Prepared by:

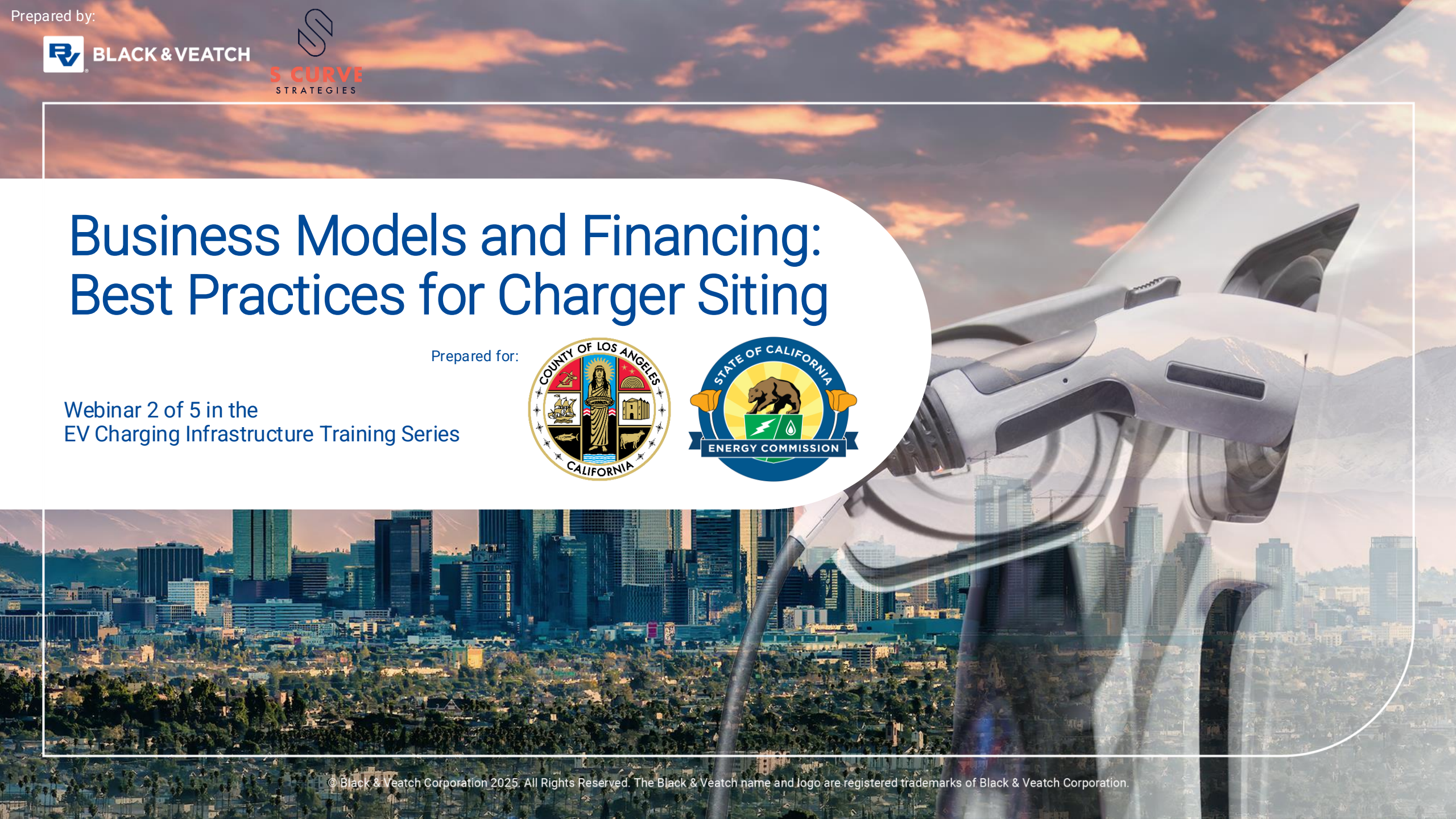
BLACK & VEATCH

S CURVE STRATEGIES

Business Models and Financing: Best Practices for Charger Siting

Prepared for:

