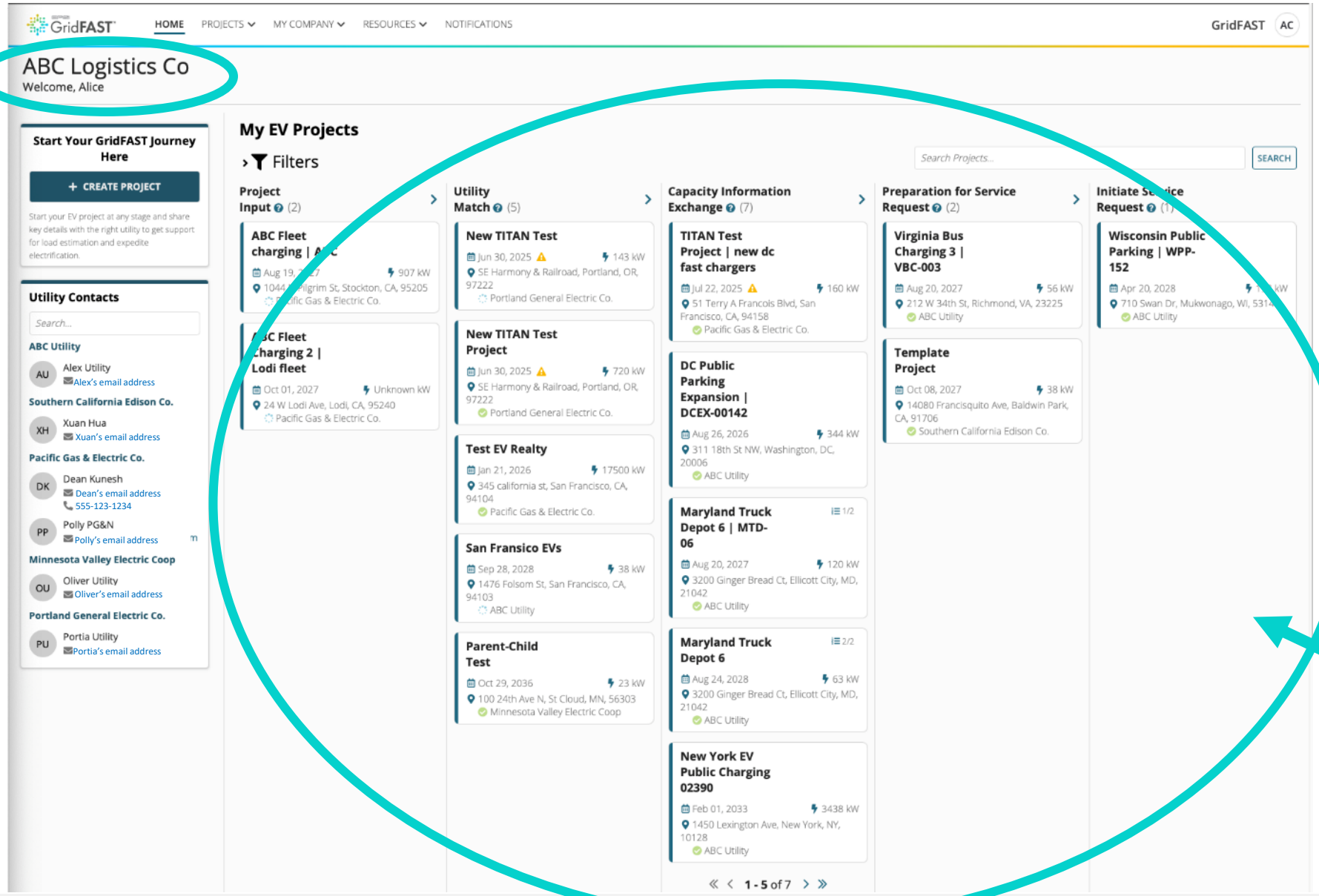
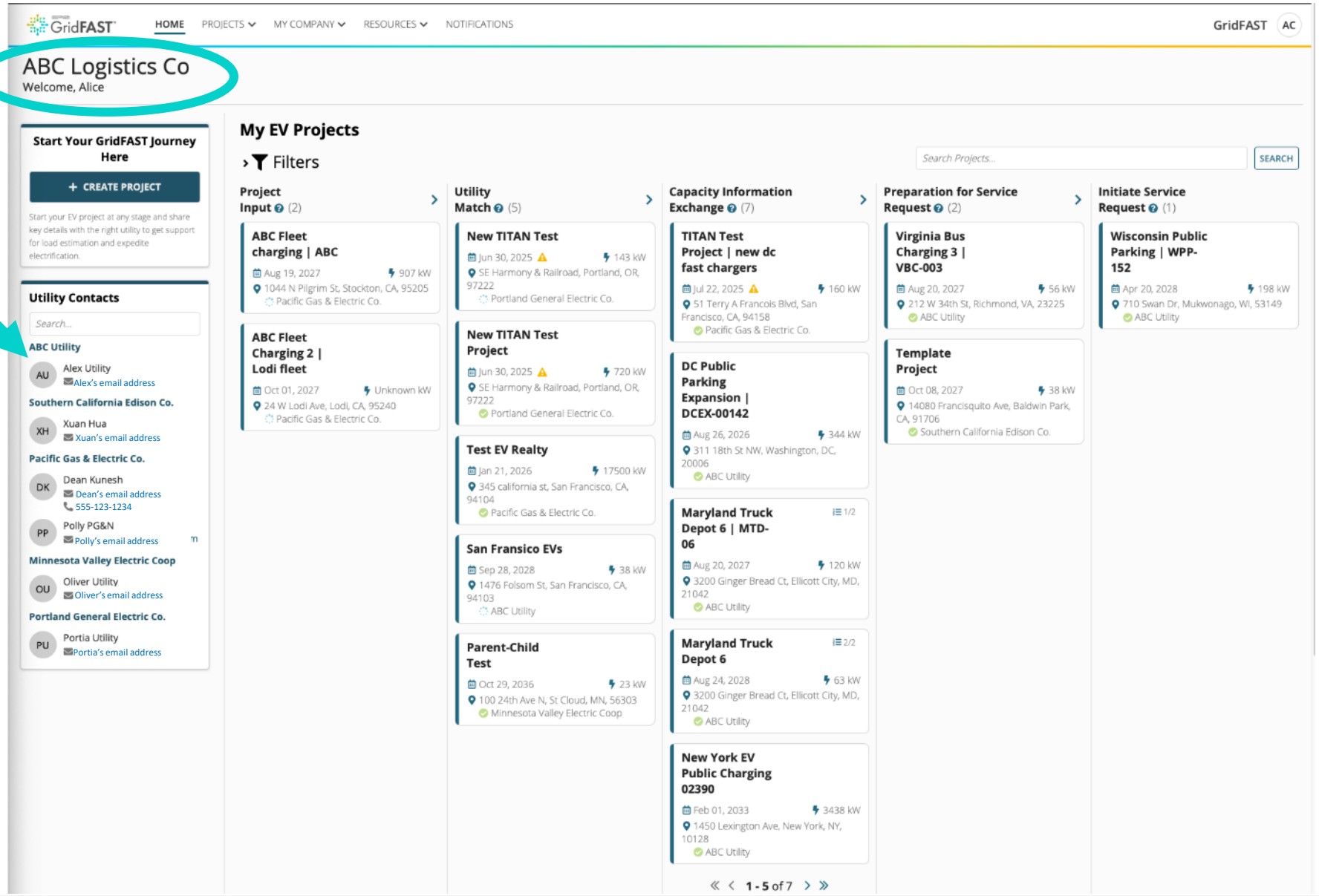


