



# Electric Vehicle Solutions

Rethinking Energy.  
Advancing Tomorrow.

# Electric Vehicle Charging is a Journey...



## Pioneer in the Electric Vehicle consulting sector.

Electric Vehicle charging is a journey, not a project. Turtle is dedicated to supporting our customer partners in designing their solution.

With substantial experience in EV, our expert team is well-versed in the nuances of electric vehicle technology, governmental regulations, and collaborations with utilities.

Our expertise lies in assisting businesses in achieving improved cost efficiency and a seamless transition towards sustainable electrification.



**TURTLE**   
Rethinking Energy. Advancing Tomorrow.

# Four core offerings for your EV journey



## Consulting Services

Our consulting services cater to businesses in the process of transitioning to electric vehicles. Our offerings include fleet assessments, infrastructure evaluations, utility coordination, incentive administration, and regulatory compliance guidance.

## Studies

We offer a host of site evaluation studies.

- Utility capability assessment.
- Circuit Power automation and design
- Integration of renewables and energy storage.

## Infrastructure Planning

Planning for EV includes decisions beyond power. We can coordinate structural assessments, video, communications, lighting and security.

## Policy Consulting

Collaborating with governmental agencies and policymakers, we offer insights and counsel regarding EV-related policies, incentives, and regulations.

# Turtle differentiators created by what we heard from our customers



**EV  
Consulting  
Services**

**EV  
Fleet  
Electrification**

**EV Charging  
Infrastructure  
Planning**

**EV Government  
and Policy  
Consulting**

## Customized Solutions...

We understand that each business is unique. Our tailored approach ensures that your EV adoption strategy aligns with your operational needs, budget constraints, and timeline.

## Comprehensive Guidance...

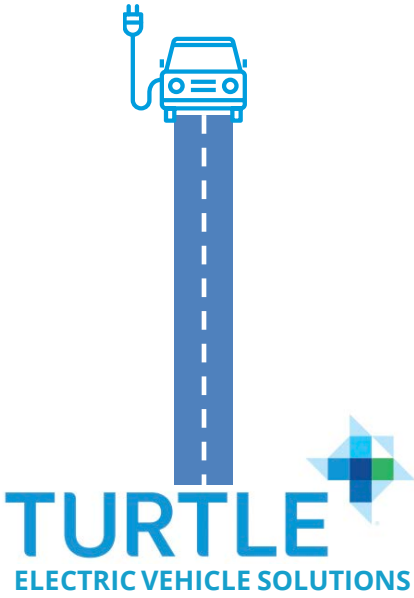
From initial consultation to implementation and beyond, Turtle is by your side every step of the way. We provide ongoing support and updates to industry changes

## Budget-driven Approach...

Our services are designed to deliver tangible results. By optimizing tax incentives and utility partnerships, we help you achieve substantial cost savings while contributing to a greener environment.