Webinar 2 of 5 in the
EV Charging Infrastructure Training Series



Trainers

Will Einstein

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April Bolduc

S Curve Strategies

Randy Schimka, PE

S Curve Strategies

Five-Part EV Charging Infrastructure Training Series

1. Strategic EV Charger Site Selection

Best practices for EV charger siting in LA County

COMPLETE

2. Business Models and Financing

EV charging business models, incentives, rebates and financing options

FEBRUARY 25

3. Regulations, Ordinances, and Implementation

Streamlining EV charging projects by understanding impacts

APRIL 3

4. Permitting

Best practices to streamline EV charging project permitting

APRIL 23

5. Site Design, Energization, and Operation

Best practices in EV charging site design

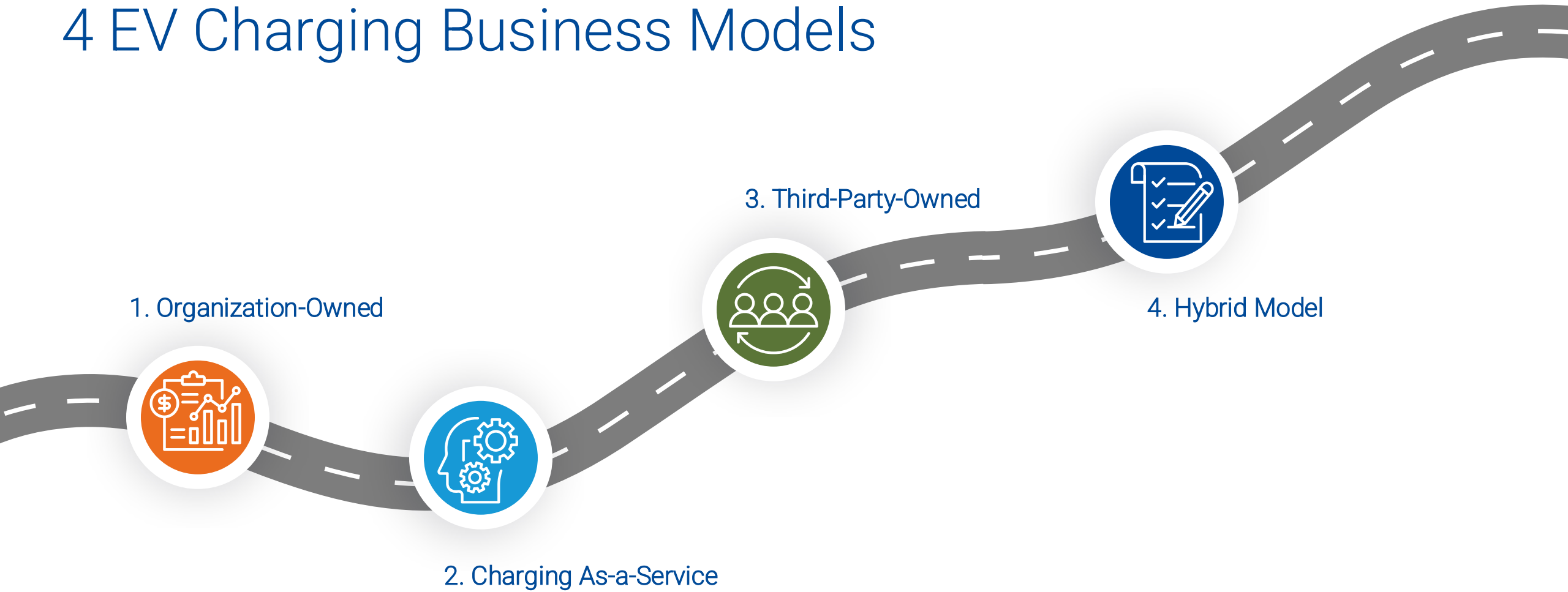
MAY 15

All five recordings and slides will be made available.

Agenda

1. Charging Business Models
2. Utilities: Rates, Demand Charges & Rebate Programs
3. Federal, State & Local Incentives
4. Winning Applications
5. Key Take Aways
6. Resources & Q&A

4 EV Charging Business Models

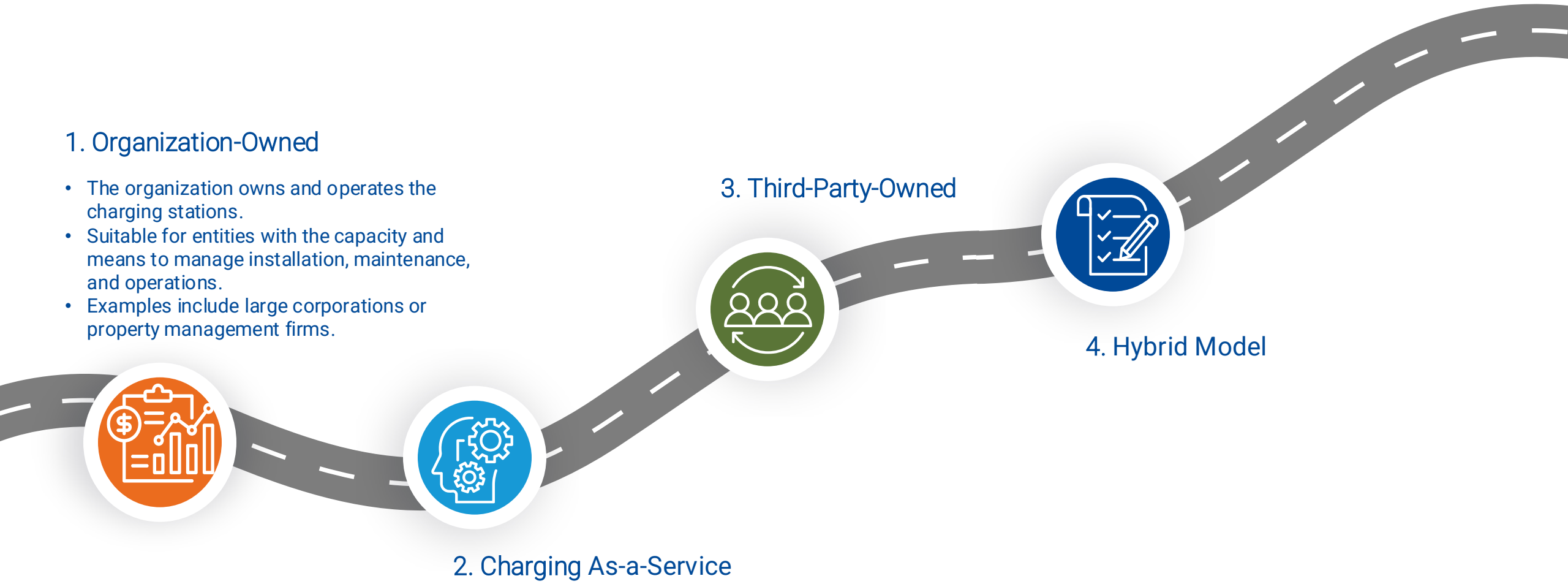


Choosing the suitable model depends on budget, operational capacity, desired level of control, and strategic objectives.