All my Projects at a Glance

Screenshot for illustrative purposes only; not real companies or data

GridFAST | Customer's Project Summary View

All my Utility Contacts at a Glance



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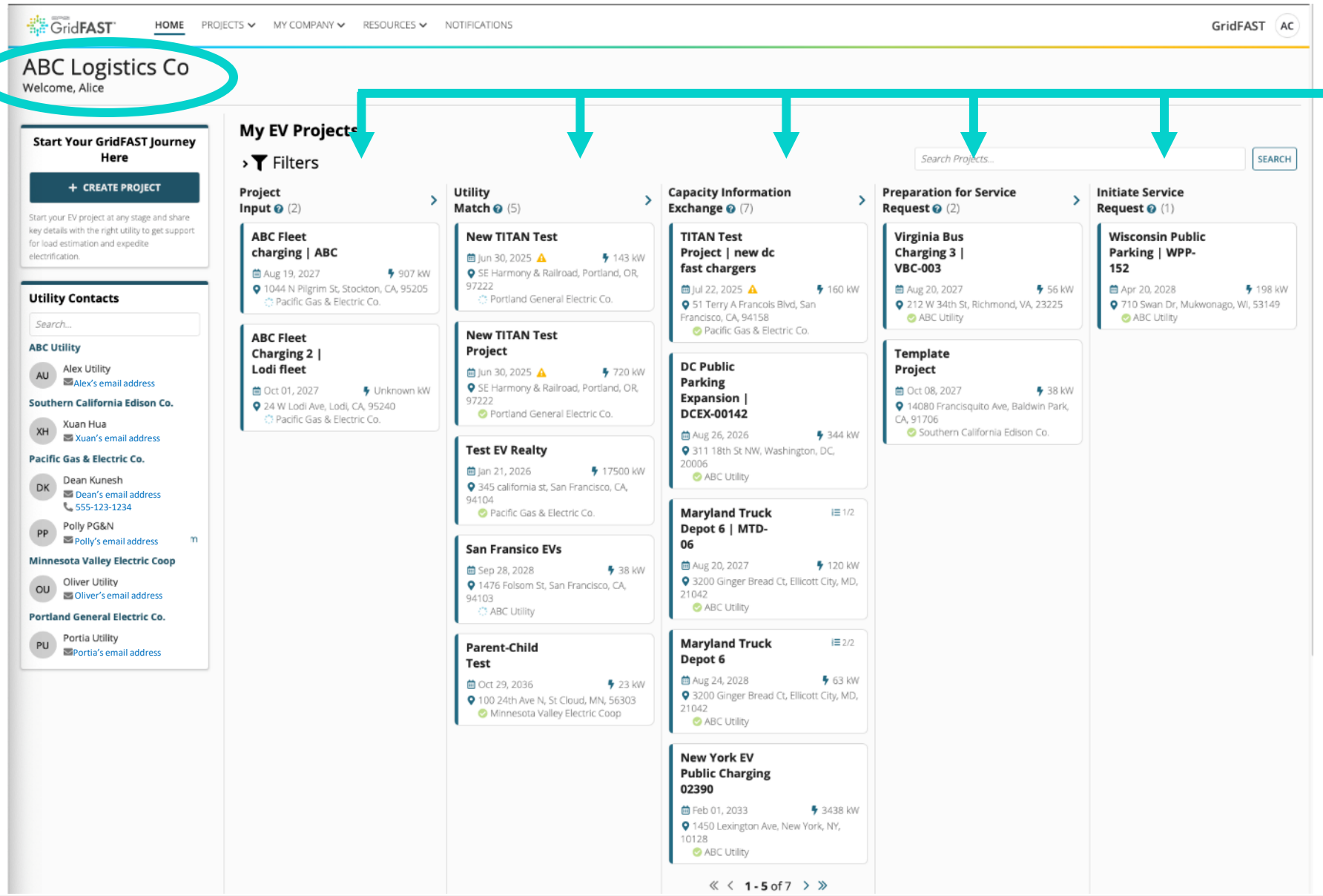
GridFAST | Customer's Project Summary View



Stage of My Projects as Planning Matures (from left to right)

