Electrifying Commercial Trucking

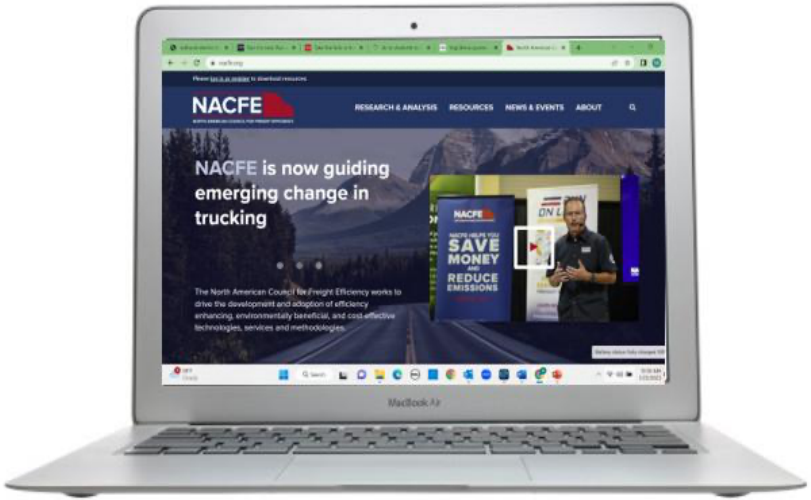
TEI, April 21, 2026

Mike Roeth, Executive Director

RUN ON LESS MESSY MIDDLE

NACFE
NORTH AMERICAN COUNCIL FOR FREIGHT EFFICIENCY

North American Council for Freight Efficiency



- Unbiased, fuel agnostic, non-profit
- Mission to double freight efficiency
- All stakeholders
- Scale available technologies, guide emerging change and Run on Less demonstrations.

www.NACFE.org

www.RunonLess.com

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IN PARTNERSHIP WITH

RMI
ENERGY. TRANSFORMED.

“Everything at NO Cost”

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2026 FISCAL SUPPORT

Gold

Shell, SCHNEIDER, TRANSTEX, pepsico (Food. Drinks. Smiles.), MICHELIN, Cummins, Lubrizol, ENERGY FOR EVERYONE propane, INTERNATIONAL, PENSKE, GEOTAB, PROLOGIS, DAIMLER

Silver

VOLVO, P.S.I. Pressure Systems International, Great Dane

Bronze

ORANGE EV, PITT OHIO SUPPLY CHAIN • LTL • TL, Sysco At the heart of food and service, The Aluminum Association, THERMO KING

Philanthropy

William + Flora Hewlett Foundation

climateworks FOUNDATION

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Market Segmentation

Vehicle Class	Market Segment
Class 2b-6	Vans & Step Vans 
Class 6	Medium-Duty Box Trucks 
Class 7 & 8	Regional Haul Return-to-Base *Short • Medium • Long* 
	Long Haul Over-the-Road 

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Vans and Step Vans

- Urban delivery and growing due to e-commerce.
- Classes 2b-6
- Low miles, dwell overnight for slow charging.
- Limited electricity needed.
- Amazon Rivian massive first deployments.

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ELECTRIC VANS & STEP VANS

For more detailed information on these lessons learned, click here.

Fleets are aggressively expanding their purchases of electric vans and step vans after successful pilot programs.

In addition to charging at a depot, vans and step vans also can be charged at home or at public charging locations.

Range is typically not a major factor in urban delivery vans and step vans.

Drivers love these simple and fun to drive vans and step vans.

Vans and step vans are the public face for zero emission trucking and electrifying the last mile is a key area of focus for many fleets.

Typically vans and step vans use Level 2 chargers, which is considered a slow charge.

E-commerce is spurring the rapid growth in the vas and step van market segment.

Electric vans and step vans are being operated in areas with cold winters and hot summers.

Vans and step vans are a big and somewhat easy market to scale.

Traditional and new OEMs are bringing innovative new vans and step vans to the market. Marketplace barriers are lower for new OEMs.

RUN ON LESS ELECTRIC

LESSONS LEARNED

What NACFE learned while conducting Run on Less – Electric

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Medium Duty Box Trucks

- Urban delivery. Shrinking volumes.
- Classes 5 and 6
- Low miles, can have single days with long miles.
- Dwell overnight for slow charging.
- Limited electricity needed.
- Other niche vocational trucks

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MD ELECTRIC BOX TRUCKS

For more detailed information on these lessons learned, click here.

Battery integration can take many forms.

In order to be valuable for medium-duty box trucks, public charging stations need to be bigger.

Training, training and even more training will be needed.

Expanded production capacity is needed for body builders and dealers.

The public will like medium-duty BEVs in their neighborhoods.

Drivers will love electric medium-duty box trucks.

Consolidation of truck OEMs is expected.

Predicting battery life is difficult with significant body loads.

New BEV OEMs are emerging frequently.

Application expansion will happen.

Charging ports on the trucks should be standardized.

Body integration will be new and challenging.

RUN ON LESS ELECTRIC

LESSONS LEARNED

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Freight Moves to Regional Haul

- Away from Truckload Over-the-Road sleeper trucking.
- Drivers return home
- Return to base
- Pony Express Freight
- Growth in Private, Dedicated and Less than Truckload.
- Helps alternatives due to infrastructure utilization.

https://runonless.com/run-on-less-regional/

ary

Run on Less – Messy Middle

RUN ON LESS MESSY MIDDLE

Run on Less – Messy Middle: Will bring clarity to long-haul decarbonization by focusing on heavy-duty Class 8 sleepers and day cabs in long-haul return-to-base and over-the-road duty cycles.