4 EV Charging Business Models

1. Organization-Owned

- The organization owns and operates the charging stations.
- Suitable for entities with the capacity and means to manage installation, maintenance, and operations.
- Examples include large corporations or property management firms.



2. Charging As-a-Service

3. Third-Party-Owned

4. Hybrid Model

Organization-Owned

1 – Organization

Installs, owns and operates.

2 – EV Charging Stations

Provides charging services.

3 – EV Users

Organization has option to charge a usage fee to drivers, typically in the form of a per kilowatt-hour charge. No fee for fleets.

Requires increasing investment over time due to the organization providing maintenance, etc. Organization has the option to charge drivers.

Organization-Owned

Opportunities:

- Revenue retention
- Control over installation, operation and maintenance of charging equipment
- Charging stations are company assets and can increase property value
- Flexibility to integrate infrastructure with smart building initiatives

Challenges:

- High upfront capital investment
- Operational and maintenance burden that needs specialized staff or outsourcing
- Operational and market technology risk exposure
- Complexity in scaling the infrastructure to meet growing EV charging demand

Example: Organization-Owned

Retail Center

- A local property management firm represents a distant property owner.
- Property firm purchases, installs and maintains a mix of public Level 2 and DC fast chargers.
- Firm leverages:
  - CALeVIP rebate
  - Utility charger rebate
- Firm pays:
  - Electric bill
  - Network fee and maintenance costs
- Firm receives:
  - Driver billing revenue, minus a small service fee
- Results:
  - Increased foot traffic and tenant satisfaction
  - Marketing campaign on retail center's sustainability efforts

Who Pays? Organization-Owned

Organization

Pays:

- Chargers and installation ($$$$)
- Electric bill ($$)
- Network fees to the charging provider ($)
- Maintenance costs to the charging provider ($)
- Billing service fee to charging provider ($)

Receives:

- Rebate funds from utility/state ($$ to $$$)
- Driver billing revenue from service provider ($$ to $$$)

Charging Provider

Pays:

- Driver billing revenue to organization ($$ to $$$)

Receives:

- Sale of chargers from organization ($$$$)
- Network fees from organization ($)
- Maintenance costs from organization ($)
- Billing service fee from organization ($)

Cost components and revenue change depending on size of the project.
Site host profitability depends on the number of charging sessions.

4 EV Charging Business Models

1. Organization-Owned

2. Charging As-a-Service
- Third-party provider installs, owns, and maintains chargers.
- Organization pays a subscription fee.

3. Third-Party-Owned

4. Hybrid Model

Charging As-a-Service

1 – Service Provider

Purchase, installs, owns and maintains chargers. Pays electric bill.

2 – EV Charging Stations

Provide charging services.

3 – EV Users

Pay for charging to service provider.

4 - Organization

Pays service fee to Service Provider.

5 – Service Provider

Collects fee from Organization.

Represents a recurring flat service fee from Organization to Service Provider over time.

Charging-as-a-Service

Opportunities:

- Lower upfront costs by paying recurring service fees
- Simplified operations due to outsourcing
- Predictable budgeting due to consistent recurring service fees
- Leverage provider's expertise for rapid deployment as needed

Challenges:

- Reduced revenue to site host due to service provider agreement
- Long term service agreements might limit flexibility
- Site host is dependent on provider's expertise for maintenance, uptime and customer support
- Standardized service packages may restrict ability to integrate with other on-site technologies

Low upfront costs. Limited revenue, long-term.

Example: Charging As-a-Service

Office Complex

- A local office complex tenant receives property owner approval to partner with a third-party provider on a bank of Level 2 chargers.
- Third-party pays:
  - Purchases, install, manage and maintains chargers
  - Electric bill and network fees
- Tenant pays:
  - Monthly subscription fee based on usage to minimize their upfront investment
- Third-party provider receives:
  - Monthly subscription
  - EV charging billing revenue
- Results
  - Office complex tenant can offer EV charging to employees and visitors without the upfront costs and operational responsibilities
  - Increased employee satisfaction
  - Marketing campaign on tenant's sustainability efforts

Who Pays? Charging As-a-Service

Organization

Pays:

- Monthly subscription fee to third party – including any state/utility rebates ($$$ to $$$$)

Charging Provider

Pays:

- Chargers, Installation, and maintenance ($$$$)
- Electric bill and network fees ($$)