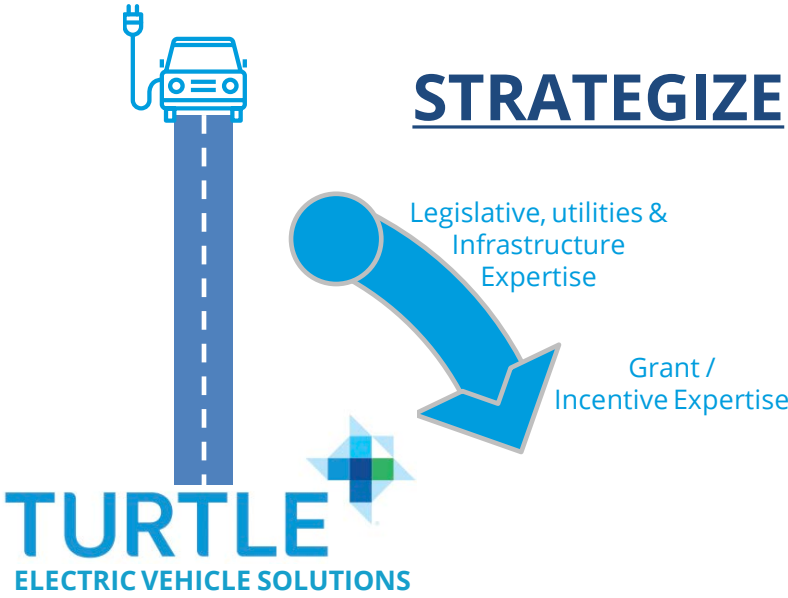
# Turtle Electric Vehicle Solutions

End-to-end Solution Partner



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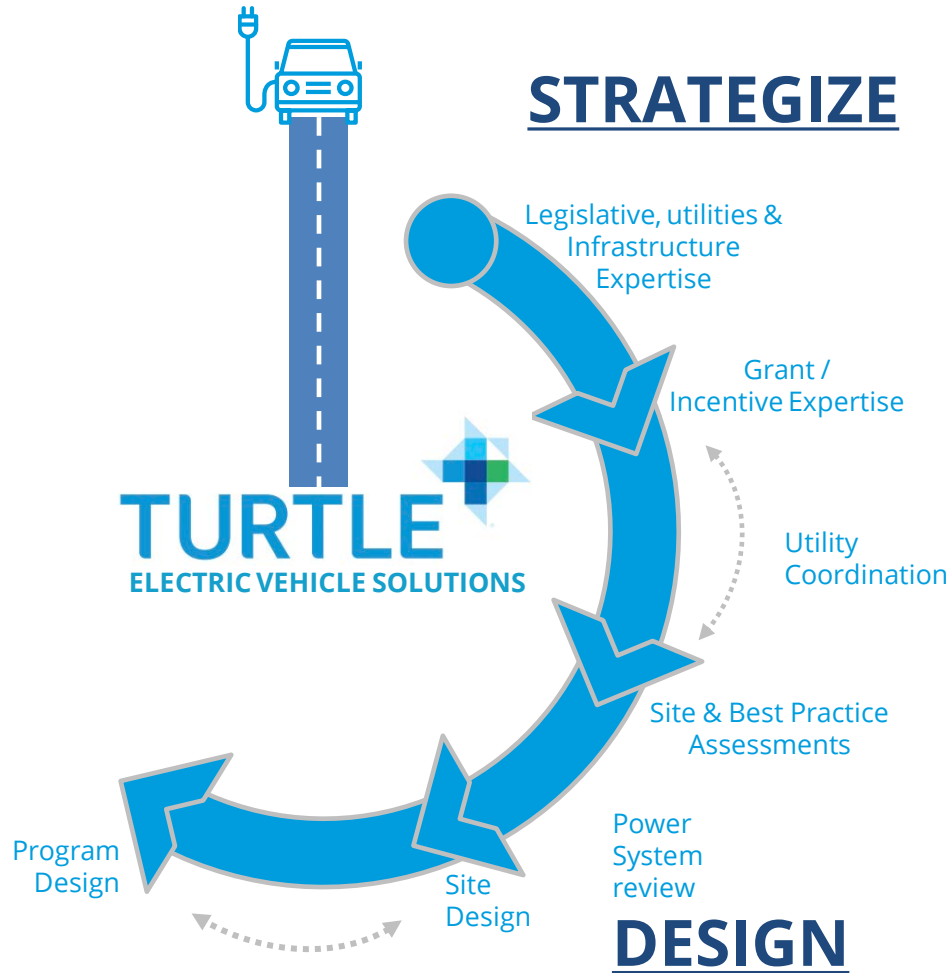