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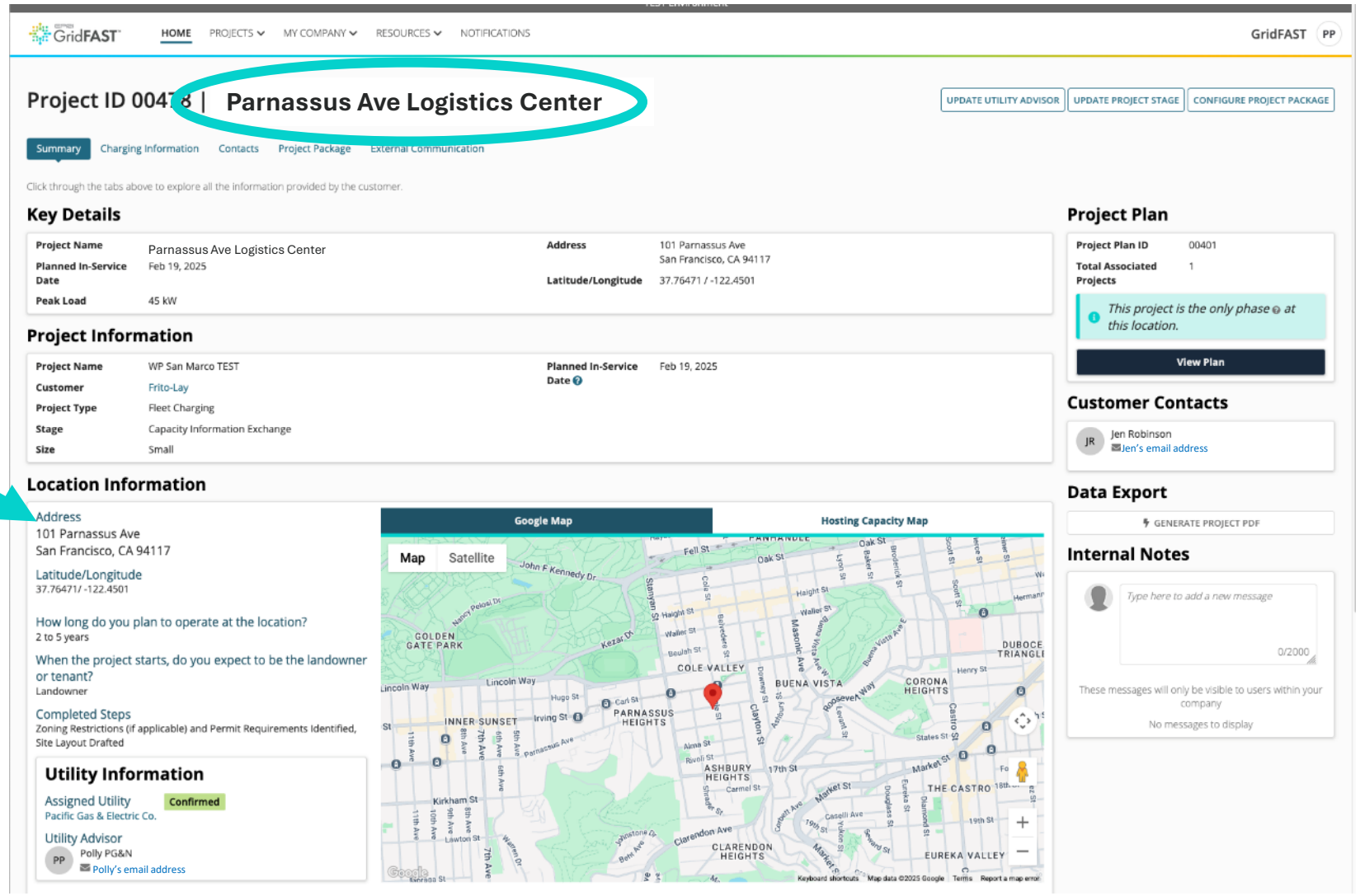
GridFAST | Example of a Customer Site Project

Site Address



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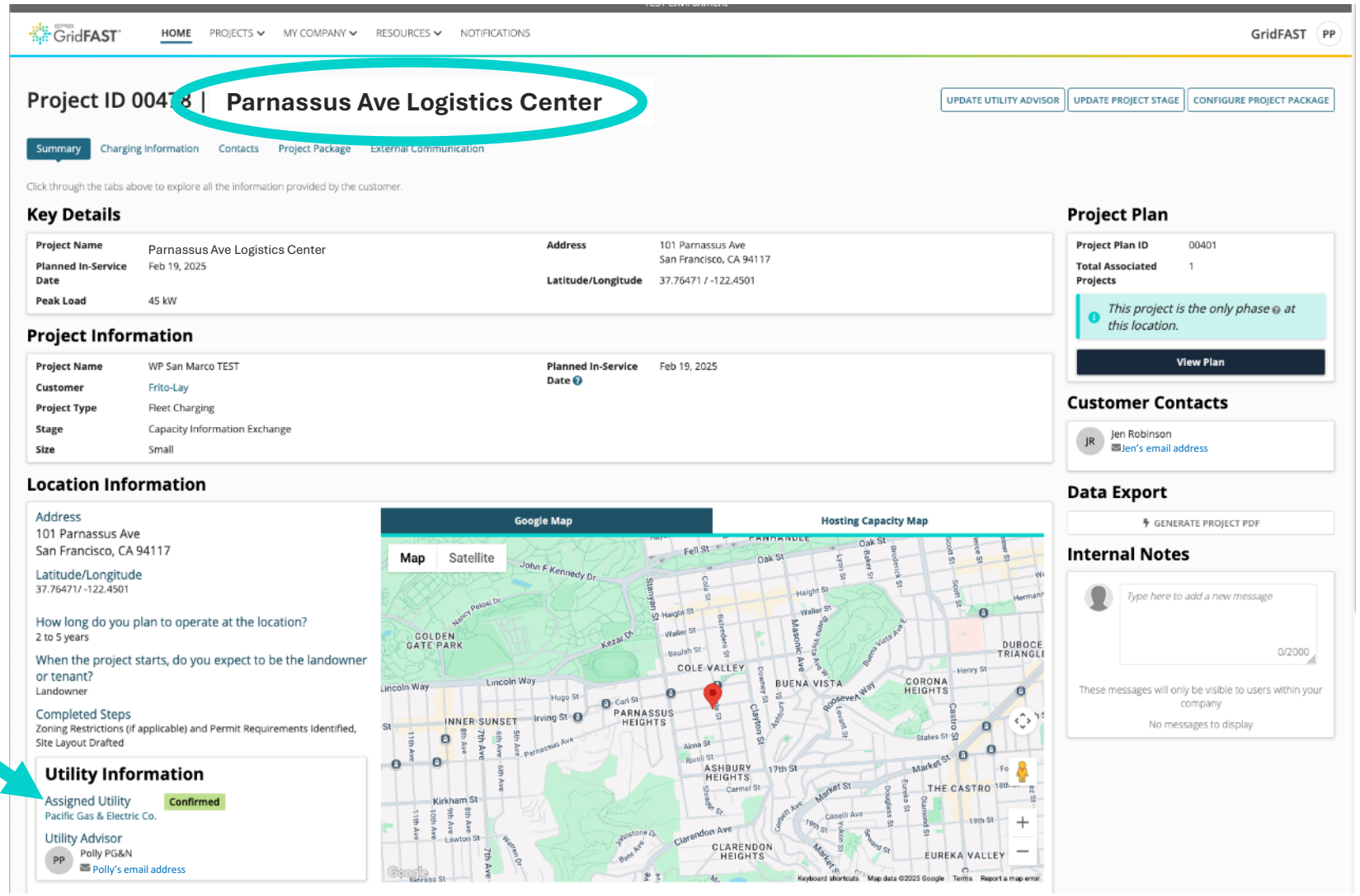
GridFAST | Example of a Customer Site Project