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Participating Fleets

Site Visits – Profiles' Development

Profile Videos Here

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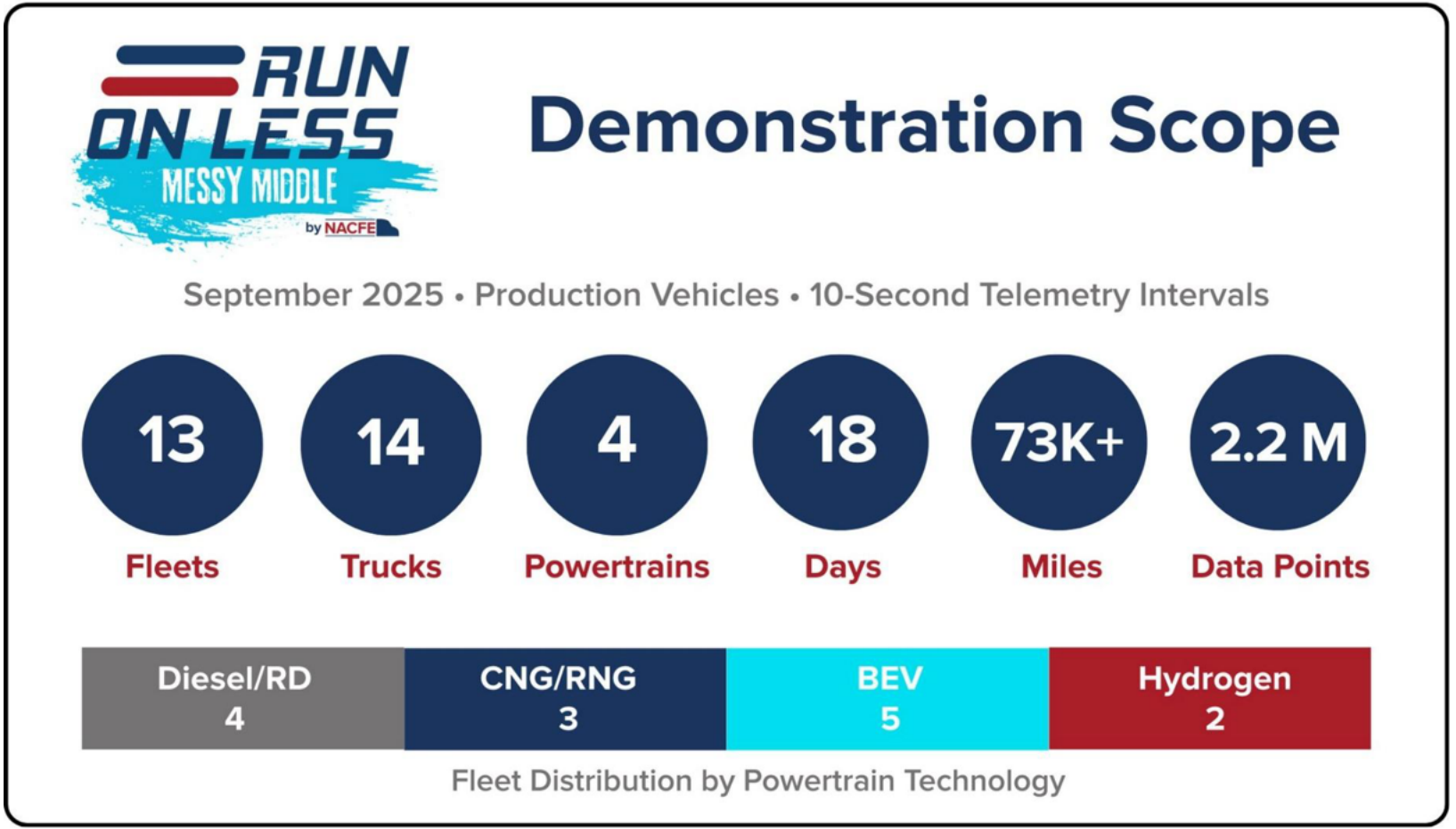
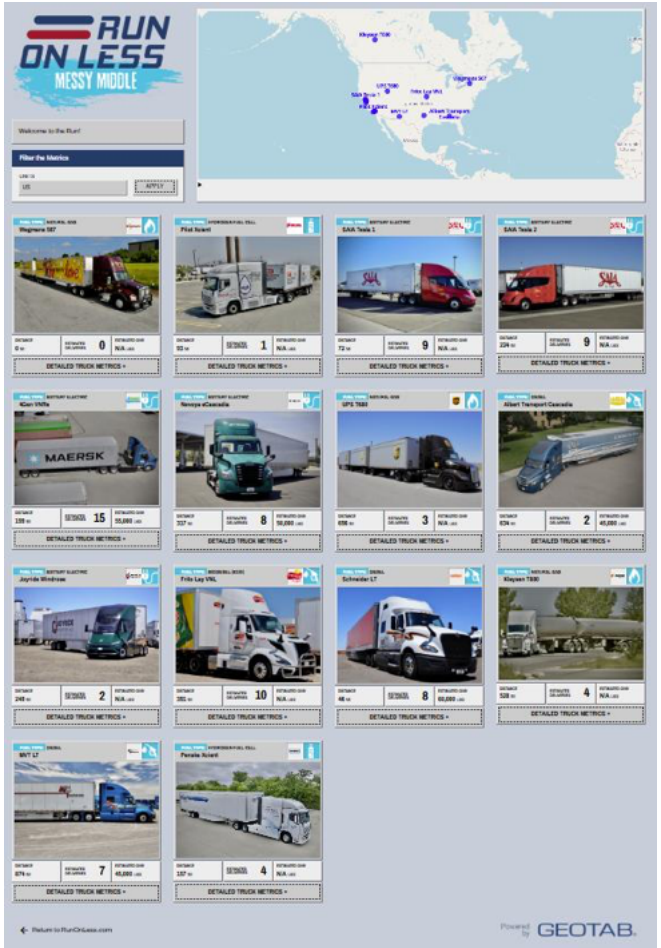
High Level Numbers