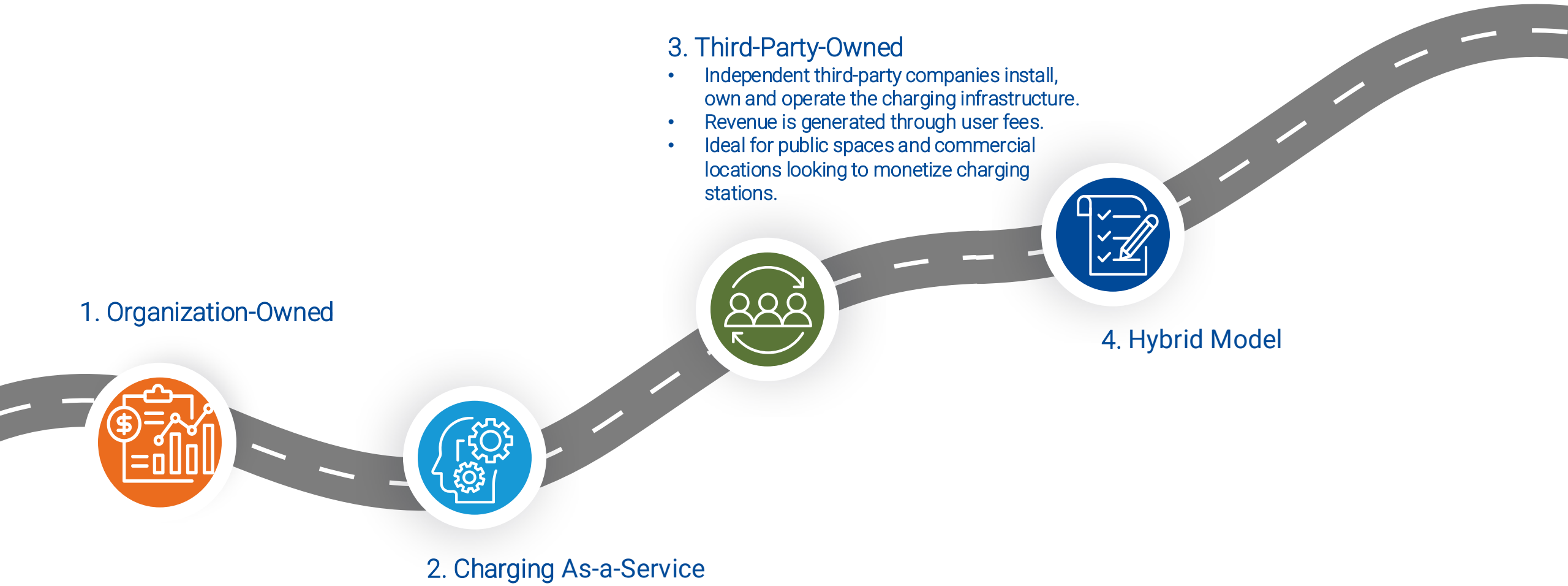
Receives:

- State/utility rebate from organization ($$$ to $$$$)
- Monthly subscription fee ($$$ to $$$$)
- Billing revenue from drivers ($$ to $$$)

No site host profitability. Minimizes organization's initial capital costs.

Key is determining a fair price for the monthly subscription fee that allows the charging provider to cover costs and allow for some profit.

4 EV Charging Business Models



1. Organization-Owned

2. Charging As-a-Service

3. Third-Party-Owned

- Independent third-party companies install, own and operate the charging infrastructure.
- Revenue is generated through user fees.
- Ideal for public spaces and commercial locations looking to monetize charging stations.

4. Hybrid Model

Third-Party-Owned

1 – Third-Party Owner

Organization allows third-party to install and operate chargers on their property.

2 – EV Charging Stations

Provide charging services.

3 – EV Users

Pay for charging.

4 – Third-Party Owner

Pays lease payment and revenue share of driver usage fees to Organization.

5 – Organization

Collects lease payment and portion of revenue.

Provides small amount of revenue for the third-party owner. Lease payment and revenue share to Organization.

Third-Party-Owned

Opportunities:

- Minimal capital expenditures for hosts
- Revenue sharing or lease agreement payments
- Professional management with EV charging expertise
- Organization can focus on core business while providing amenities

Challenges:

- Third-party operator captures most of the revenue
- Potential misalignment of organization's sustainability or customer service objectives
- Site quality of service, maintenance and responsiveness is dependent on external parties
- Negotiating third-party contracts with appropriate terms can be complex

Ideal for those looking to minimize upfront costs. Requires careful contract management and alignment with your organization’s broader goals.

Example: Third-Party-Owned

Public Parking Garage

- A third-party charging company contracts with a public parking garage owner to install and operate DC fast chargers in exchange for garage space
- Third party pays
  - Chargers, installation, operation and maintenance
  - Electric bill and network fees
- Third party receives
  - Revenue generated through driver billing and advertising partnerships
- Parking garage receives
  - No up-front or ongoing costs
  - New EV driver customers
- Results
  - Parking garage owner develops plan to install chargers at all facilities
  - Owner markets itself as sustainability leader

Who Pays? Third-Party Owned

Organization

Receives:

- Lease payment from charging provider ($)
- No upfront capital costs ($$$ to $$$$)
- No monthly service fee ($$$ to $$$$)

Charging Provider

Pays:

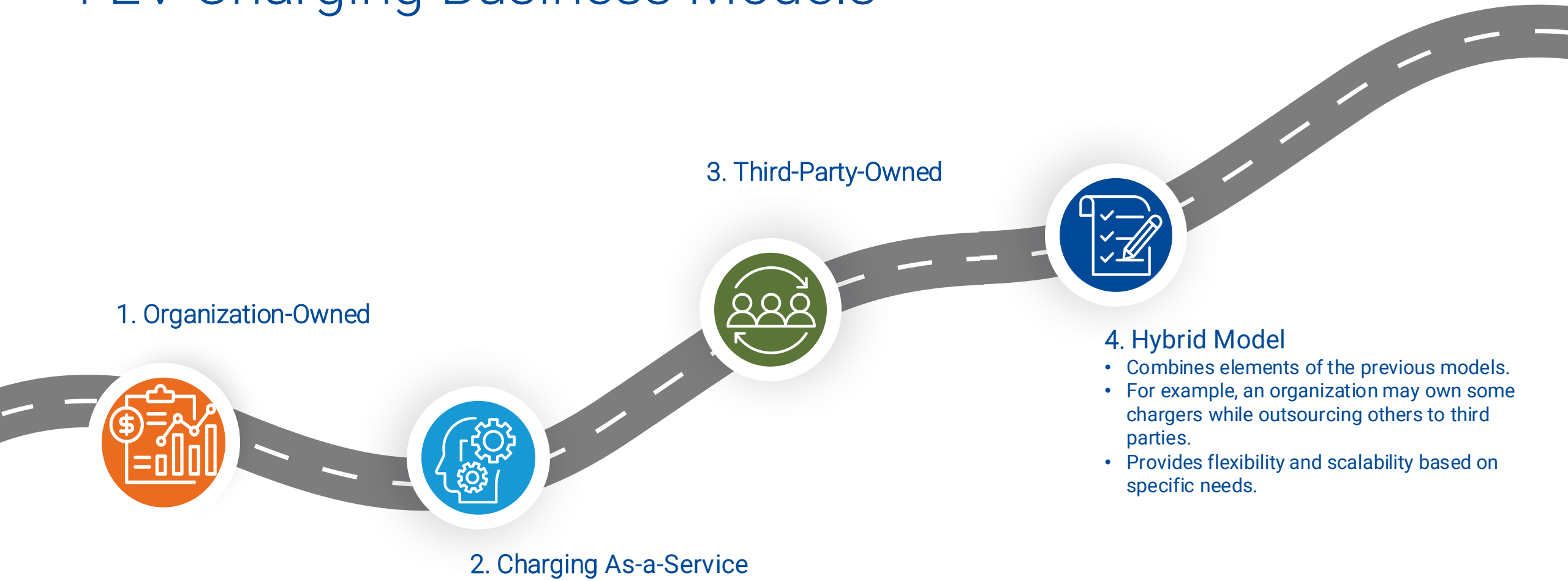
- Chargers, installation, and maintenance ($$$$)
- Electric bill and network fees ($$)

Receives:

- Rebate funds from utility/state ($$ to $$$)
- Billing revenue from drivers ($$ to $$$)
- Revenue from advertising partnerships ($$)

The organization's initial capital costs are minimized with potential revenue from least payment.

4 EV Charging Business Models



1. Organization-Owned

2. Charging As-a-Service

3. Third-Party-Owned

4. Hybrid Model

- Combines elements of the previous models.
- For example, an organization may own some chargers while outsourcing others to third parties.
- Provides flexibility and scalability based on specific needs.

Hybrid Model

1 – Organization

Purchase, installs, and owns chargers. Pays electric bill.

2 – EV Charging Stations

Provide charging services.

3 – EV Users

Pay for charging.

4 – Organization

Revenue shares with Service Provider.

5 – Service Provider

Monitors, operates and maintains chargers.

Shared costs and revenue between the organization and a service provider.

Hybrid Model

Opportunities:

- Balance between local control and outsourcing
- Greater flexibility; control over key aspects while leveraging external expertise for key tasks
- Operational expenses can be reduced vs. a fully organization-owned model
- Easily scaled in response to market, technology advancements, or changing business needs

Challenges:

- Complex management requires clear communication and defined responsibilities
- Revenue sharing requires detailed contractual negotiations
- Integration issues may occur between outsourced services and the organization's internal systems
- Potential conflicts with third party if not managed through clear agreements and performance metrics

Provides flexibility for organization
and allows them to leverage outside expertise

Example: Hybrid Model

Apartment Community

- Apartment owner purchased and installed chargers
- Owner pays
  - Electric bill
  - Third party to monitor, manage and maintain chargers
- Results
  - Owner markets apartment's sustainable amenities
  - Attracts new tenants who drive EVs
  - Increases their net operating income potential by raising leases to cover costs
  - Avoids day-to-day operations

Who Pays? Hybrid Model

Organization

Pays:

- EV charging stations and installation ($$$$)
- Electric bill ($$)
- Fee for network, maintenance, monitoring and management to charging provider ($$)
- Billing fee to charger provider ($)

Receives:

- Rebate funds from utility/state ($$ to $$$)
- Driver billing revenue from service provider ($$ to $$$)

Charging Provider

Pays:

- Driver billing revenue to organization ($$ to $$$)