PG&E Confirmed

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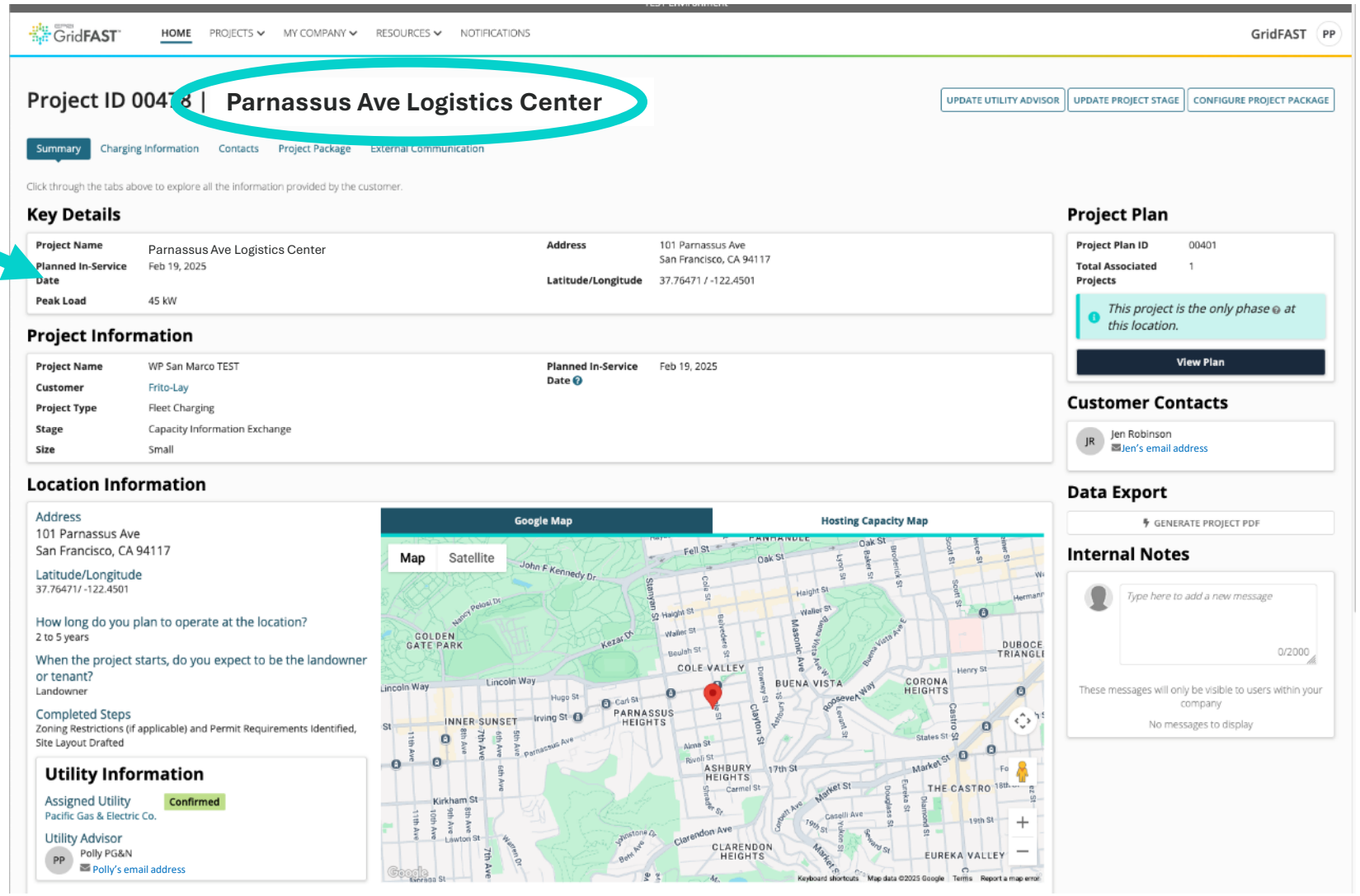
GridFAST | Example of a Customer Site Project

Customer's Planned in-Service Date



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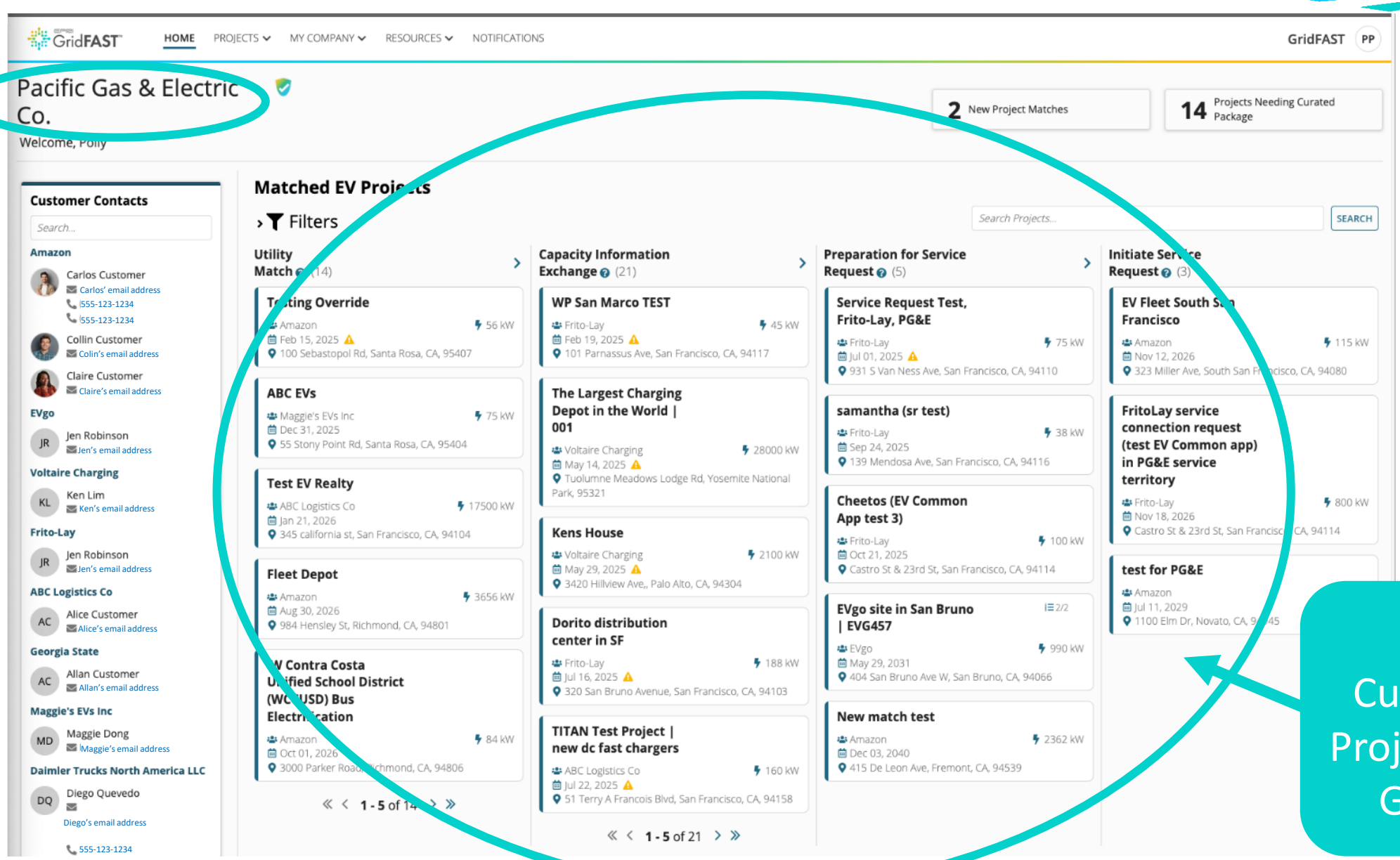
GridFAST | Utility's Project Summary View