Actual Run



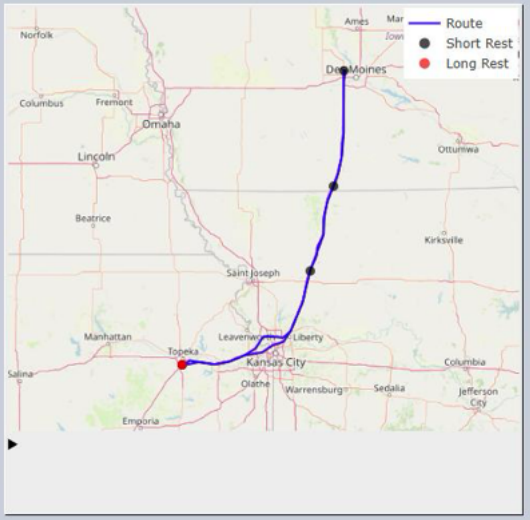
- 18 Days ended Sept 25th
- 14 Trucks
- Similar metrics for all four solution alternatives
- Select any fleet, units of measure & time period

Truck Metrics Here

NACFE

Results: Frito-Lay Biodiesel

RUN ON LESS
MESSY MIDDLE

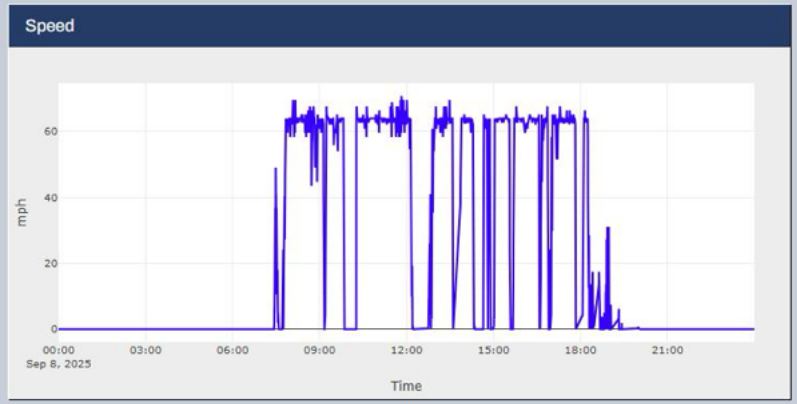


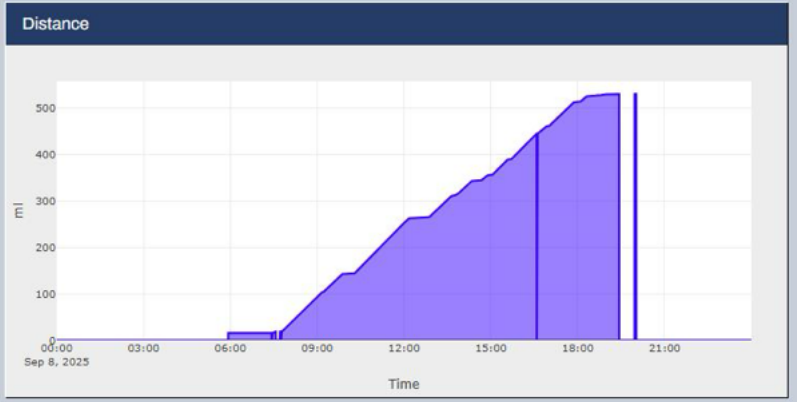
Filter the Metrics

FROM: Day 1 | TO: Day 1 | UNITS: US | APPLY

« RETURN TO INDEX | LINK TO THIS

DISTANCE	515 MI	ESTIMATED DELIVERIES	4	ESTIMATED GVW	N/A
TEMPERATURE	66 F	WIND	0 MPH N	CONDITIONS	CLEAR





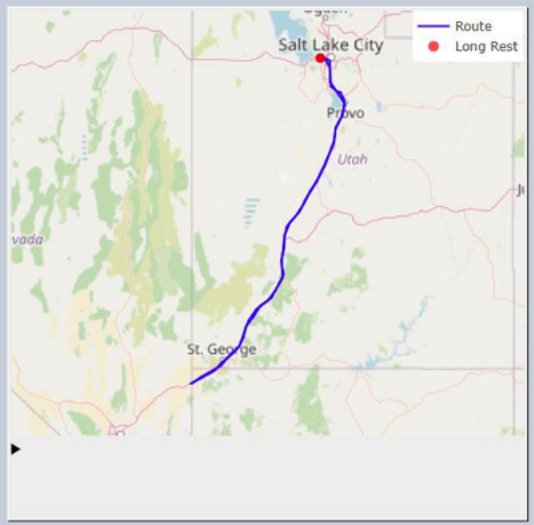
Long out and back – 515 miles
Nearly 100% cabon-free Biodiesel
9.5 MPG v. 7.0 Nat'l Avg

