

# 1. Executive Summary

## Initial Findings

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**Total Cost of Ownership**  
\$0.21 / mi

The estimated cost per mile of owning and operating each vehicle based on assumptions used to calculate the upfront costs (capex) and operating expenses

**Initial Investment**  
<\$2M

The upfront cost required to transition to an electrified fleet, including vehicle purchase and infrastructure setup.

**OPEX**  
<\$0.2M / year

The annual operating expenses associated with maintaining and running the electrified fleet.

**Est. Annual Emissions**  
76 tCO<sub>2</sub> / year

An initial estimate of the annual greenhouse gas emissions by from your all EV fleet assuming energy sourced from a utility provider.

Leke Services can help you better understand the electrification process and develop a more detailed plan

## 2. TCO for your fully electrified fleet should be around 2 million USD, with the bulk of the spend attributable to the vehicles

### Financials for your Electrified Fleet

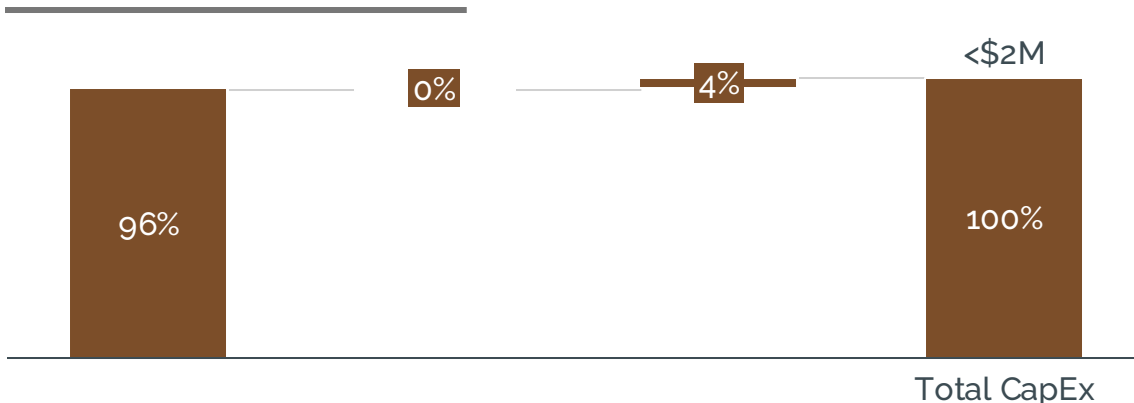
#### TCO<sup>1</sup>

\$2M  
(\$0.21 per mi)

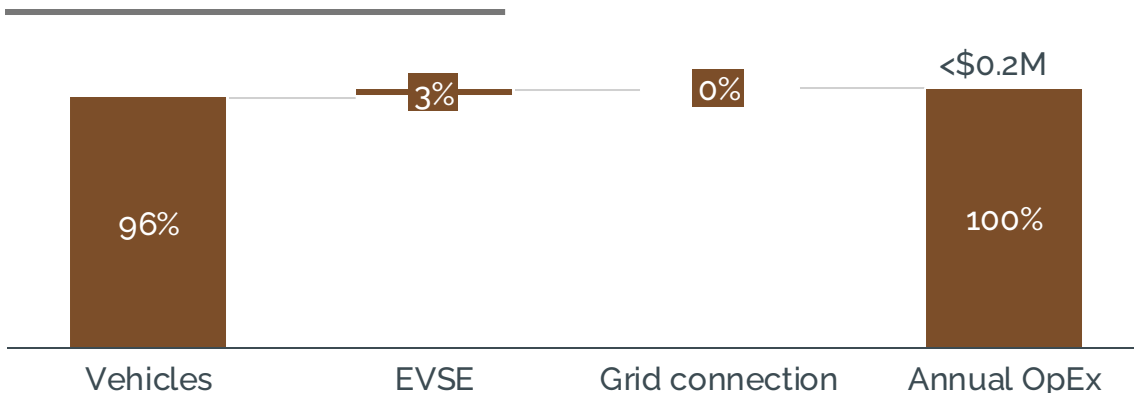
#### Assumptions

- Vehicles bought in year 0
- Period (years): 15
- Number of vehicles: 40
- Suggested chargers: 4
- Daily mileage: 50
- Charge window: 10p-10am
- Vehicle type: Light duty
- NPV Hurdle rate: 8%
- On-site charging without additional real estate costs
- New grid connection

#### Estimated CapEx



#### Estimated Yearly OpEx



#### Additional Insights

- Despite their relatively low costs, EVSE & Grid connection typically require the most lead time
- Fleets typically start with pilots to test operational needs
- It is prudent to spread vehicle purchases over many years. It can reduce risks to operations
- Due to limited availability of EVs & charging infrastructure, other alternative-fueled vehicles may be considered
- The grid connection can be supplemented with onsite energy generation and storage.