All Customer Projects at a Glance

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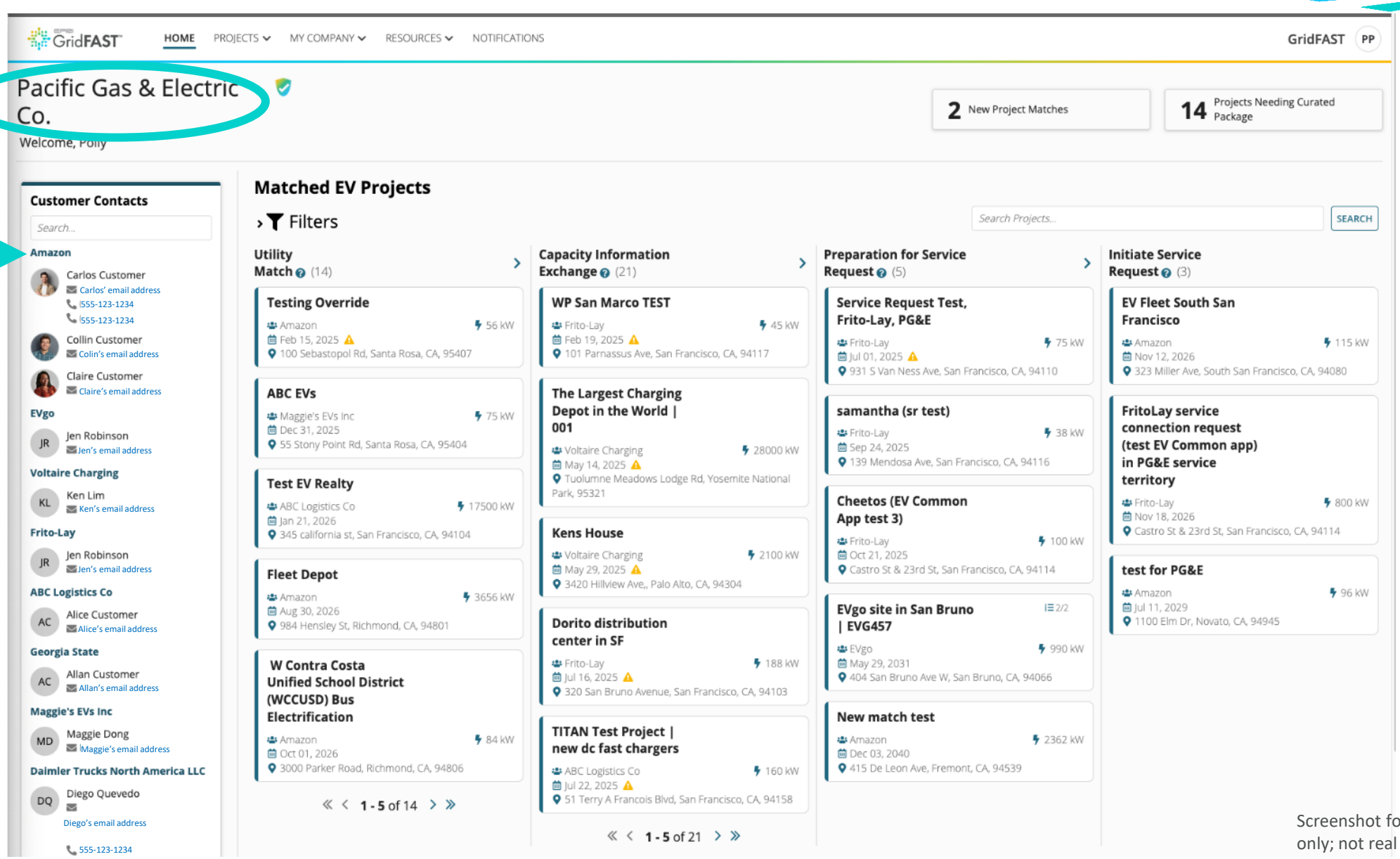
GridFAST | Utility's Project Summary View

All My Customer Contacts at a Glance



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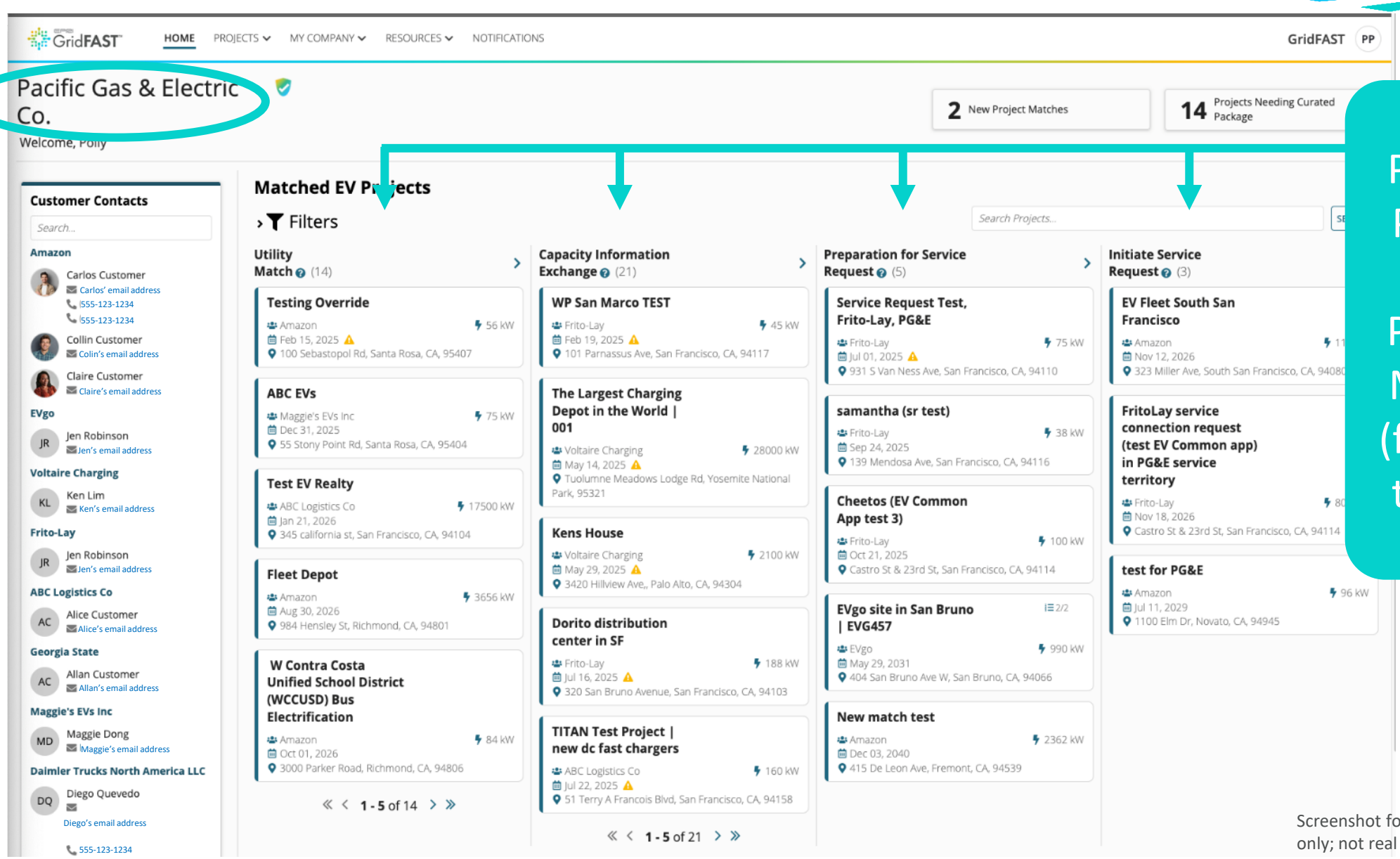
GridFAST | Utility's Project Summary View