Results: UPS RNG

RUN ON LESS MESSY MIDDLE

FUEL TYPE: NATURAL GAS
UPS T680

DISTANCE	699 MI	ESTIMATED DELIVERIES	5	ESTIMATED GVW	N/A
TEMPERATURE	74 F	WIND	1 MPH W	CONDITIONS	CLEAR



Filter the Metrics

FROM	TO	UNITS	
Day 10	Day 10	US	APPLY

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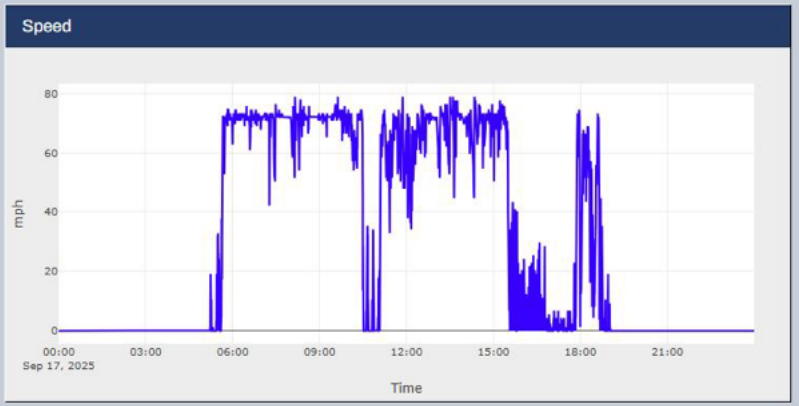
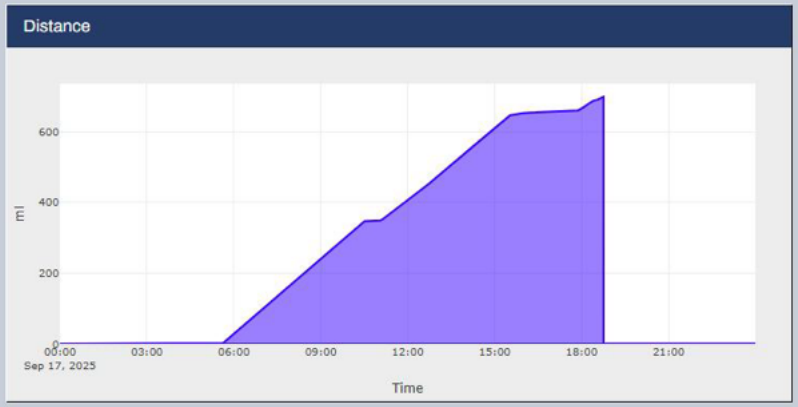