TCO: Total cost of ownership. CapEx: Capital expenses. OpEx: Operational expenses, EVSE: Electric Vehicle Supply Equipment (e.g., chargers),  
1 - TCO includes vehicle opex, capex only. OpEx does not include driver labor. CapEx includes max IRA incentives, and 30% residual value

# 3. Your fleet transition can be made more viable by leveraging several incentive options

Non-exhaustive examples shown below

Incentive	Description	Details
<b>Commercial Clean Vehicle Credit (IRA)</b>	Tax credit for businesses purchasing qualified electric and hydrogen fuel cell vehicles.	Up to <b>\$7,500</b> for light-duty vehicles and up to <b>\$40,000</b> for heavy-duty vehicles.
<b>Alternative Fuel Infrastructure Tax Credit</b>	Tax credit for up to 30% of the cost of installing alternative fueling equipment	Applicable for EV charging stations and hydrogen, natural gas, propane, and other alternative fuels.
<b>Clean Heavy-Duty Vehicle Program (IRA)</b>	Grants and rebates to replace heavy-duty ICE vehicles with zero-emission vehicles.	Priority given to fleets serving communities with poor air quality; includes funding for related infrastructure.
<b>Diesel Emissions Reduction Act (DERA) Grants</b>	Grants for projects that reduce emissions from diesel engines, including vehicle replacement with electric options.	Administered by the EPA; funds available for a range of emission reduction projects.
<b>Low or No Emission Vehicle Program</b>	Grants for the purchase or lease of zero-emission and low-emission transit buses and supporting facilities.	Administered by the Federal Transit Administration; available to state and local government entities.

## Additional Insights

There are also programs offered at a state level and from various utility companies.

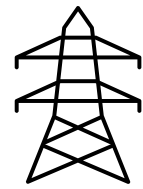
Examples:

- California: California Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP)
- PG&E EV Fleet Program: EV Fleet Program: a comprehensive program that encompasses incentives and rebates, site design and permitting, construction and activation

# 4. You can power your fleet using 3 main energy sources

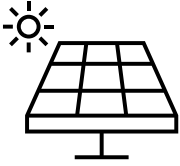
1000 kW

Required Grid Connection



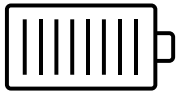
### Grid

- Fleet operators can leverage off-peak charging to cut costs and ensure operational efficiency
- Using the grid also facilitates seamless integration with existing infrastructure.



### On Site Generation

- Generating electricity on-site, often through renewables like solar or wind, reduces grid dependence, lowers long-term energy expenses, and supports sustainability goals.
- Can enhance energy security and resilience during grid outages.

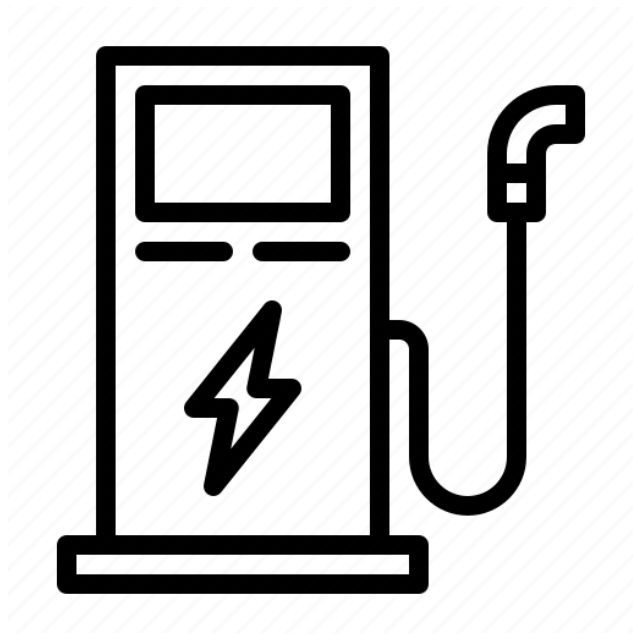


### Storage

- Energy storage systems, like batteries, store surplus electricity from low-demand periods or on-site renewables.
- This stored energy can be used for fleet charging during peak demand or low renewable generation, balancing supply, reducing grid peak loads, and ensuring uninterrupted operations.