Phase of Projects as Planning Matures (from left to right)

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Streamlining EV Service Connections for Small Fleets and MFH

DOE-Funded “Charging Infrastructure Service Connection Simplification Resource”, CIISR

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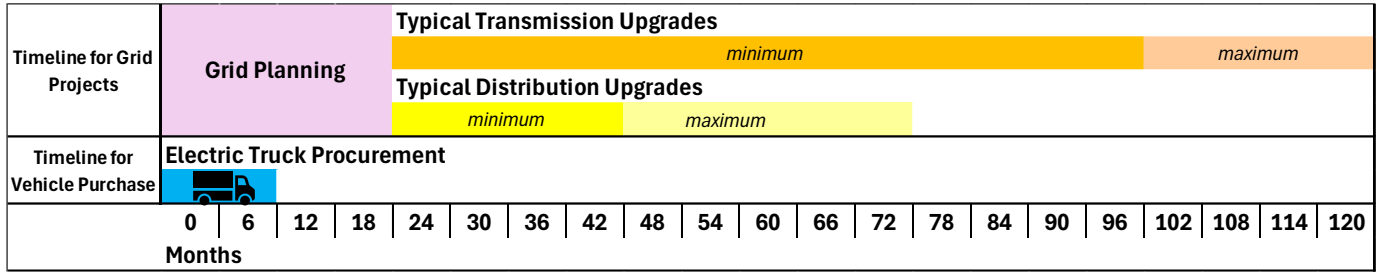
EV Service Connection Roadmap:

- Solution ideas, informed by customer and utility pain points, to streamline the EV service connection process to achieve scale.
- Geared towards small fleets and MFH customers, but the solutions benefit all customers.

1. EV Service Connection Roadmap: https://www.epri.com/research/programs/053122/results/3002031160
2. Research Report: https://www.epri.com/research/programs/053122/results/3002031384

EV Charging Infrastructure Service Connections:
Efficiency Is Important



- EV adoption at scale is coming→ utilities must be prepared for the increase in service requests for new or upgraded service.
- EV charging infrastructure service requests are different from other service requests:
  - Customers receive vehicles much quicker than other typical service requests (e.g., buildings).
  - Projects may require more discussions with the utility to determine how managed charging and other non-grid build solutions (non-wires alternatives) may apply to the project.
  - **Smaller EV customers have different challenges than larger customers:**
    - EV charging represents a new relationship with the utility for the small customer.
    - Small customers have limited resources compared to national companies.
    - Much of the grid connection conversation has been related to larger customers.
    - Small customers will make up a large portion of service requests at scale.

Project focus is on small customers, so no customer is left behind in the transition to EVs.

EV Charging Infrastructure Service Connections:

Defining a Small Customer

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What is a small customer?

- No specific vehicle class, vehicles can be varied (e.g. pick-up trucks or SUVs or delivery vans or semi-trucks).
- Generally, <10 vehicles in the fleet.
- Vehicles can be parked at home or at a rented/owned office HQ.
- Primary business is varied but usually classified by the type of business carried out: e.g. food service, flower delivery, tool sales, maintenance services.
- Multi-family housing (MFH) developers, owners, and building managers are also small customers in this report. They face similar challenges to those of small fleets.
- Property size can vary, but the EVSE installed is around 1-10 EVSE.

Small Fleet Customer Examples:

- A plumbing company with 2 pick-up trucks.
- A laundry delivery service with 3 sprinter vans but expanding to 5.
- A “mom and pop” freight delivery business with five Class 8 vehicles.

Multi-Family Housing Examples:

- A MFH owner of an 8-unit building installing 8 EVSE
- A property manager of an 80-unit building installing 4 EVSE in an underground garage
- An individual condo owner installing one EVSE

An Updated EV Service Connection Process

Research and feedback showed the need to update the typical service connection process at many utilities:

- Add in a “pre-step” and “post-step” in the energization journey.
- Factor in whether the customer owns the space or land where the EV charging infrastructure will be installed.
- Factor in which steps can be completed in parallel.
- Determine which small customers may not need a service upgrade compared to those who do.

ENERGIZATION JOURNEY

Typical Service Connection Process

0. INFORMATIONAL PHASE: VISION, PLAN, FUNDING

1. Site Selection and Assessment

2. Submit service request

3. Review application

4. Develop cost estimates & design site plan

5. Submit materials for permitting and/or zoning review

6. Grant Permits

7. Obtain easement

8. Payment of upgrade costs

9. Site construction

10. Site inspection

SITE ENERGIZED

11. Post-Energization

PLANNING PHASE

IMPLEMENTATION PHASE

ENERGIZATION

- Local Gov
- Utility + Customer
- Utility
- Customer
- Utility or 3rd party

Solution Ideas for a Streamlined EV Service Connection Process

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1

- Take challenges
- Identify opportunities and solutions
- Categorize the solutions into the energization journey steps.