Very Long out and back – 699 miles

RNG 6.7 mi/DGE

v. 7.0 Nat'l Avg

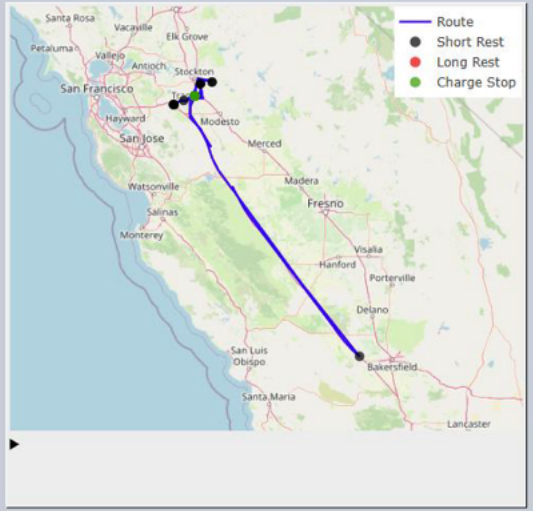
Results: SAIA BEV

RUN ON LESS MESSY MIDDLE

FUEL TYPE: BATTERY ELECTRIC

SAIA Tesla 2

DISTANCE	549 MI	ESTIMATED DELIVERIES	13	ESTIMATED GVW	N/A
TEMPERATURE	79 F	WIND	13 MPH W	CONDITIONS	CLEAR



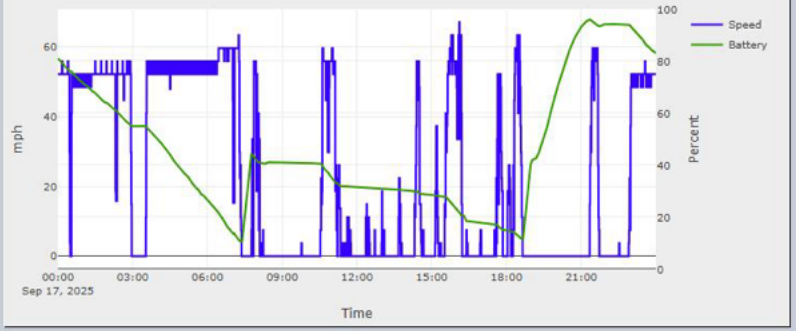
Filter the Metrics

FROM	TO	UNITS	
Day 10	Day 10	US	APPLY

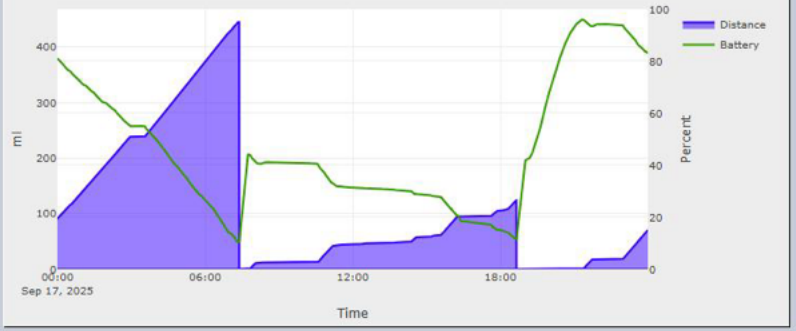
« RETURN TO INDEX

LINK TO THIS

Battery Charge and Speed

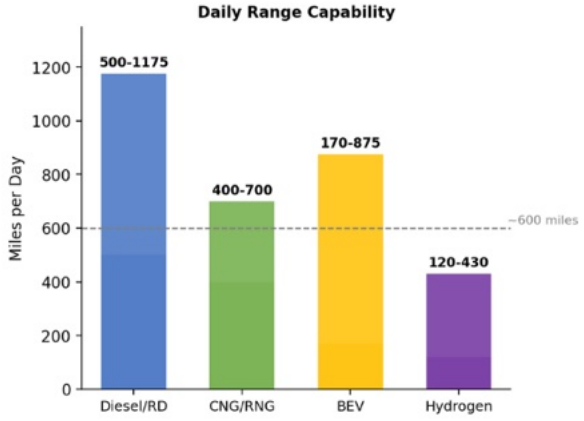


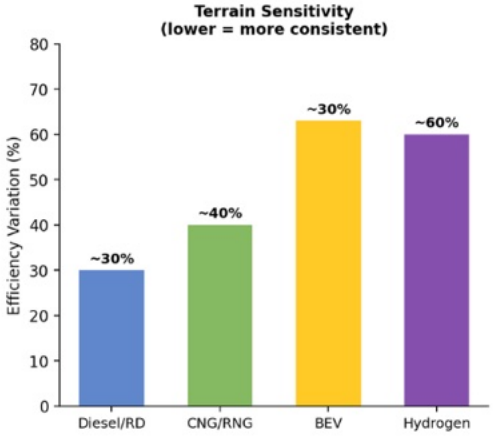
Battery Charge and Distance

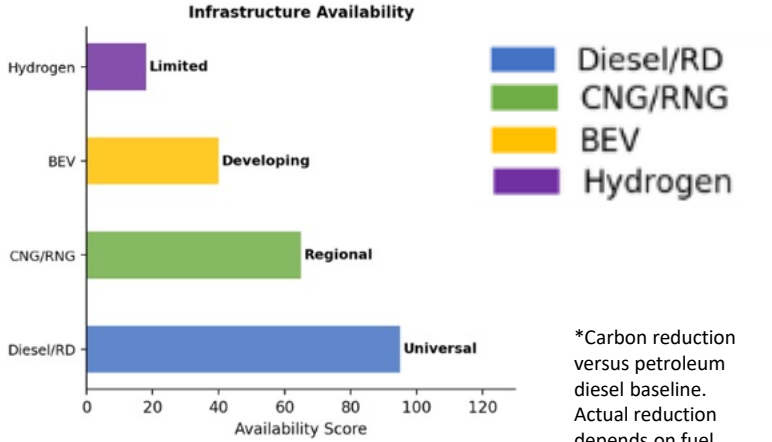


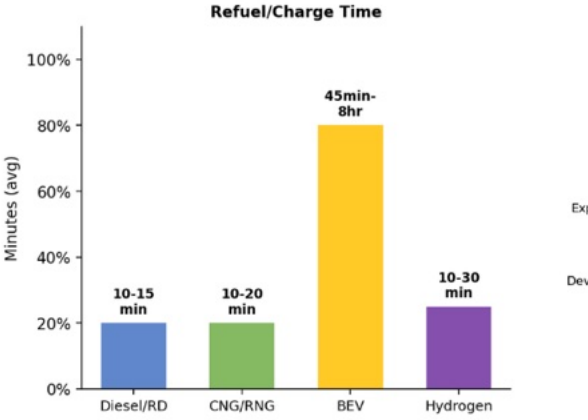
Slip seat, two shifts, LTL - Line haul and local delivery BEV 0.53 mi/kWh v. 7.0 Nat'l Avg