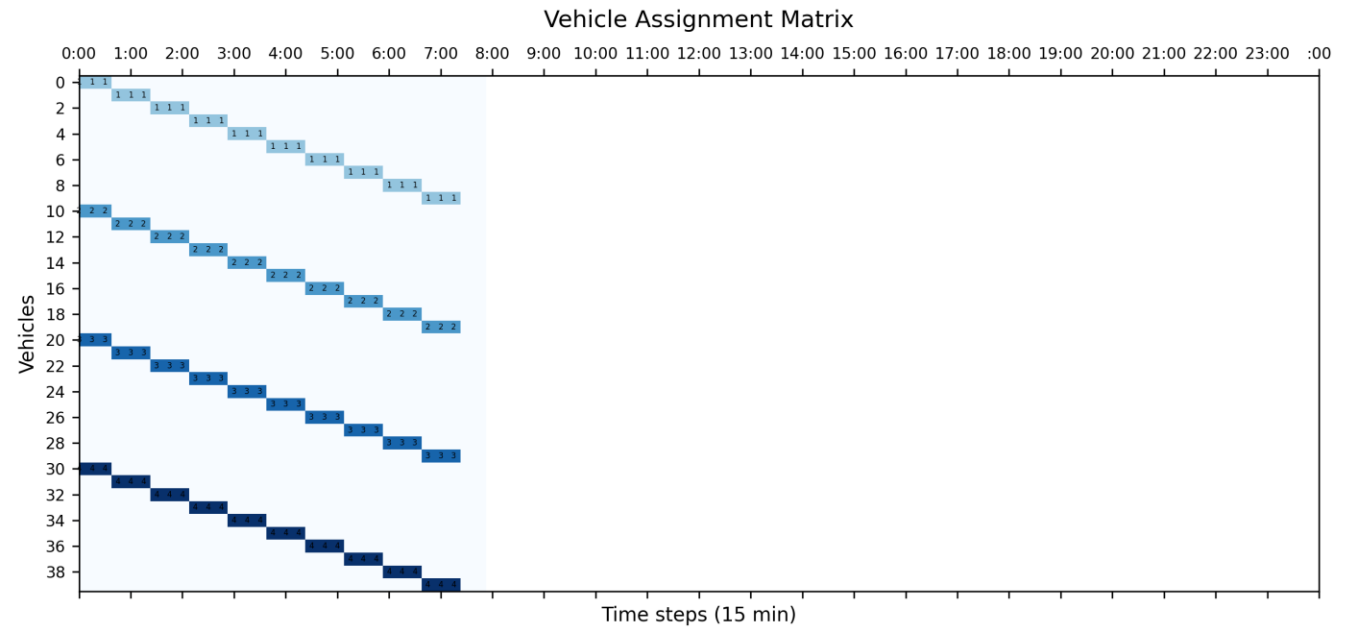
# 5. For your fleet size and charging window, 4 22-kW level 2 AC chargers are recommended

## AC Charger - 22kW



Number of chargers: 4

## Charging Schedule (for 40 vehicles)



Leke Services uses BrightMerge's software to help optimize charging for more efficient cost-savings

# 6. There are three main operational considerations as you electrify your fleet



## Driver Training

- Drivers need to understand the nuances of electric vehicle operation, including charging procedures, range management, and potential differences in vehicle handling and performance compared to traditional vehicles.
- Proper training ensures efficient and safe operation of the electric fleet, maximizing vehicle uptime and performance.



## Vehicle R&M

- Technicians need specialized training and tools to diagnose and service EVs effectively.
- Regular maintenance of battery health, electric drivetrain, and charging systems is crucial to ensure optimal vehicle performance, range, and longevity.
- Establish a robust maintenance program to minimize downtime and extend the operational life of your EV fleet.