2

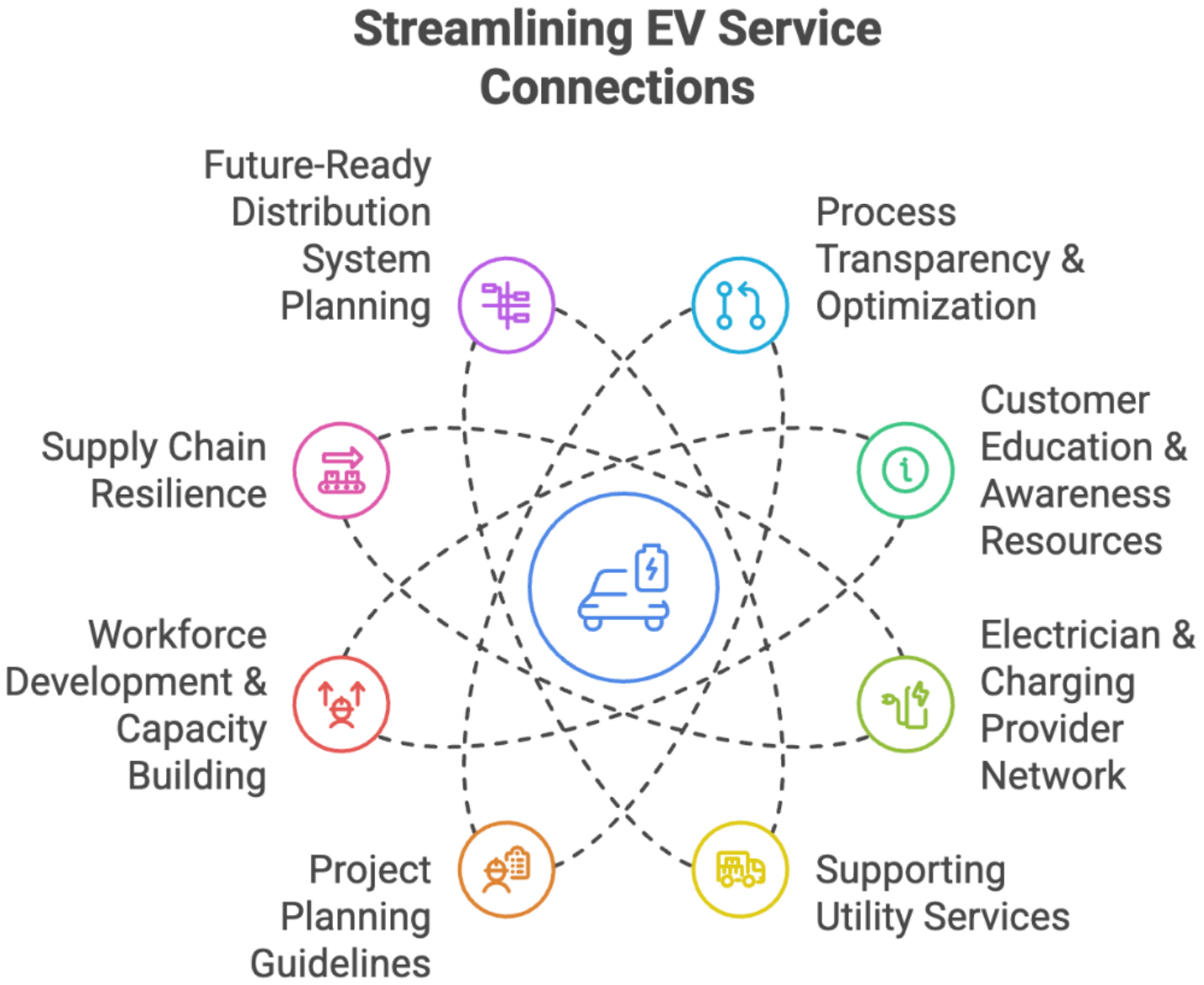
- Rank the opportunities at each step based on easiest to implement (lowest hanging fruit), compared to harder to implement and could even require regulatory approval.

3

- Mark solutions with the biggest impact in streamlining the process or improving customer engagement and education efforts with a lightning bolt.

44 total solutions!

Solution Ideas for a Streamlined EV Service Connection Process



Solution Ideas for a Streamlined EV Service Connection Process

Step 1: Identify the Site.

1. Ensure customer is aware of low-cost solutions such as smart plugs, smart meter panels and other related solutions that maximize panel space.
2. Point to or maintain a list of public charging depots and share it with fleet customers.
3. Provide a list of qualified consultants / contractors to support the site design, engineering and the remainder of the energization journey.
4. Publish load hosting capacity maps.

Solution Ideas	Rank
Step 1: Identify the Site	
Ensure customer is aware of lower cost solutions such as smart plugs, smart meter panels and other related solutions that maximize panel space. In places with panel constraints, smart meter panels can manage and control when some devices are in use and when others are not (e.g. if the a/c is on, the EVSE is off). Smart plugs are similar. Other related solutions include installing smart EVSEs that allow for a customer, such as a MFH customer, to be able to charge their tenants without more meters. While these technologies are more commonly in use on the residential side, their adoption is growing for commercial customers. Utilities should explore further how they can serve some types of EVSE installations as separate customer accounts, rather than treating them as a load under an existing customer account. These are designs that can reduce charging site complexity if it is assumed that EVSEs that contain metering and protection are allowed to be directly connected as utility customers. This can work for some shared MFH housing, and some public parking applications that have overhead service. With the MFH project, the EVSE is added as an additional customer on existing shared secondaries; there is no new meter needed, nor a breaker panel, which saves money and time. For the small fleet parking in a public parking lot, the overhead service drop is directly to the EVSE, and eliminates the need for any separate utility meter, trenching, conduit or breaker panel. More information and considerations are available in EPRI's report, "Shared EV Charging Sites: Cost Components and Cost Reduction Strategies."	1
Point to or maintain a list of public charging depots and share it with small fleet customers. While some small fleet customer may desire to have their own EVSE, others may find value in accessing public charging or public charging depots. The utility could point to websites where public charging stations are listed (e.g. PlugShare, DOE Alt Fuels Database), or the utility could maintain a list of the currently locally available (not planned, as this may be sensitive and confidential information) public charging depots that the small fleet customer could access and share this with customers. Other organizations, such as Clean Cities groups, may also maintain their own lists, and utilities can refer customers to their websites. This shows customers the variety of charging options available. Even if customers ultimately install their own charging infrastructure, this list can become a part of their resilience plan (e.g., for when their chargers are down/require maintenance).	2
Provide a list of qualified consultants/contractors to support the site design, engineering and the remainder of the energization journey. For some small fleet and MFH customers, it may be desirable to hire a qualified consultant and/or contractor to assist with the site design, preliminary engineering, if applicable, and the remainder of the energization journey. Of course, not all customers will have the budget to be able to work with a consultant. Utilities can assist in this step by partnering with local Clean Cities organizations, municipalities, and/or local nonprofits to develop a list of consultants and/or contractors for these kinds of projects. Consultants/contractors will also be able to assist with ADA requirements potentially needed at the site for access to EV charging stations.	3
Publish load hosting capacity maps. While not all small fleet and MFH customers might utilize a load hosting capacity map, they can be very helpful for customers who would utilize the maps to identify site or depot locations with capacity. A load hosting capacity map is an indicator of the amount of new load that can be added to the distribution system without triggering grid upgrades. Utilities could update these maps monthly, biweekly, or even daily; some utilities have or are developing online maps that can be directly accessed by customers. Utilities could also include information on how to read and interpret the maps. NARUC offers some resources on the grid data sharing conversations to have in advance with the appropriate stakeholders (e.g., regulators, governing boards). It should be noted, however, that a hosting capacity map does not necessarily show interconnection requests that are in the queue and where locations with spare capacity are already being considered by other customers. Example: Pacific Gas & Electric's hosting capacity map, referred to as the Grid Resource Integration Portal.	4