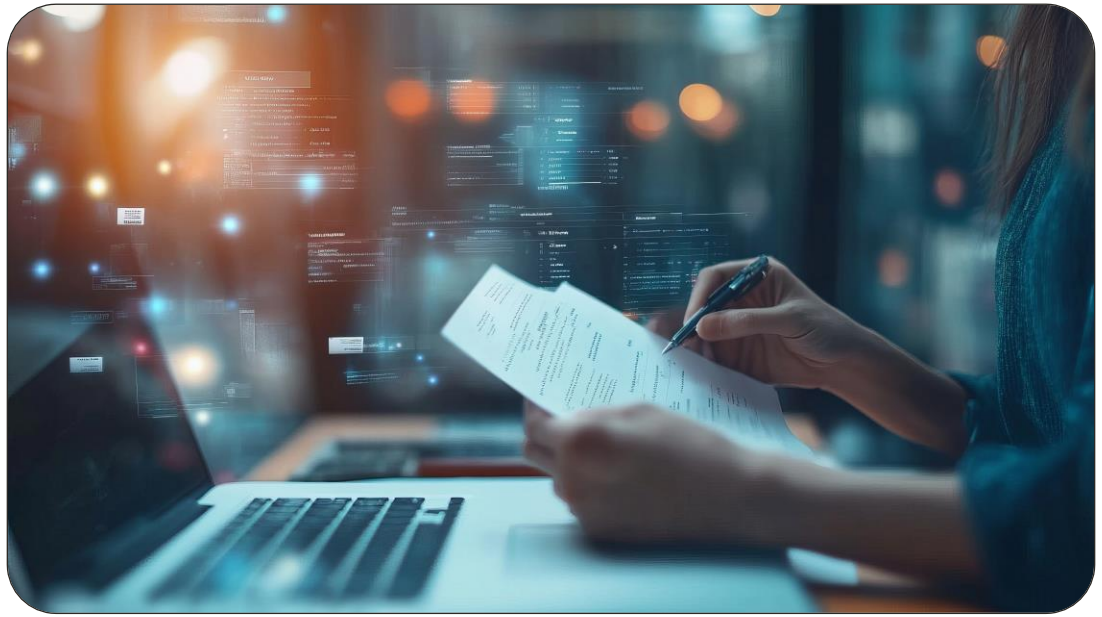
Receives:

- EV charging station sales payment from organization ($$$$)
- Fee for network, maintenance, monitoring, and management of chargers from organization ($$)
- Billing fee from organization ($)

Organization profitability depends on the energy dispensed.

Utilities: Rates, Demand Charges & Rebate Programs

Utility Rates and Demand Charges



- Utility rates - cost the customer pays for metered electricity at a location.
- Key commercial utility rate components:
  - Electricity price per kWh consumed
  - Time of Use periods and rates
  - Demand Charge for the greatest peak power (kW) consumed per month
- High kW demand from DC fast chargers impacts overall costs
- Some utilities offer commercial demand charge “holidays”
- Understand utility rates to manage charging operation costs

Goal – Optimize electricity for charging with the speed and amount of time required for charging.
Results – Reduced electricity costs.

Utility Rebate Programs – EV Chargers

- Utilities offer rebates for installing EV chargers
- Cover a percentage of the total costs
- Offsets significant portions of initial purchase, installation and sometimes ongoing costs
- Increased rebates often provided for underserved communities
- Requirements:
  - Networked charging equipment to gather and share data
  - On-site displays, signage and notifications on pricing and rates
- Contact local utility

Government Incentives

Government Incentives

Federal Incentives

Departments of Energy and Transportation Grants:

- Funding opportunities for research, development, and deployment of EV infrastructure.

IRS Tax Credits:

- Provides tax credits for purchasing and installing EV charging equipment.
- Tax exempt entities can benefit through direct pay program

Federal programs may change.

California Energy Commission

California Electric Vehicle Infrastructure Project (CALeVIP):

- Offers rebates and grants for installing Level 2 and DC fast chargers throughout state.

Communities in Charge

- Offers incentives for installing Level 2 community charging equipment.

LA County Area Grants & Rebates

- Funding opportunities in Los Angeles County area to increase EV infrastructure.
- Air Quality Management Districts provide incentives

Explore incentives to reduce costs and accelerate the deployment of EV charging infrastructure.

Many incentives can be stacked.

Submit Winning Incentive Applications

Submit Winning Applications

- Align Projects with Incentive Requirements
  - Dedicate someone to track you meet all the listed eligibility requirements
  - Set yourself up for success with grant/rebate stacking – 2+ applications will need to be submitted
  - Tailor your application to highlight how the project aligns with the goals of the funding program
- Produce Comprehensive Documentation:
  - Provide detailed project plans, budgets, timelines, and code compliance efforts
  - Be sure to include compliance with technical specifications and local building codes
  - Some utilities require a percentage of design complete before submitting for an incentive

Be Results Driven

- Demonstrate Project Impact
  - Highlight the environmental and community benefits of your project
  - Showcase how the project promotes any sustainability and equity requirements
  - Describe how the funding is a catalyst to future EV charging projects
- Leverage Your Expertise:
  - Collaborate with consultants or organizations experienced in grant writing and incentive applications
  - Utilize all available resources and training to enhance and optimize the quality of your application