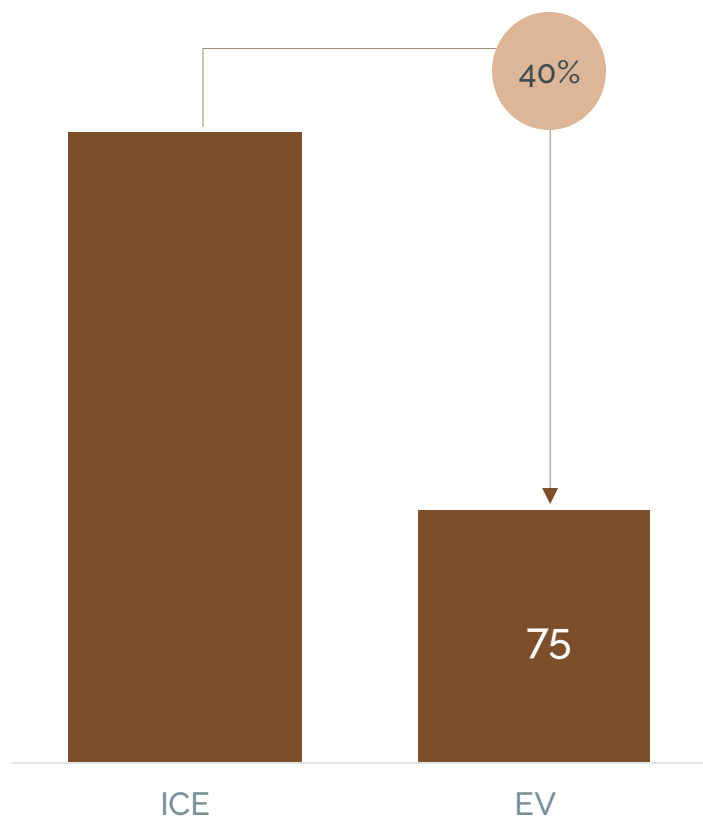


## EVSE R&M

- EV charging infrastructure requires regular maintenance to ensure reliability and efficiency.
- This includes routine inspections, cleaning, and testing of charging stations and related components.
- Technicians should be trained to troubleshoot, and repair charging equipment promptly to minimize downtime and ensure that charging stations are always operational.

# 7. Your fully transitioned EV Fleet (#40) is likely to reduce emissions by ~40%

## Annual Emissions (ICE vs EV), metric tons CO<sub>2</sub>



Assumes annual emissions of 4.6 metric tons per light duty vehicle, compared to grid sourced energy (which can go to zero with renewable energy sources).

## Additional Considerations

### Generation Source

Emissions reductions for both EV and ICE fleets depends heavily on the source of electricity generation, with renewable energy sources like solar and wind significantly lowering emissions

### Carbon Offsets

EV fleets can utilize carbon offsets to mitigate emissions even further and potentially generate revenue

### Lifecycle Emissions

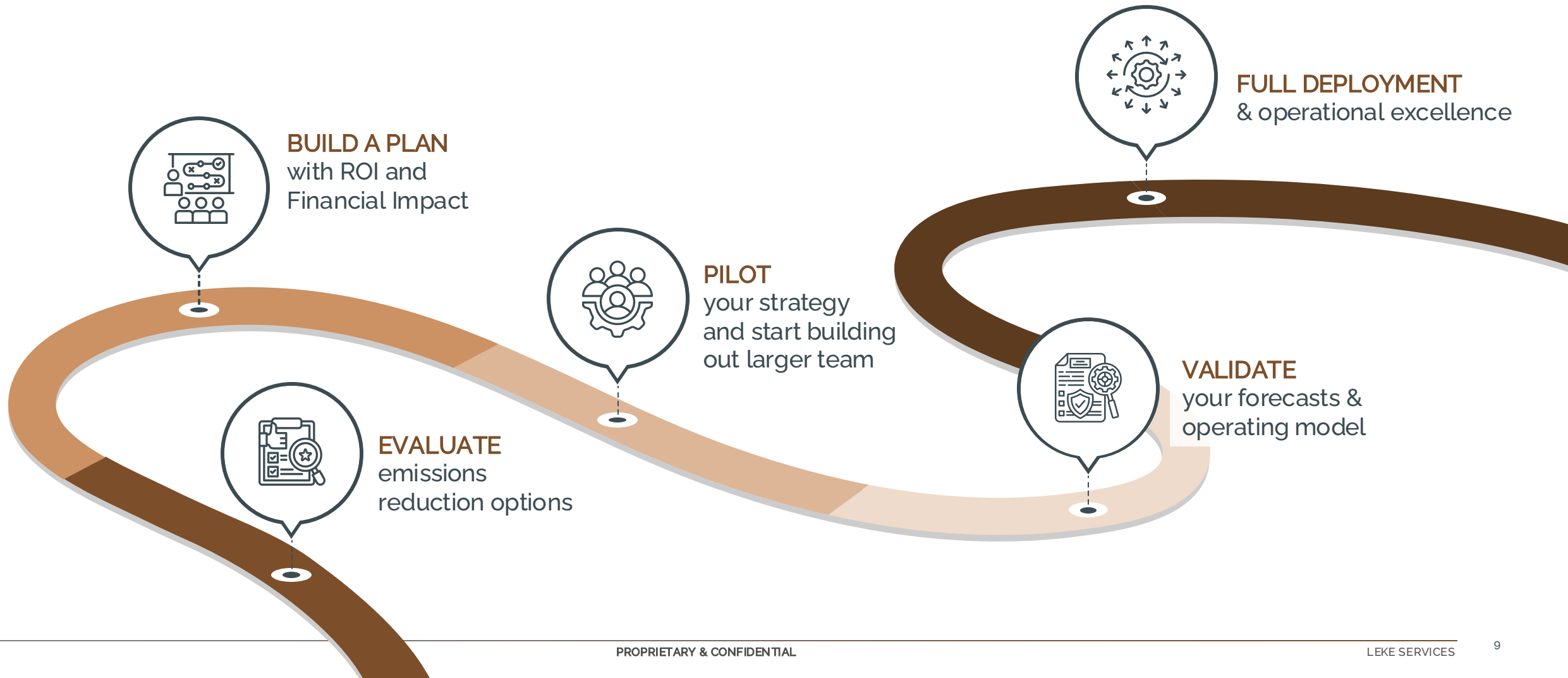
EVs generally have lower lifecycle emissions compared to ICE vehicles, considering factors like manufacturing impacts and emissions associated with fossil fuel extraction, refining, and combustion in ICE vehicles

