

NACFE

NORTH AMERICAN COUNCIL FOR FREIGHT EFFICIENCY



Lessons Learned for Truck Freight

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www.NACFE.org

North American Council for Freight Efficiency (NACFE)

- Unbiased, non-profit
- Mission to double freight efficiency
- Fleets, manufacturers, shippers, software, governments, associations, etc.
- Scale available technologies
- Guide future change

NACFE Website

- **Technology Overviews**
(Benefits & Challenges)
- **Run On Less** Event & Results
- Reports (Guidance, Confidence, Collaboration & others)
- Videos
- Events
- Sponsors
- Workshops
- ROI Payback tools
- Contact Info
- Hire NACFE
- **Compatible with tablets, PC's and smartphones**



Current Technologies

See how these 85 technologies can help your fleet improve its freight efficiency.



Future Technologies

Trucking is on the cusp of major changes; our guidance reports explore upcoming technologies that will impact fuel economy.



Run On Less

10.1 MPG is possible under real-world conditions. Learn all about how it was done during Run on Less, the first-of-its-kind cross-country roadshow.

TECHNOLOGIES

Complete, unbiased review of available technologies for fleet confidence to adopt.



Tire Pressure
Systems



6x2 Axles



Idle Reduction



Transmissions



Engine
Parameters



LRR Tires



Lightweighting



Downspeeding



Maintenance
for FE



Trailer
Aerodynamics



Tractor
Aerodynamics



Lubricants



Platooning



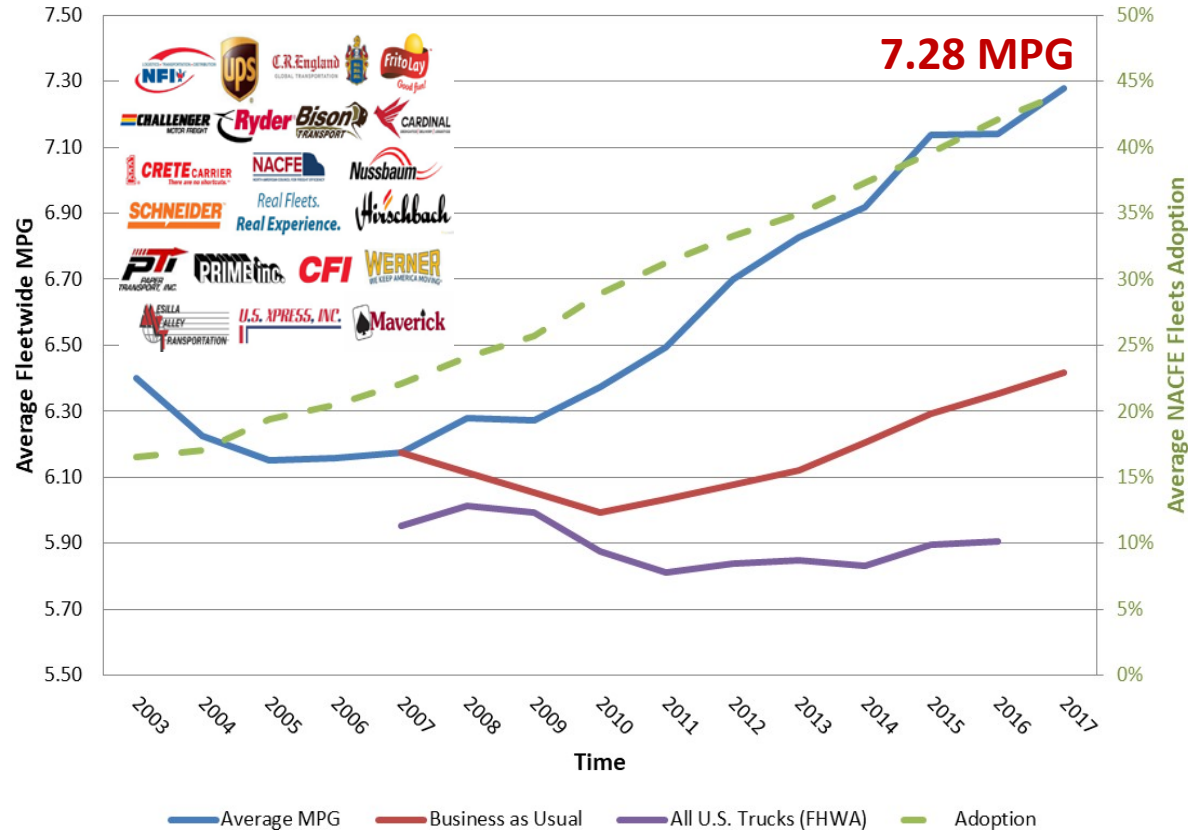
**Engine
Accessories**



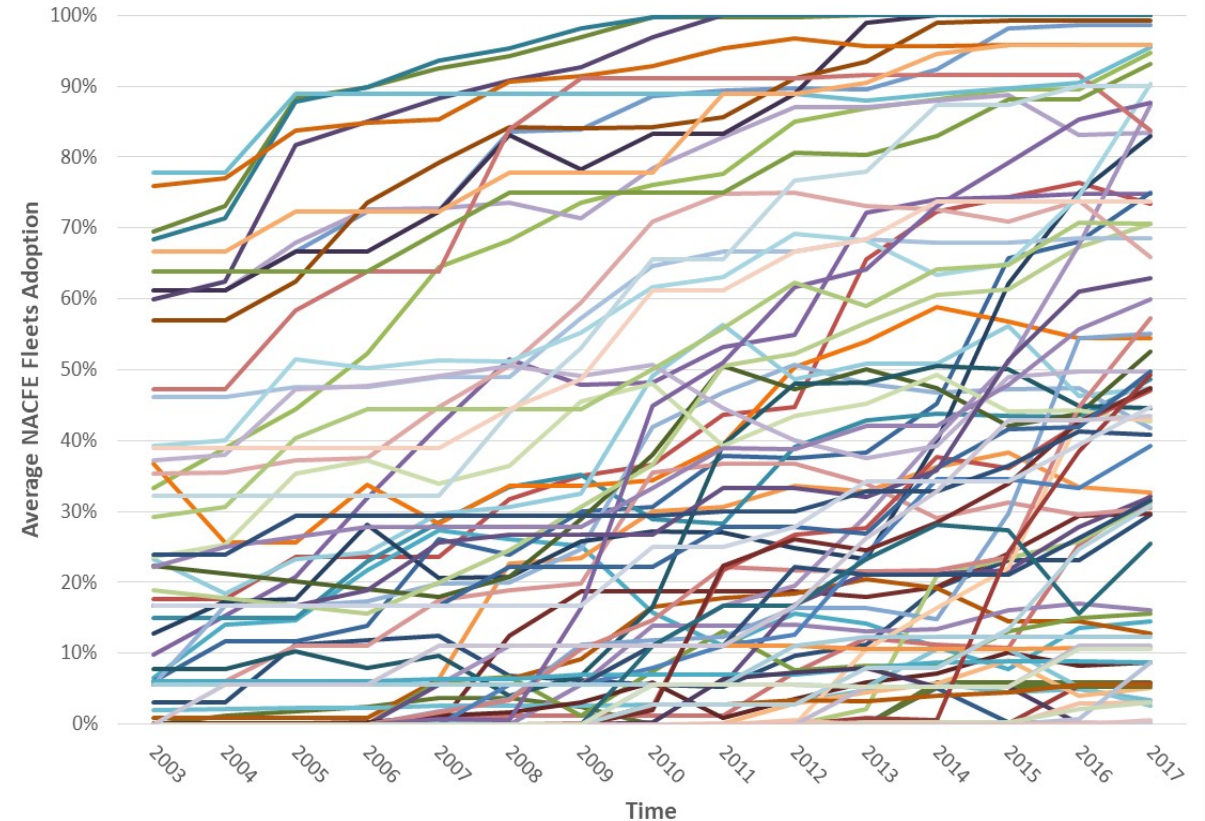
Solar

Annual Fleet Fuel Study

IFTA MPG and Adoption Percent Over Time

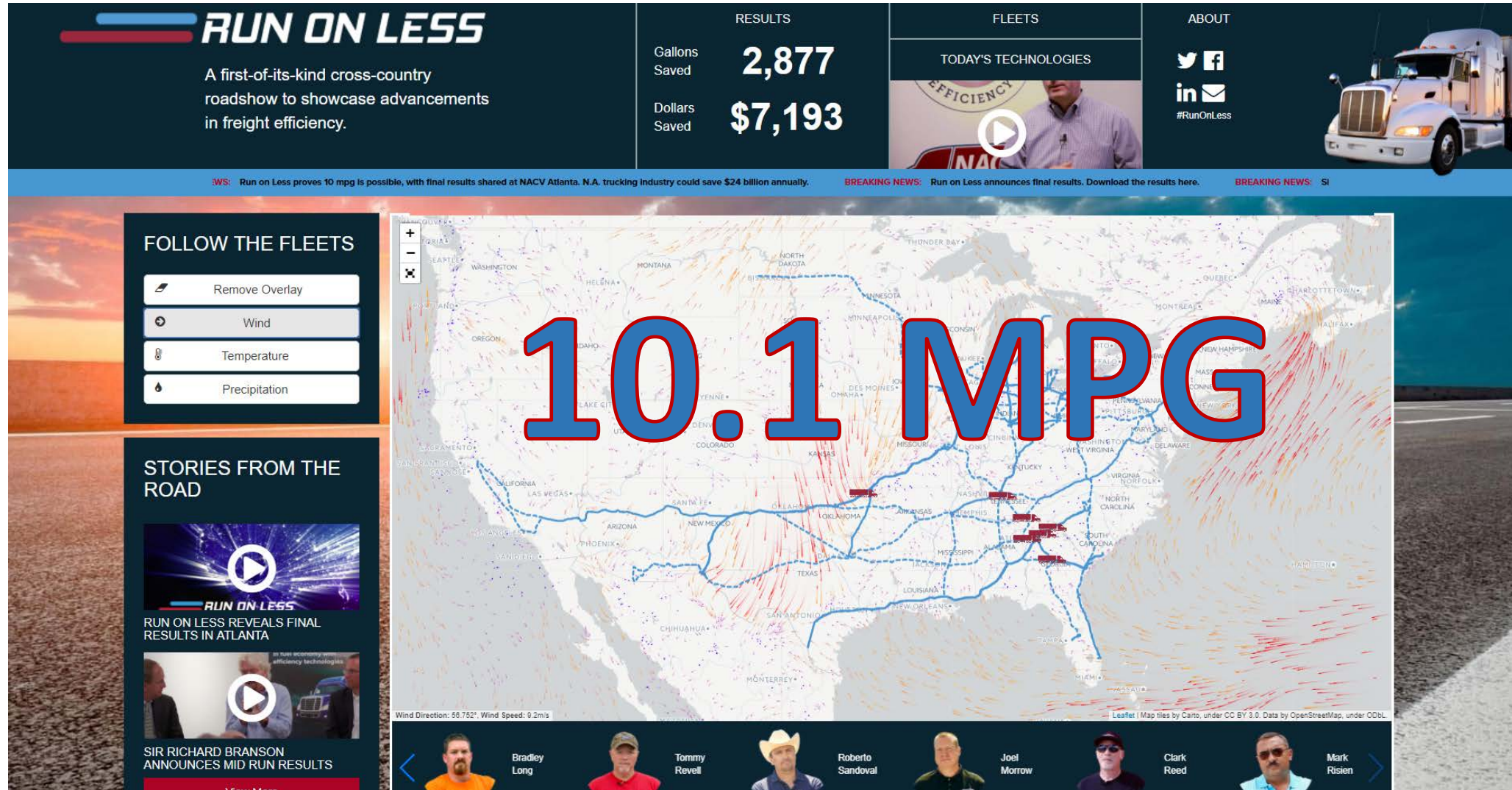


All Technologies



- 2018 Press release on August 28th at 11 AM EDT
- Report & Tools will be available on-line at no charge
- Includes fleet Specification Benchmarking spreadsheet