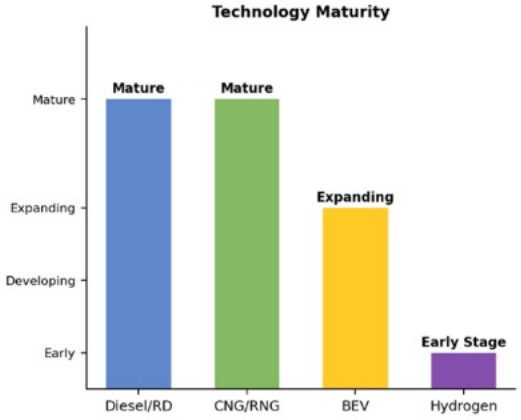
Technology Performance Comparison

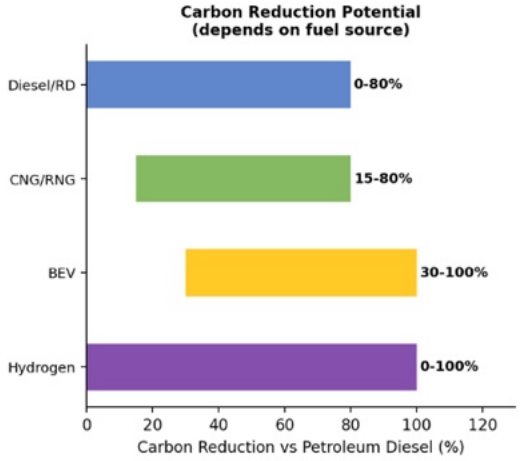






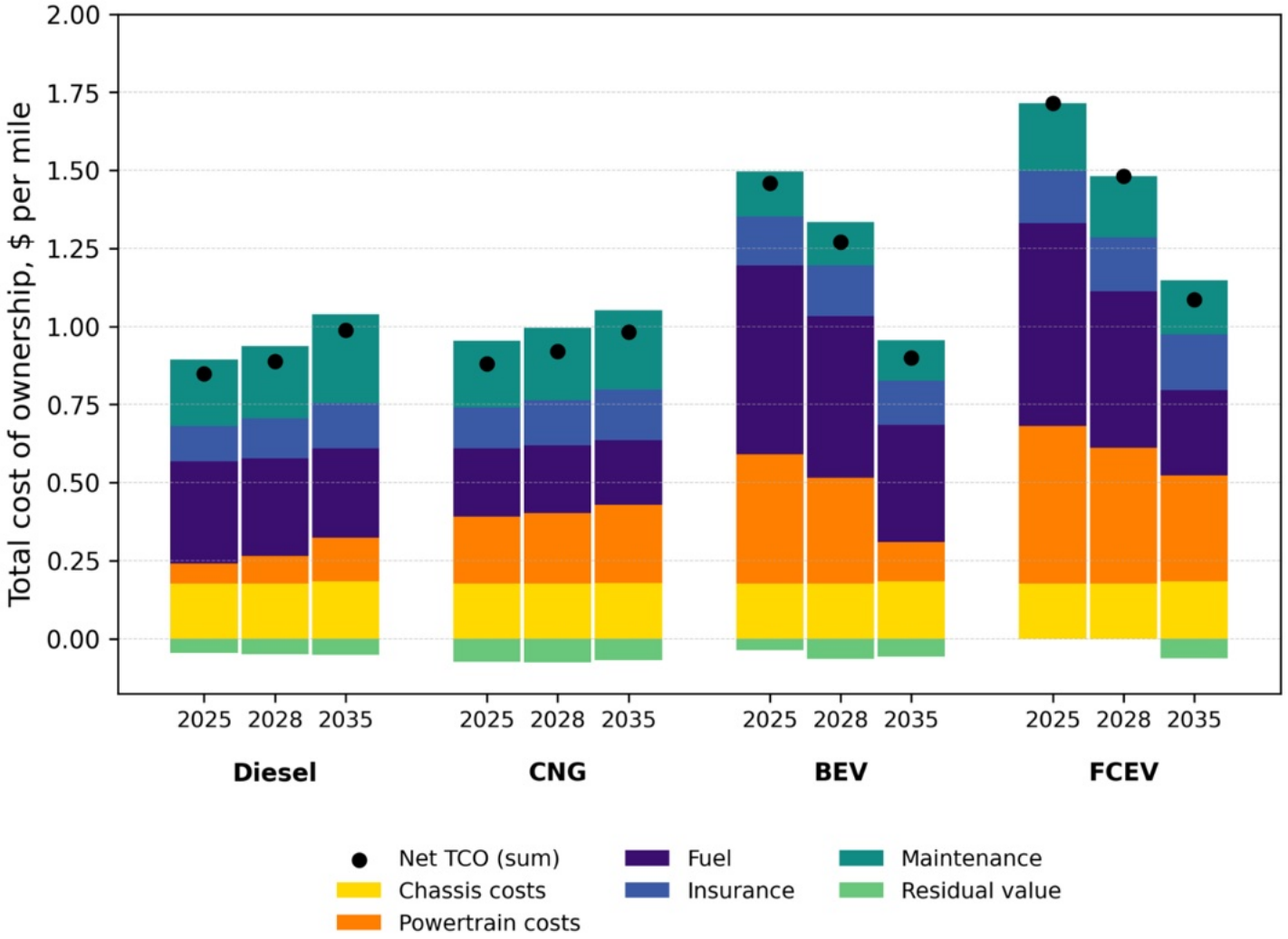






*Carbon reduction versus petroleum diesel baseline. Actual reduction depends on fuel source and Production pathway. BEV reduction varies on grid carbon intensity, hydrogen reduction varies on production Method (gray hydrogen from natural gas reforming vs green hydrogen from renewable electrolysis)

Analysis and Reports


Total cost of ownership, $ per mile
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
2025 2028 2035
Diesel
2025 2028 2035
CNG
2025 2028 2035
BEV
2025 2028 2035
FCEV
Net TCO (sum)
Chassis costs
Powertrain costs
Fuel
Insurance
Maintenance
Residual value