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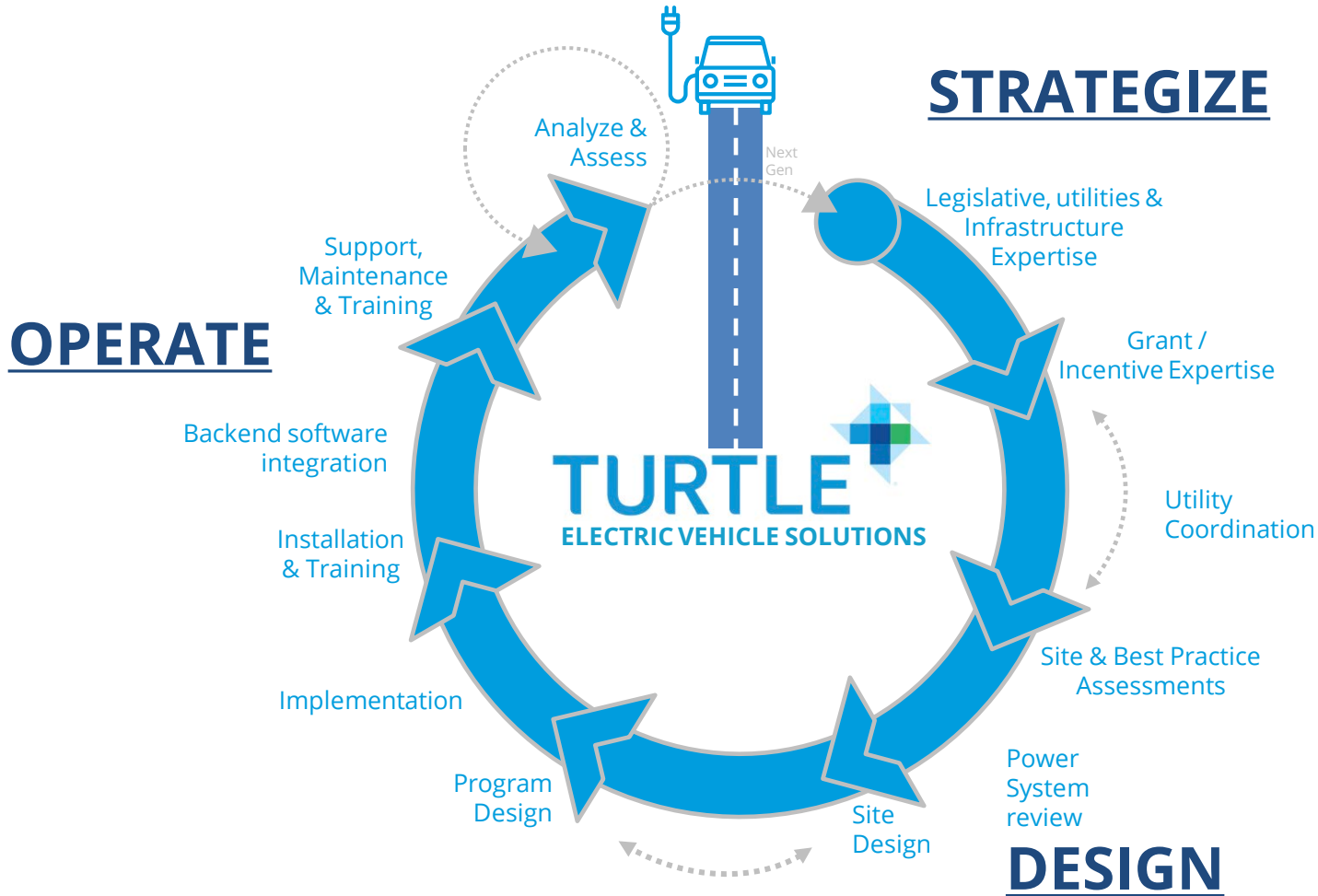
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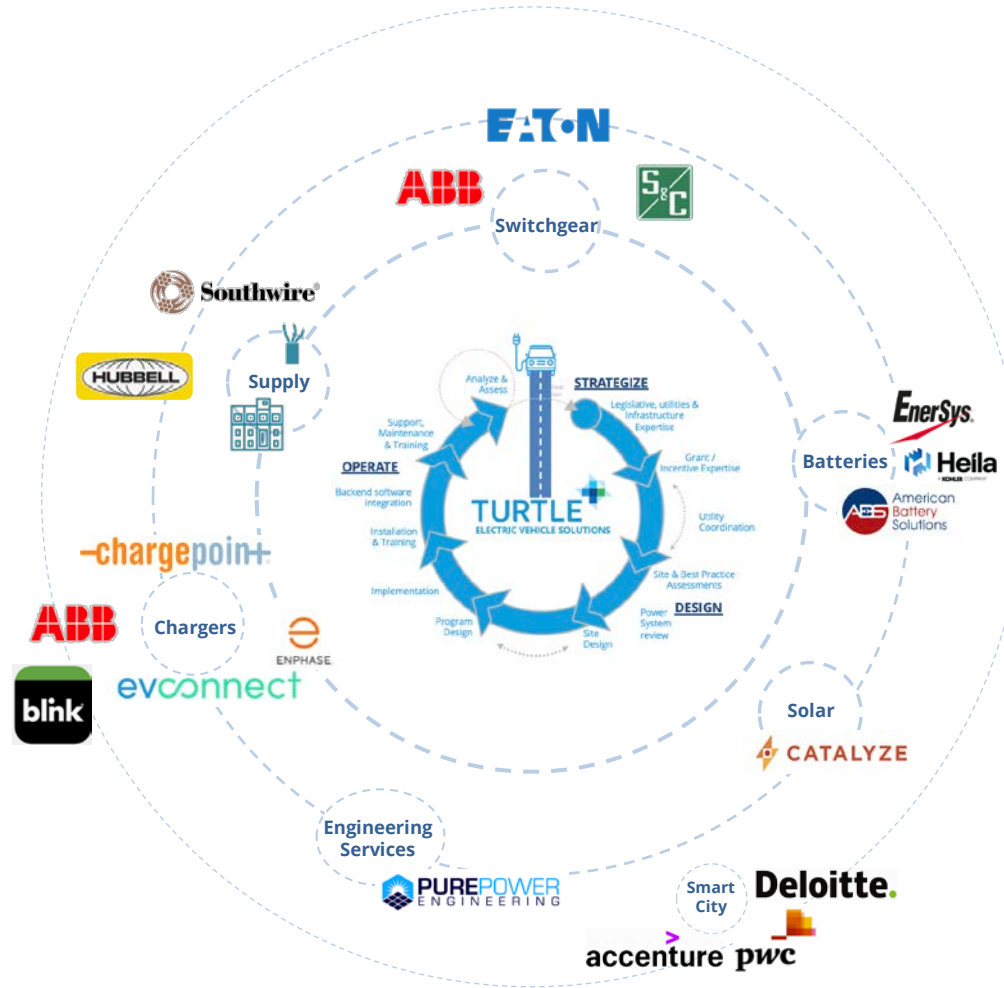
End-to-end Solution Partner