Solution Ideas for a Streamlined EV Service Connection Process

Step 2: Review Application

1. Assign a single point of contact for the small fleet and MFH customer to guide the customer through the remainder of the energization journey.
2. Create a clear internal process for EVSE service connections with the ability to track internal inefficiencies.
3. Develop an online system for customers to track application status, receive updates and plan for any delays.

Solution Ideas	Rank
Step 3: Review Application	
Assign a single point of contact for the small fleet and MFH customer to guide the customer through the remainder of the energization journey. Consistent feedback from the small fleet and MFH customers was the desire for a single point of contact at the utility. Even as the project passes into other departments at a utility (e.g., the engineering team or construction team), the single point of contact should remain connected to the project and provide regular updates back to the customer. The benefit of this single point of contact on the utility side is that relationships can be formed between the customer and the utility advisor that can be leveraged in the future as additional programs may be offered; for example, as the utility offers additional managed charging programs, the single point of contacts can easily reach back out to customers and inform about these new utility offerings. However, it should also be noted that once the project gets into the construction phase, the single point of contact at the utility does not necessarily need to be a middle-man between the construction team and the customer, which could lead to some bottlenecks and delays. Example: At Salt River Project in Arizona, all customers are assigned a Strategic Account Manager after application submission, who connects them to appropriate departments and resources within Salt River Project and functions as their prime point of contact.	1
Create a clear internal process for EVSE service connections with the ability to track internal inefficiencies. Most utilities have the opportunity to get ahead of the EV adoption curve and develop streamlined internal processes for EVSE service connections. Utilities can take advantage of this and work across departments and develop a flow chart for the service connection process for EVSE in general, not just for small fleet and MFH customers. Utilities can also identify goals and metrics for each stage of the internal energization journey for a customer, set internal goals to achieve them, and communicate these timeframes to the customer. This can be a way to better understand where improvements may be needed as well as provide a baseline against which to measure and communicate progress with additional external stakeholders (e.g., with regulators and governing boards). One utility noted that sharing end-to-end process timelines may encourage greater efficiencies than timelines for each process step. They asserted that stage-specific targets can lead to a focus on compliance rather than on innovation and time-saving strategies that could reduce the overall energization process.	2
Develop an online system for customers to track application status, receive updates and plan for any delays. While a single point of contact is desired for small fleet and MFH customers, having a central portal or online system for customers to track their project status, receive updates, and plan accordingly for any delays can eliminate some of the unnecessary email traffic between the customer and the single point of contact.	3

Implementing the Roadmap

NASUCA Member Takeaways

1. **GridFAST is your central portal for collaboration on EV projects that are 1+ years out.**
2. **GridFAST is a secure, online data exchange platform.**
3. **The EV Service Connection Roadmap contains solution ideas for each step of the EV service connection process to help streamline and be ready for EV service requests at scale.**
4. **The Roadmap is geared towards small fleets and MFH customers, but the solutions can benefit all customers (and utilities).**

Asks:

- ❑ **Encourage utilities and EV customers to use GridFAST.** The customer gets assistance before the service request, and the utility gets project information pre-service request to be able to plan more effectively and proactively. This can lower costs for everyone in the long run.
- ❑ **Encourage utilities to review the Roadmap solutions ideas** for streamlining EV service requests. This can save customers and utilities time and money.

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Thank You

EPRI

GridFAST: Three utility user levels

Features		GridFAST Lite	GridFAST*	GridFAST +**	Comments
Available after v1 rollout	Project Matchmaking	Yes	Yes	Yes	Advances the many-to-many requirements
	Number of users	One (1)	Unlimited	Unlimited	Features for non-subscribers limited beyond core functionality
	Utility Contact Listing	Email & Phone Number	Configurable	Configurable	"
	Utility Welcome Package (showcase utility EV program information for all GridFAST customers)		Configurable	Configurable	"
	Project Package (curated information specific to an EV customer's project)		Configurable	Configurable	"
	User Group Community		Advisory Seat, Quarterly Cadence	Advisory Seat, Monthly Cadence	Details of User Group community are expected to evolve; combined quarterly GridFAST and GridFAST+ subscriber meetings
Available after v2 rollout	API Access			API Key Provided	
	Self-Configurable Questions (additional questions to Common App)			Configurable	

* Regular GridFAST will continue to be available after GridFAST PLUS rollout

** EVs2Scale members receive GridFAST PLUS subscription through 2030 (5 years of value)

GridFAST Pricing Structure

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Large Utility Pricing Structure				
GridFAST Access	Base Price	Set-up Fee**	Per OpCo Adder	Term
GridFAST	$ 15,000	-	$ 1,500	12 months*
GridFAST+	$ 50,000	$ 10,000	$ 3,000	12 months

Medium & Small Utility Pricing Structure				
GridFAST Access	Base Price	Set-up Fee**	Per OpCo Adder	Term
GridFAST	$ 2,500	-	$ 500	12 months*
GridFAST+	$ 15,000	$ 7,500	$ 1,000	12 months

Company Size Indicator:

- *Large: T > 10,000 or D > 44,000, where T is annual peak transmission (MW), and G is annual distribution output (GWh)*
- *If a company's T and D metrics span two tiers, their price is the higher of the two*

* *The minimum GridFAST subscription is two years ($15,000/year for Large Utilities and $2,500/year for Small & Medium Utilities)*

** *Set-up fee will be quoted based upon costs for utilities with parent/operating company relationship.*

Self-Directed Fund (SDF)-eligible