Do not Share

Emissions' Analysis

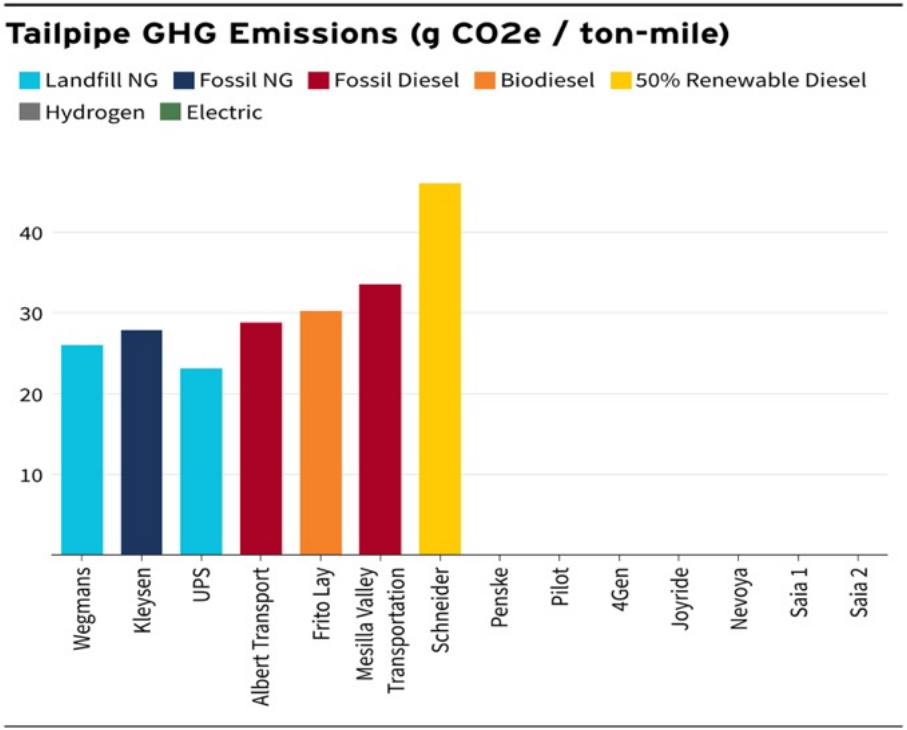


Figure 25: Downstream Tailpipe GHG Emissions

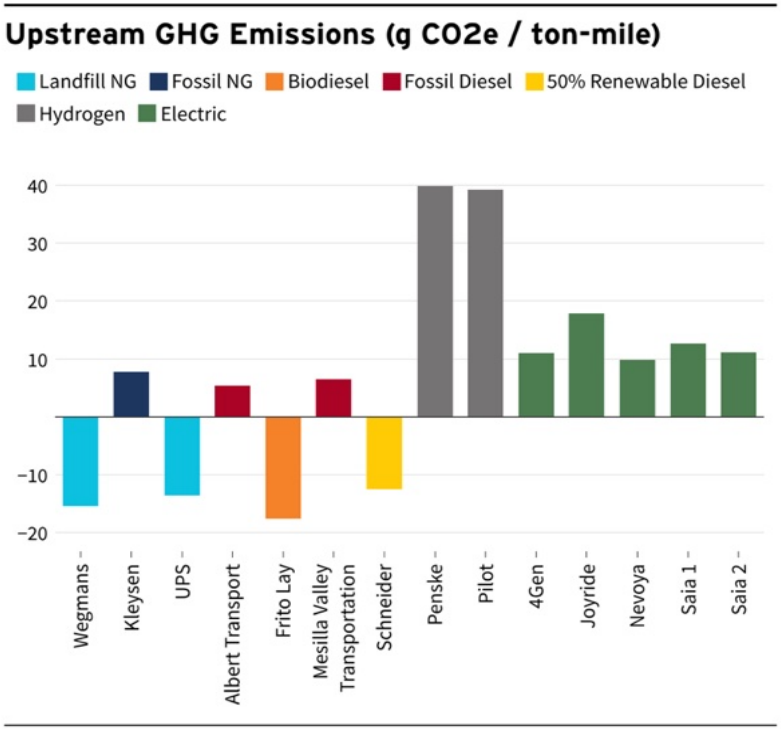
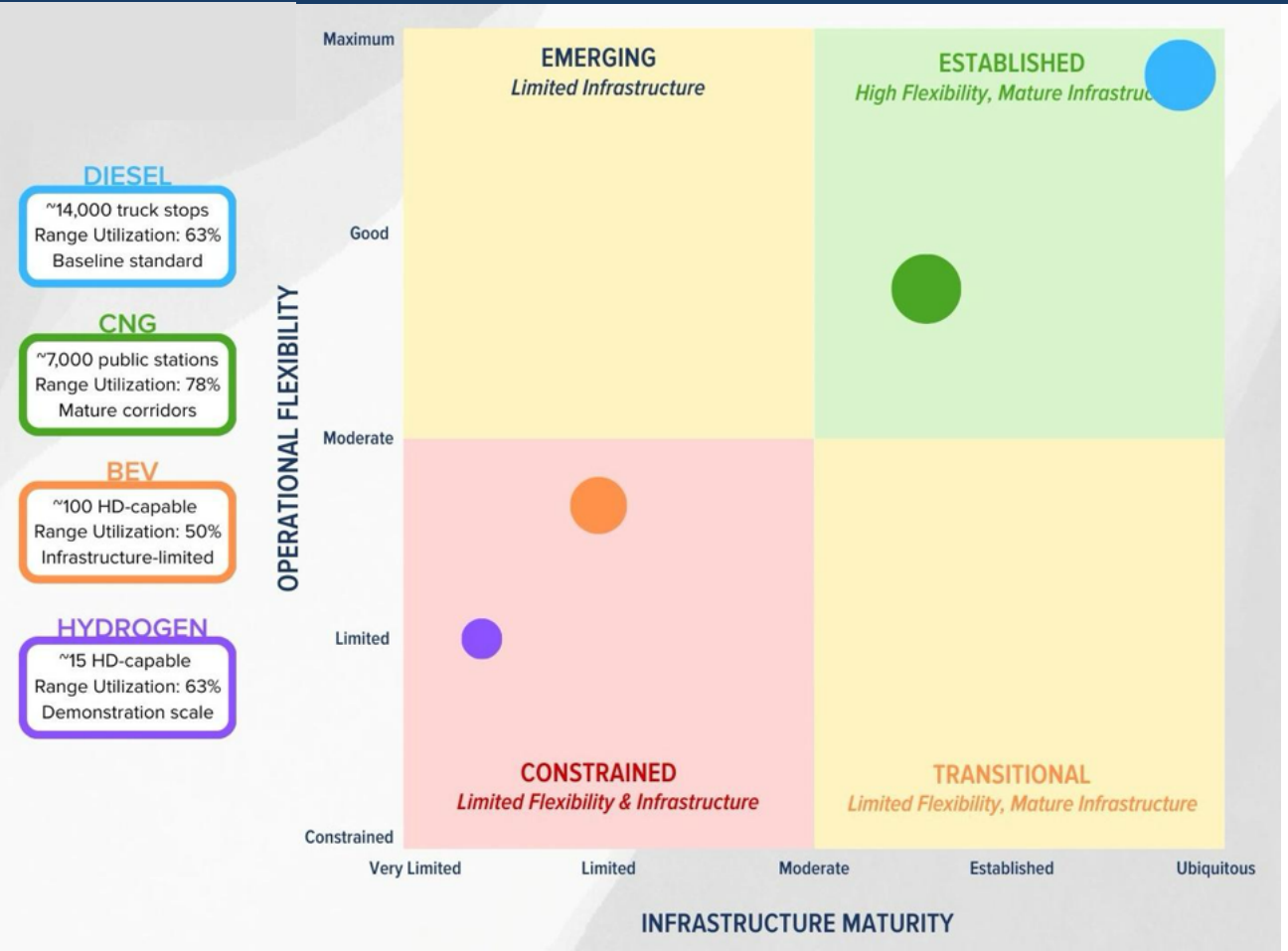