# Leveraging our world class partner ecosystem

100+ years of radical collaboration





**Planning for electrification will require both internal and external assessment of your fleet and its operation.**

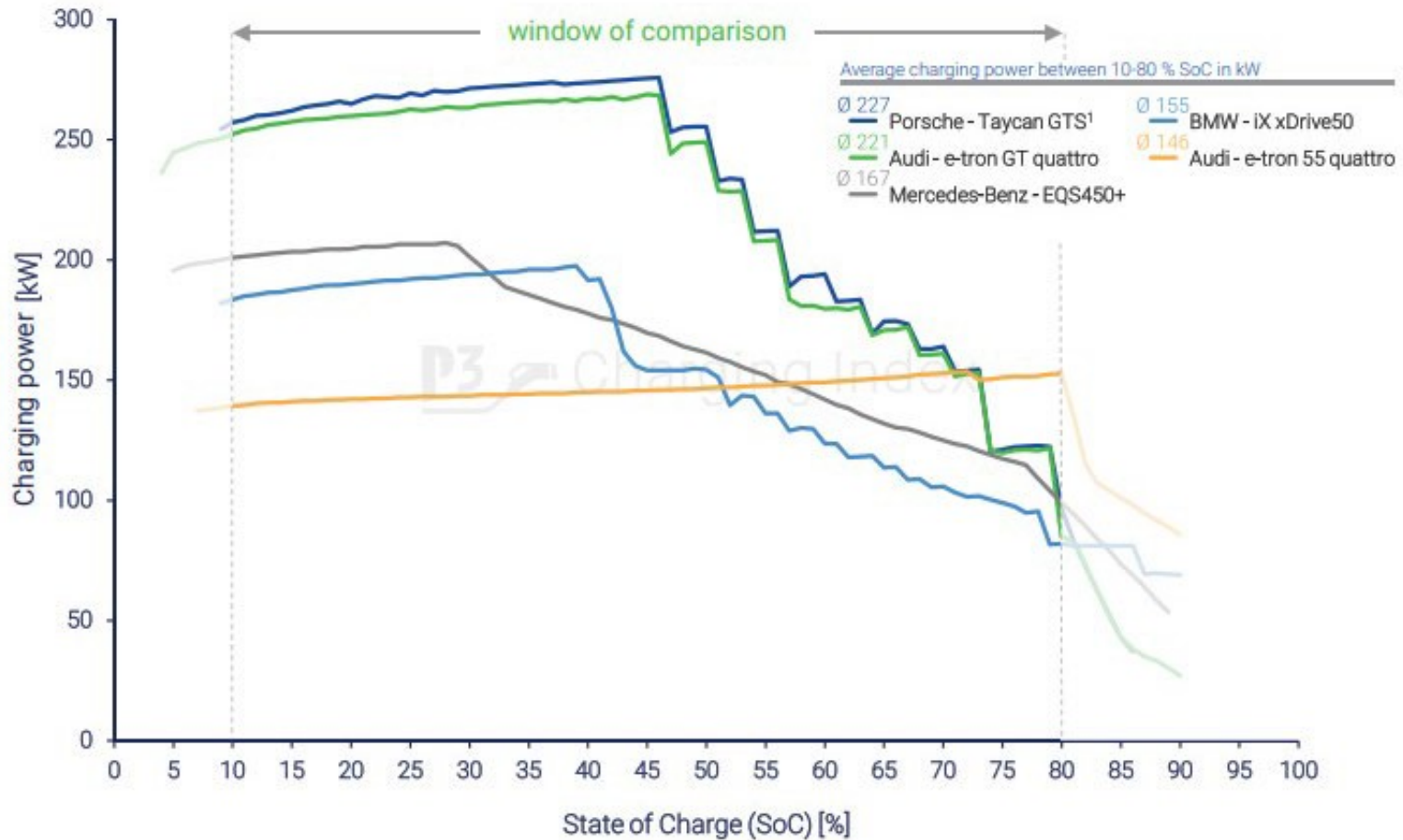
**Turtle Electric Vehicle Solutions provides the guidance to build a solid foundation.**

**Through understanding of the variables, we can help you design a cost effective and efficient fleet that can grow with your business.**