Utility Make-Ready Rebate Considerations

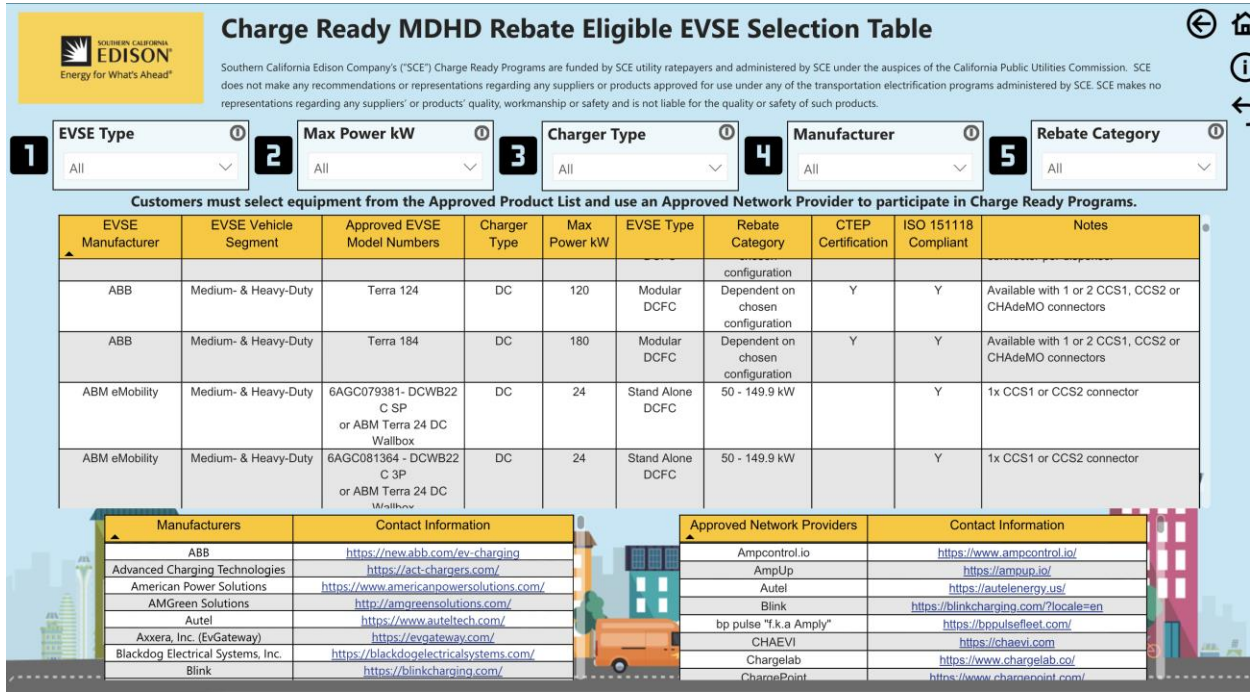
- Coordination with Utility Provider:
  - Engage with your utility as early as possible to discuss their requirements and timelines
  - Submit high quality and complete materials
  - Ensure necessary permits and approvals are obtained
- Understanding Make-Ready Requirements
  - Include project location, DAC status, site details, charging station specs, project timeline, and milestones
  - Compliance with electrical codes and safety standards is mandatory

Other Utility Make-Ready Considerations

- Streamlining the Make-Ready Process
  - Create a clear plan with steps and responsibilities
  - Know some rebate programs require approved contractors for make-ready work
  - Work with experienced contractors familiar with utility protocols
  - Document expenses according to the rebate program requirements so you can get timely reimbursement

These make-ready considerations ensure a smooth installation and help to maximize incentives and benefits.

Choosing a Charger



Charge Ready MDHD Rebate Eligible EVSE Selection Table

Southern California Edison Company's ("SCE") Charge Ready Programs are funded by SCE utility ratepayers and administered by SCE under the auspices of the California Public Utilities Commission. SCE does not make any recommendations or representations regarding any suppliers or products approved for use under any of the transportation electrification programs administered by SCE. SCE makes no representations regarding any suppliers' or products' quality, workmanship or safety and is not liable for the quality or safety of such products.

1 EVSE Type: All | 2 Max Power kW: All | 3 Charger Type: All | 4 Manufacturer: All | 5 Rebate Category: All

Customers must select equipment from the Approved Product List and use an Approved Network Provider to participate in Charge Ready Programs.

EVSE Manufacturer	EVSE Vehicle Segment	Approved EVSE Model Numbers	Charger Type	Max Power kW	EVSE Type	Rebate Category	CTEP Certification	ISO 151118 Compliant	Notes
						configuration			
ABB	Medium- & Heavy-Duty	Terra 124	DC	120	Modular DCFC	Dependent on chosen configuration	Y	Y	Available with 1 or 2 CCS1, CCS2 or CHAdeMO connectors
ABB	Medium- & Heavy-Duty	Terra 184	DC	180	Modular DCFC	Dependent on chosen configuration	Y	Y	Available with 1 or 2 CCS1, CCS2 or CHAdeMO connectors
ABM eMobility	Medium- & Heavy-Duty	6AGC079381- DCWB22 C SP or ABM Terra 24 DC Wallbox	DC	24	Stand Alone DCFC	50 - 149.9 kW		Y	1x CCS1 or CCS2 connector
ABM eMobility	Medium- & Heavy-Duty	6AGC081364 - DCWB22 C 3P or ABM Terra 24 DC	DC	24	Stand Alone DCFC	50 - 149.9 kW		Y	1x CCS1 or CCS2 connector

Manufacturers	Contact Information
ABB	https://new.abb.com/ev-charging
Advanced Charging Technologies	https://act-chargers.com/
American Power Solutions	https://www.americanpowersolutions.com/
AMGreen Solutions	http://amgreensolutions.com/
Autel	https://www.auteltech.com/
Axxera, Inc. (EvGateway)	https://evgateway.com/
Blackdog Electrical Systems, Inc.	https://blackdogelectricalsystems.com/
Blink	https://blinkcharging.com/

Approved Network Providers	Contact Information
Ampcontrol.io	https://www.ampcontrol.io/
AmpUp	https://ampup.io/
Autel	https://autelenergy.us/
Blink	https://blinkcharging.com/?locale=en
bp pulse "f.k.a Amply"	https://bppulsefleet.com/
CHAEVI	https://chaevi.com
Chargelab	https://www.chargelab.co/
ChargePoint	https://www.chargepoint.com/

Source: SCE Charge Ready MDHD Rebate Eligible EV Charger Selection Table

Utilities like SCE and LADWP require chargers are chosen from their lists to participate in their rebate programs.