Figure 24: Upstream GHG Emissions

Do not Share

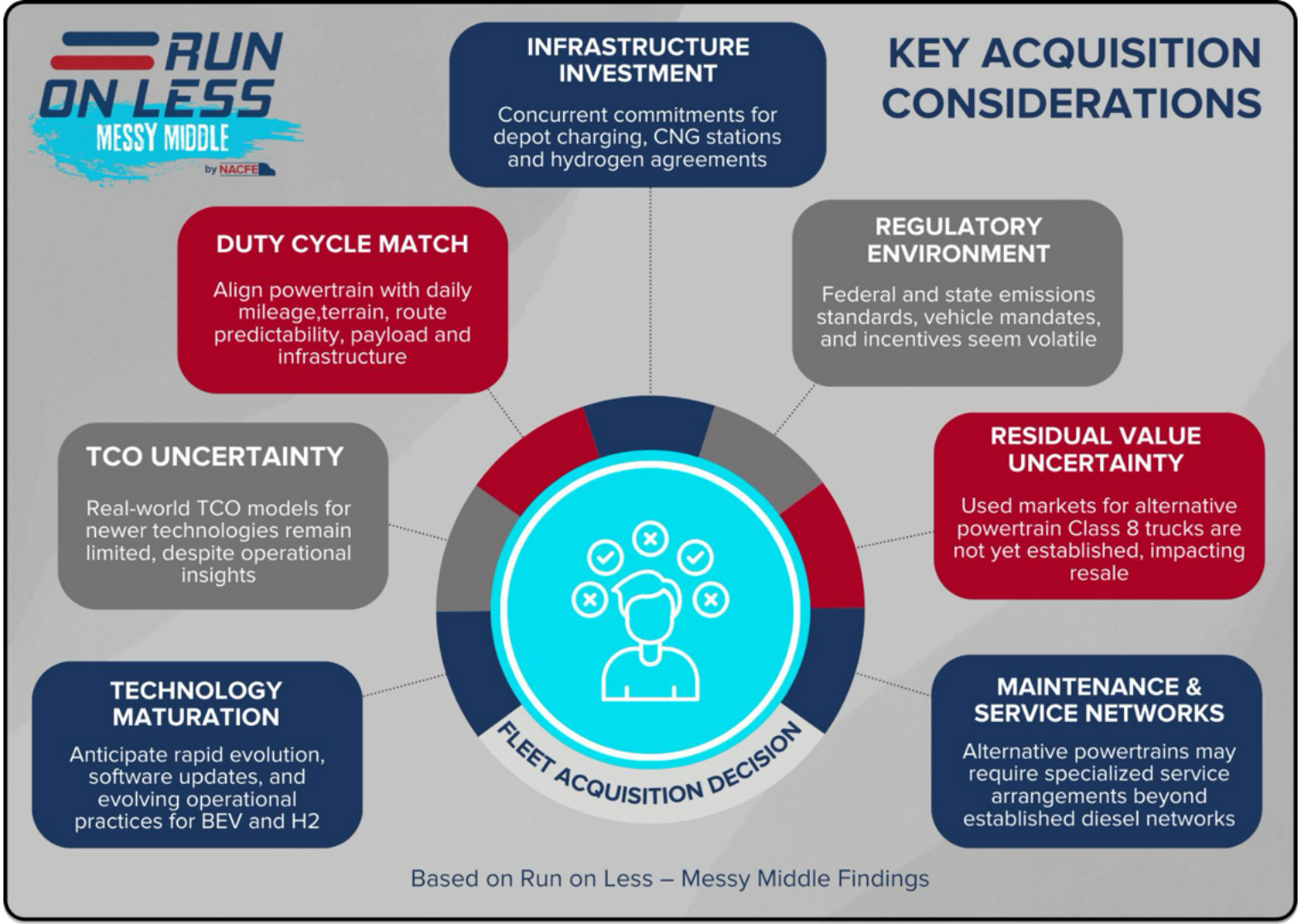
Technology Positioning Matrix



Infrastructure Maturity vs. Operational Flexibility

RUN ON LESS MESSY MIDDLE

Note: Bubble size reflects relative fleet deployment in Run on Less – Messy Middle


RUN ON LESS
MESSY MIDDLE
by NACFE
KEY ACQUISITION CONSIDERATIONS
INFRASTRUCTURE INVESTMENT
Concurrent commitments for depot charging, CNG stations and hydrogen agreements
DUTY CYCLE MATCH
Align powertrain with daily mileage,terrain, route predictability, payload and infrastructure
REGULATORY ENVIRONMENT
Federal and state emissions standards, vehicle mandates, and incentives seem volatile
TCO UNCERTAINTY
Real-world TCO models for newer technologies remain limited, despite operational insights
RESIDUAL VALUE UNCERTAINTY
Used markets for alternative powertrain Class 8 trucks are not yet established, impacting resale
TECHNOLOGY MATURATION
Anticipate rapid evolution, software updates, and evolving operational practices for BEV and H2
MAINTENANCE & SERVICE NETWORKS
Alternative powertrains may require specialized service arrangements beyond established diesel networks
FLEET ACQUISITION DECISION
Based on Run on Less – Messy Middle Findings

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