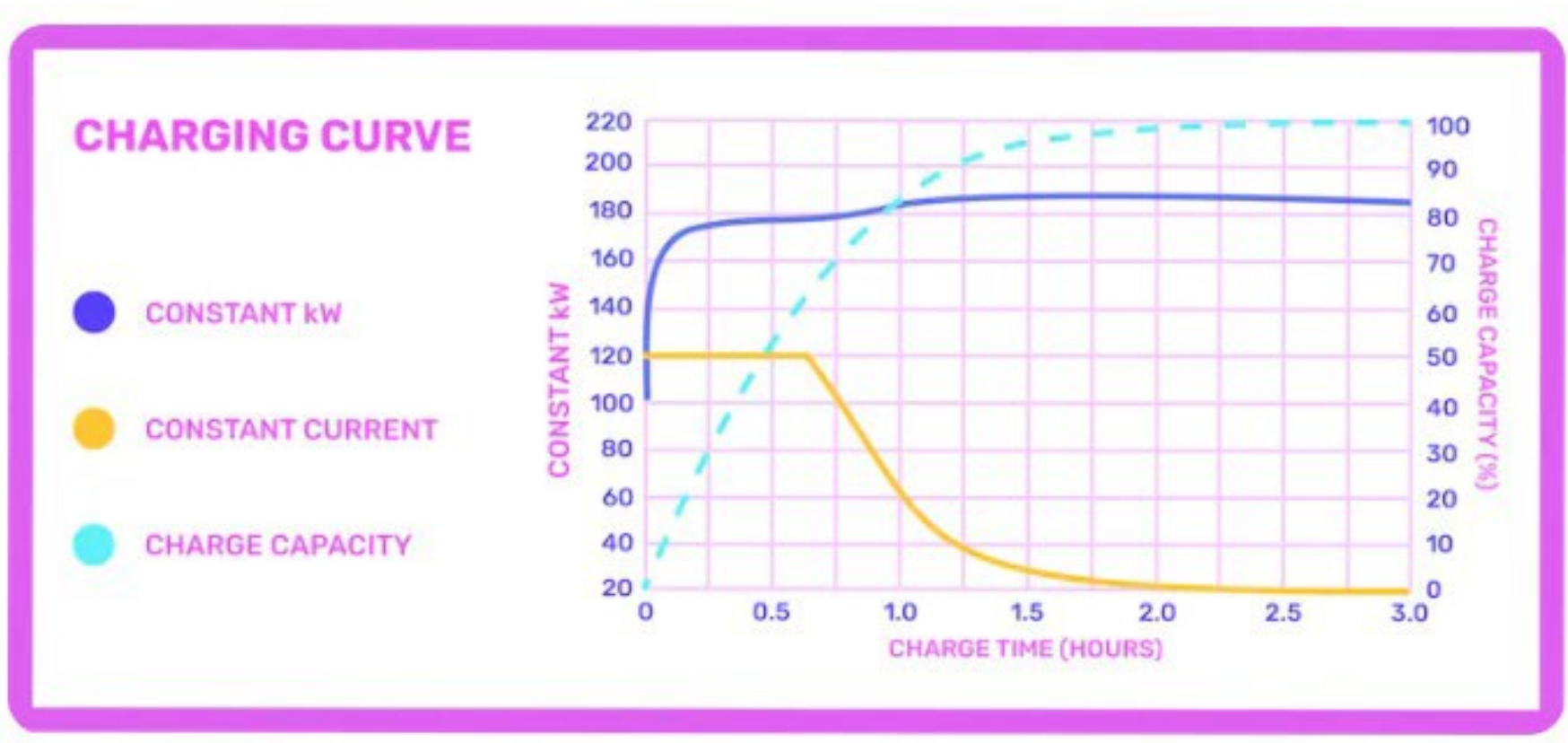
# Phase One: Evaluation

EV Charging is not the same across vehicles

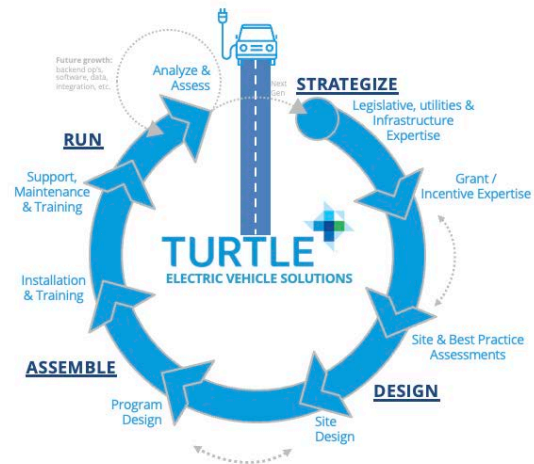


# Phase One: Evaluation

## EV Charge curve effects



# Phase One: Evaluation

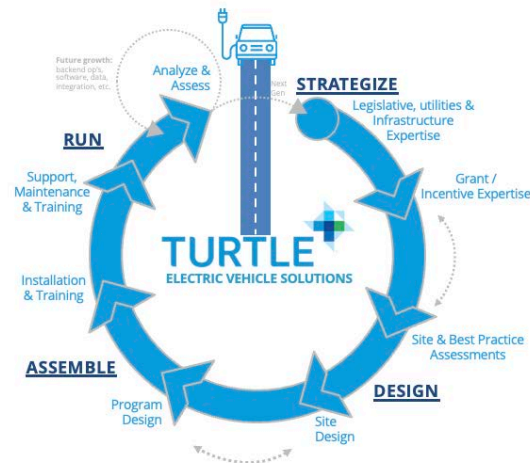


# Phase One: Evaluation



## 1. Evaluating The EVs

- What features in my fleet that I need in the EV equivalent?
- What is the range of my routes?
- What is my cost per mile/route?



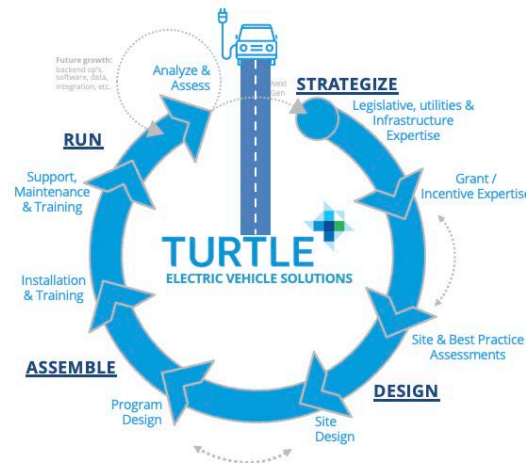


# Phase One: Evaluation



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### Core Turtle Expertise

#### Tax Incentive Optimization:

Dedicated team scours federal, state, and local tax incentives to identify opportunities that align with your business goals. We ensure you make the most of available tax benefits, maximizing your ROI.

#### Utility Coordination:

Turtle acts as your liaison, navigating the complexities of utility relationships, and facilitating effective communication with utility providers to streamline the integration of EV charging infrastructure. We ensure your business capitalizes on advantageous utility rates, demand management strategies, and charging infrastructure grants.

# Phase One: Evaluation

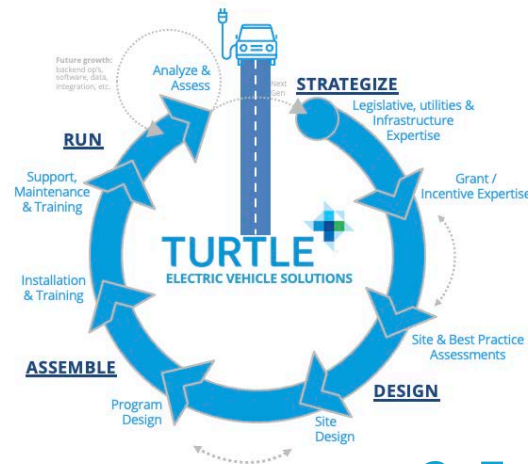


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**Core Turtle Expertise**

Infor to be included here  
detail here



## 2. Evaluating Infrastructure

- What How many chargers will I need
- How much power do I need?
- Where will I install my chargers??
- How do I future-proof my infrastructure investment?