# 8. Risks & Mitigation Strategies for Your Transition

Risk	Summary	Mitigation Strategy
<b>1</b> Upfront Costs	<ul style="list-style-type: none"><li>High upfront costs for purchasing electric vehicles and installing charging infrastructure may strain financial resources</li></ul>	<ul style="list-style-type: none"><li>Seek government grants, subsidies, or tax incentives available for EV adoption. Consider leasing options for vehicles to reduce initial capital outlay</li></ul>
<b>2</b> Training & Skill Gaps	<ul style="list-style-type: none"><li>Existing staff may lack expertise in EV technology, maintenance, and operational best practices, leading to potential downtime and inefficiencies</li></ul>	<ul style="list-style-type: none"><li>Implement a robust training program for fleet managers, technicians, and drivers covering EV technology, maintenance procedures, and safety protocols. Partner with EV manufacturers or training institutions for specialized training</li></ul>
<b>3</b> Battery Capability	<ul style="list-style-type: none"><li>Concerns over battery longevity, performance in extreme weather conditions, and potential degradation affecting vehicle reliability and operational uptime</li></ul>	<ul style="list-style-type: none"><li>Select vehicles with proven battery technology and warranties that cover degradation. Monitor and manage battery health through software solutions and predictive maintenance. Develop protocols for battery maintenance and temperature management in fleet operations</li></ul>
<b>4</b> Regulatory Uncertainty	<ul style="list-style-type: none"><li>Evolving regulations, standards, and incentives related to EVs may impact operational costs, compliance requirements, and investment decisions</li></ul>	<ul style="list-style-type: none"><li>Stay informed about local, state, and federal regulations regarding emissions, vehicle standards, and incentives for EV adoption. Maintain flexibility in fleet planning and budgeting to adapt to regulatory changes</li></ul>



# 9. Your path to zero emissions starts with evaluating which emissions reduction options make sense for you

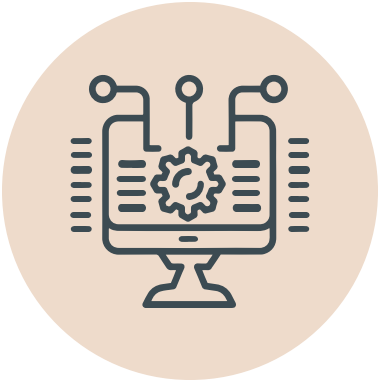


# 10. Leke Services has service models to meet you where you are.



## Consultation

Let us help you estimate your techno-financial needs based on your fleet & location info



## Software + support

Provide access, training, and support through creating scenarios using BrightMerge's tool



## Fleet transition plan

Help your team to develop a plan to reduce emissions to stay ahead of regulatory mandates

LEKE SERVICES



**E ŞEUN**

“THANK YOU” in Yoruba

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