Utility rebate programs provide robust lists of EV chargers that are UL-Listed and qualified for safety.

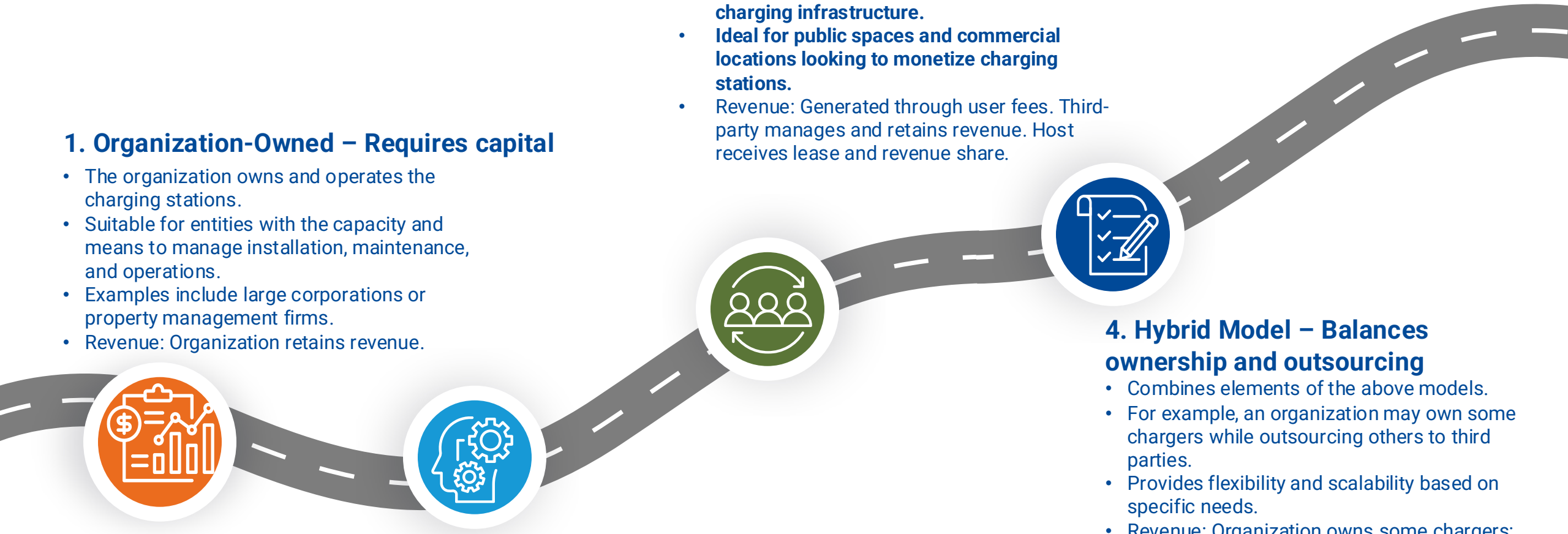
Many rely on organizations like the Electric Power Research Institute to vet and maintain lists of the latest certified chargers.

Key Take-aways

Key Take-aways

1. Organization-Owned – Requires capital

- The organization owns and operates the charging stations.
- Suitable for entities with the capacity and means to manage installation, maintenance, and operations.
- Examples include large corporations or property management firms.
- Revenue: Organization retains revenue.



2. Charging-as-a-Service – Transfers operational risk

- Third-party providers install, own, and maintain the chargers.
- Revenue: Organizations pays a recurring subscription or usage fee.

3. Third-Party-Owned – Minimizes capital

- **Independent companies own and operate the charging infrastructure.**
- **Ideal for public spaces and commercial locations looking to monetize charging stations.**
- Revenue: Generated through user fees. Third-party manages and retains revenue. Host receives lease and revenue share.

4. Hybrid Model – Balances ownership and outsourcing

- Combines elements of the above models.
- For example, an organization may own some chargers while outsourcing others to third parties.
- Provides flexibility and scalability based on specific needs.
- Revenue: Organization owns some chargers; outsources others for maintenance and revenue.

Resources

Resources

Approved EPRI Charging Lists

SCE (https://epri.co/vpl-sce)

LADWP (https://www.ladwp.com/sites/default/files/2024-12/2024_Residential_EV_Rebate_Product%20List_English_111524_Rev1x%20kb.pdf)

California EV Infrastructure Incentives

Cal eVIP Program CALeVIP

Communities in Charge Program Communities in Charge - California's market accelerating, light-duty electric vehicle infrastructure incentive project

Federal – EV Charging Funding

Joint Office of Energy and Transportation Joint Office of Energy and Transportation

CFI Discretionary Grant Program CFI - Environment – FHWA

Federal – EV Charging Tax Credit

Alternative Fuel Vehicle Refueling Property Tax Credit
Alternative Fuel Vehicle Refueling Property Credit | Internal Revenue Service

Alternative Fuel Property Tax Credit for Tax-Exempt Entities
Tax-Exempt Entities and the Alternative Fuel Vehicle Refueling Property Credit

Questions & Answers

- Type your questions in the Q&A
- Today's recording and slides will be available at:

  https://isd.lacounty.gov/electric-vehicles-and-charging-stations/

- Register for Training Series Webinars Parts 3-5
  - Regulations, Ordinances, and Implementation (April 3)
  - Permitting (April 23)
  - Site Design, Energization, and Operation (May 15)

Thank You!

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