# Phase One: Evaluation

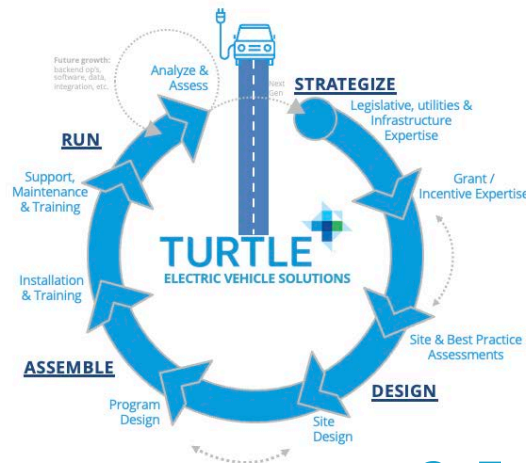


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## 3. Operating The EV's

- How do I ensure the EV's are charged?
- How do I ensure the EV's stay charged?
- How do I control electricity costs?
- What maintenance do need to budget for?



## 2. Evaluating Infrastructure

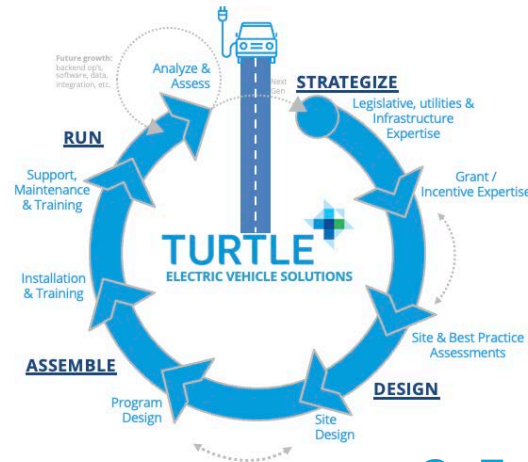
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# Phase One: Evaluation

## Questions about the fleet



### 1. How many total vehicles today?

*What about in 10 years?*

### 2. What types of vehicles?

*What Class, what Features?*

### 3. What types of Routes?

*Longest routes, shortest routes, specific vehicles for certain routes?*

*What are the current cost per mile to operate by fuel?*

*What is the timeline for transition?*

*Do we have the Skills to manage?*

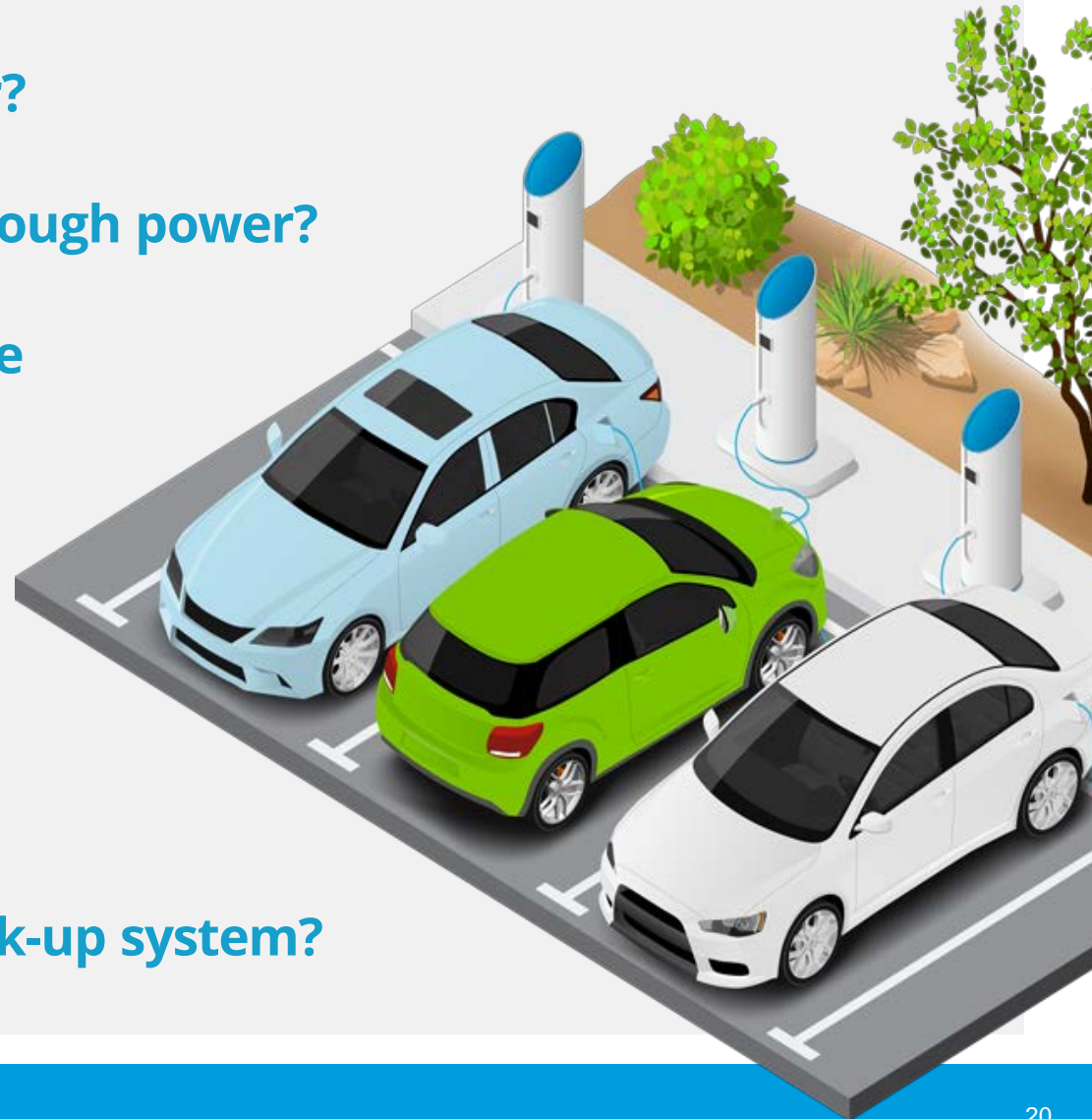


# Phase One: Evaluation

## Questions about the site

1. Do I have enough power?
2. Does the Utility have enough power?
3. Where will I store/charge the vehicles?
4. How do I coordinate with landlord?
5. Will this site support my growing fleet?
6. Do I need an energy back-up system?

*Load shaving? Back feeding?*



# Phase One: Evaluation



## The Site



1. Do I have enough power?
2. Does the Utility have enough power in the area?
3. Where will I store/charge the vehicles?
4. How do I coordinate with landlord?
5. Will this site support my growing fleet?
6. Do I need an energy back-up system?  
*Load shaving? Back feeding?*

## The Fleet



### 1. How many total EV's do we need today?

*What about in 10 years?*

### 2. What types of vehicles?

*What Class, what Features?*

### 3. What types of Routes?

#### Additional questions

*Longest routes, shortest routes, specific vehicles for certain routes?*

*...What are the current cost per mile to operate by fuel?*

*...What is the timeline for transition?*

*...Do we have the Skills to manage?*



# Foresight into Infrastructure design

## Fundamentals of Dwell time



### Determine charging time required for each EV to succeed

Examine which vehicles can be electrified most easily based on how long they dwell, compared to how much they drive.

### Determine the number of charging points required per depot

Evaluate whether simultaneous or staggered charging to determine fleet needs.

### Calculate Charging Load

Calculate charging energy load based on modeled charging cycles.

Evaluate multiple scenarios to allow for exceptions



# Infrastructure and capacity needs

Design to current and future needs of your fleet



- 1. How long to convert your fleet to EV?**
- 2. Based on today's calculations do I have the infrastructure I need?**
- 3. What growth am I building into this site?**
- 4. What are some worst-case scenario's.**

# Utility requirements

## Key questions



**Is there an EV rate?**

**What are the TOU parameters?**

*Are any seasonal?*

*What are the Demand Charges?*

**What are the Demand Charges?**

**What is my load factor and at what kWh does it kick in?**

**What voltage is running along my building?**

**How much capacity is there?**

**How much room is on my existing transformer?**

**Determine charging time required for each EV to succeed?**



# Infrastructure Plan Considerations

Plan for reality not perfections



**Public charging may not as reliable option for many operations**

Utilize it for emergencies

**Start small with a pilot & use learning to solidify your deployment plan**

**Assess the impact of a power failure on your operations**

Plan for backup

# Infrastructure Plan Considerations

Plan for reality not perfections



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# Multi-Unit Residential (MUR)



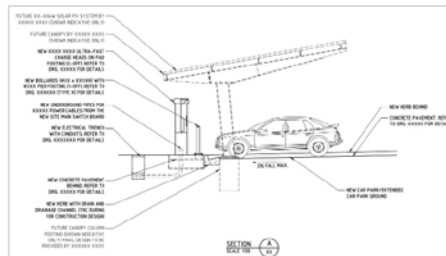
Today



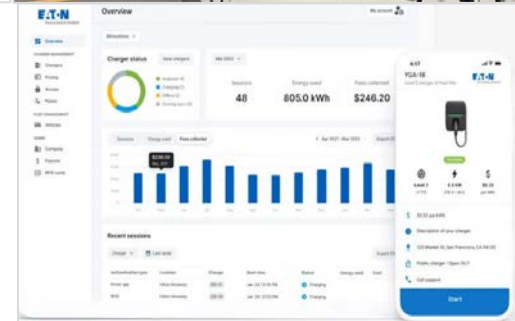
“What happens when my 250 unit property has 100+ Electric Vehicles?”



Rethinking Tomorrow



Blueprint



Operationalize

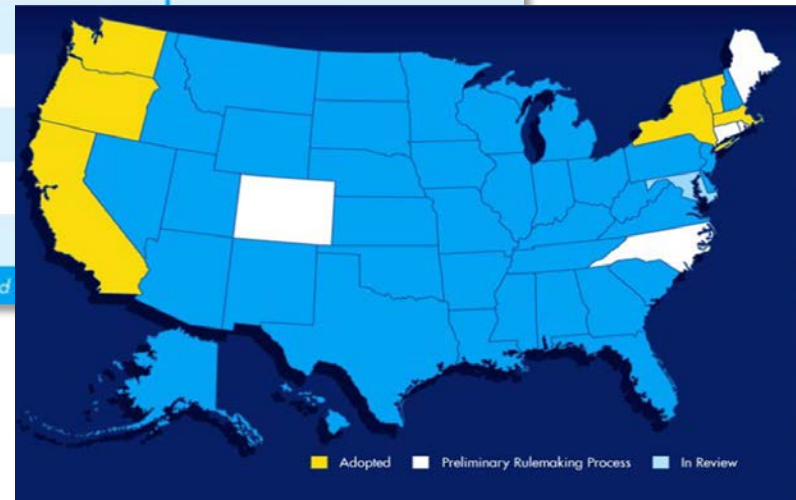
# ACF & ACT work in Tandem.

## Which states are adopting ACT



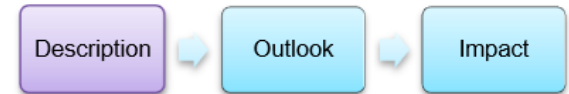
State	Status	Beginning MY	Fleet Reporting Date
California	Adopted	2024	April 1, 2021
Oregon	Adopted	2025	June 30, 2022
Washington*	Adopted	2025	Not required
New Jersey	Adopted	2025	April 1, 2023
New York	Adopted	2025	April 1, 2023
Massachusetts*	Adopted	2025	Not required
Vermont	Adopted	2026	Not required
Colorado	Draft Rule Language Released	2027	December 31, 2023
Maine	Preliminary Rulemaking Process	2026	Not required
Connecticut	Preliminary Rulemaking Process	-	
North Carolina	Preliminary Rulemaking Process	-	
Rhode Island	Preliminary Rulemaking Process	-	
DC	In Review	-	
Maryland	In Review	-	

\* Large entity reporting requirement is being adopted separate from ACT rule and





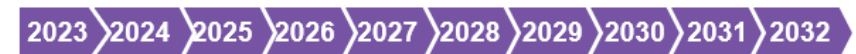
## Select production tax credits are phased out in 2032



### Tax credits

	Area	Tax credit
Input materials	Critical minerals*	10% of costs
	Battery electrode active materials	10% of costs
Batteries	Battery cells	\$35/kWh
	Battery modules**	\$10*/kWh
Applications	EVs***	\$7,500**
	Energy storage****	6% (base credit) Up to 30% + 10%

### Production tax credits' timeline for battery electrode active materials, cells and modules



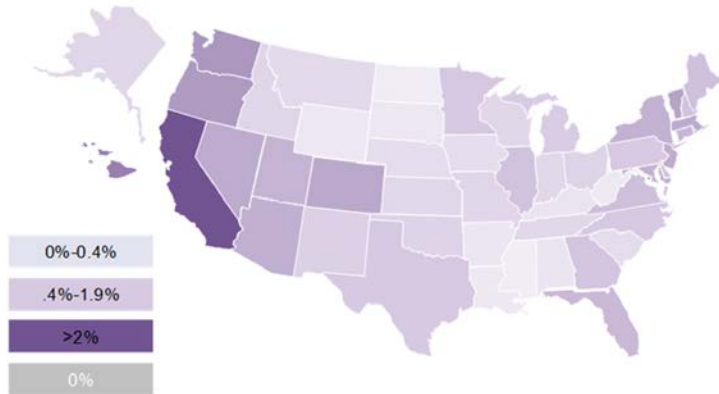
Source: BloombergNEF. Note: \*Critical minerals require mining or refining of the material in the US at specific purity levels. \*\* Battery module tax credit can go up to \$45/kWh for modules which do not use battery cells. \*\*\*EV credits include additional incentives for used clean vehicles and commercial clean vehicles, which are not directly tied to battery manufacturing in certain locations so have been removed from this table. \*\*\*\*Energy storage is eligible for additional credits of 10% energy community adder and 10% or 20% environmental justice adder, under specified provisions that will be further clarified by December 31, 2022.



EV Penetration by State

# US lags in EV share of sales

## US EV state fleet penetration, 2021



## Top 10 EV share of fleet by US state/region, 2021

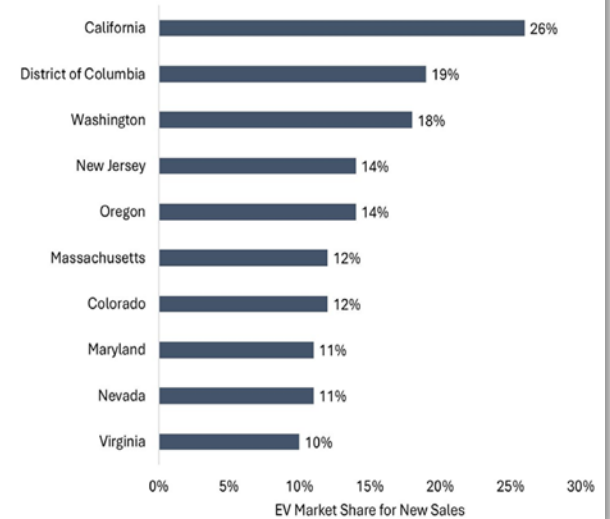
State/region	EV fleet share
California	2.5%
D.C.	1.9%
Hawaii	1.7%
Washington	1.3%
Oregon	1.3%
Vermont	1.1%
Colorado	1.0%
Massachusetts	1.0%
Nevada	1.0%
New Jersey	0.9%

Source: Department of Energy, Experian, BloombergNEF. Note: US state EV fleet registration at the end of 2021. EV is battery electric and plug-in hybrid electric vehicles

51 April 13, 2023

BloombergNEF

## EV Market Share for New Sales (Top 10 States) in Q2 2023



**California**  
**125k EV Cars**  
**Q2'23 \$200M**  
**in chargers**

**Mass.**  
**8000 Cars**  
**\$12M in**  
**chargers**

**370k EV sold**  
**in Q2 2023.**  
**Up 59% YOY**

# Turtle

## Electric Vehicle Solutions



**TURTLE**  
ELECTRIC VEHICLE SOLUTIONS