RUN ON LESS - SEPTEMBER 2017



Run On Less 2.0: Final Mile



September 2017

- Long Haul Focused
- 10.1 MPG
- 6 Fleets + 1 Owner-Operator

Huge Visibility & New Benchmarks

September 2019

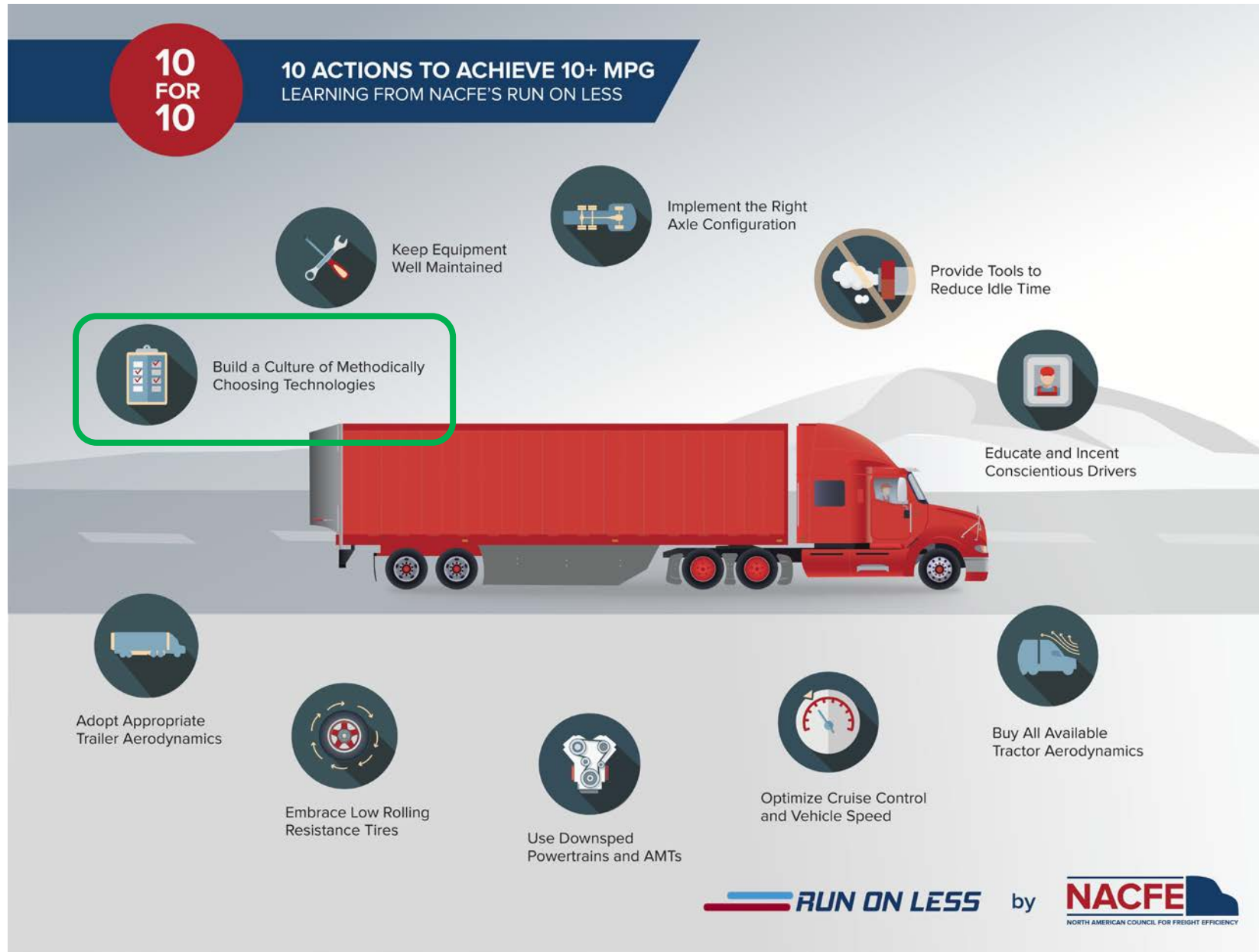
- **FINAL MILE** Focused
- New metrics (efficiency/productivity)
- Seeking participants & sponsors

Plan to educate as seasonal deliveries start



HOW TO ACHIEVE 10 MPG

NACFE is fuel agnostic: use whichever fuel is best for you



More
EFFICIENCY &
Less ANXIETY!

SOLAR ON TRACTORS & TRAILERS



Report Package

News Bulletin June 28, 2018

Executive Summary

Two Technology Web Pages

Full Report

Video

Payback Calculator

Confidence Matrix

ACTNews Webinar 7/25

The screenshot shows the ACTNews website. At the top, it says "ACTNews Advanced Clean Transportation News FOR THE COMMERCIAL VEHICLE SECTOR". Below this, there's a green banner that says "Early bird registration for ACT Expo 2019 will open in December. Sign up for updates >". On the left, there's a sidebar with "FEATURED NEWS", "WEBINARS", "INDUSTRY HEADLINES", "FUNDING & INCENTIVES", "FEATURED VIDEOS", and "QUOTABLE FLEETS". The main content area shows a webinar announcement: "WEBINAR: Solar Energy for Auxiliary Power in Trucks and Trailers" by July 12, 2018. It says "Join us on Wednesday, July 25 at 10 a.m. PT / 1 p.m. ET for this complimentary webinar, presented in partnership with the North American Council for Freight Efficiency (NACFE)." and includes a photo of a white truck. At the bottom, it says "Register for the webinar." and "ACTExpo April 23-26, 2019 | Long Beach, CA".

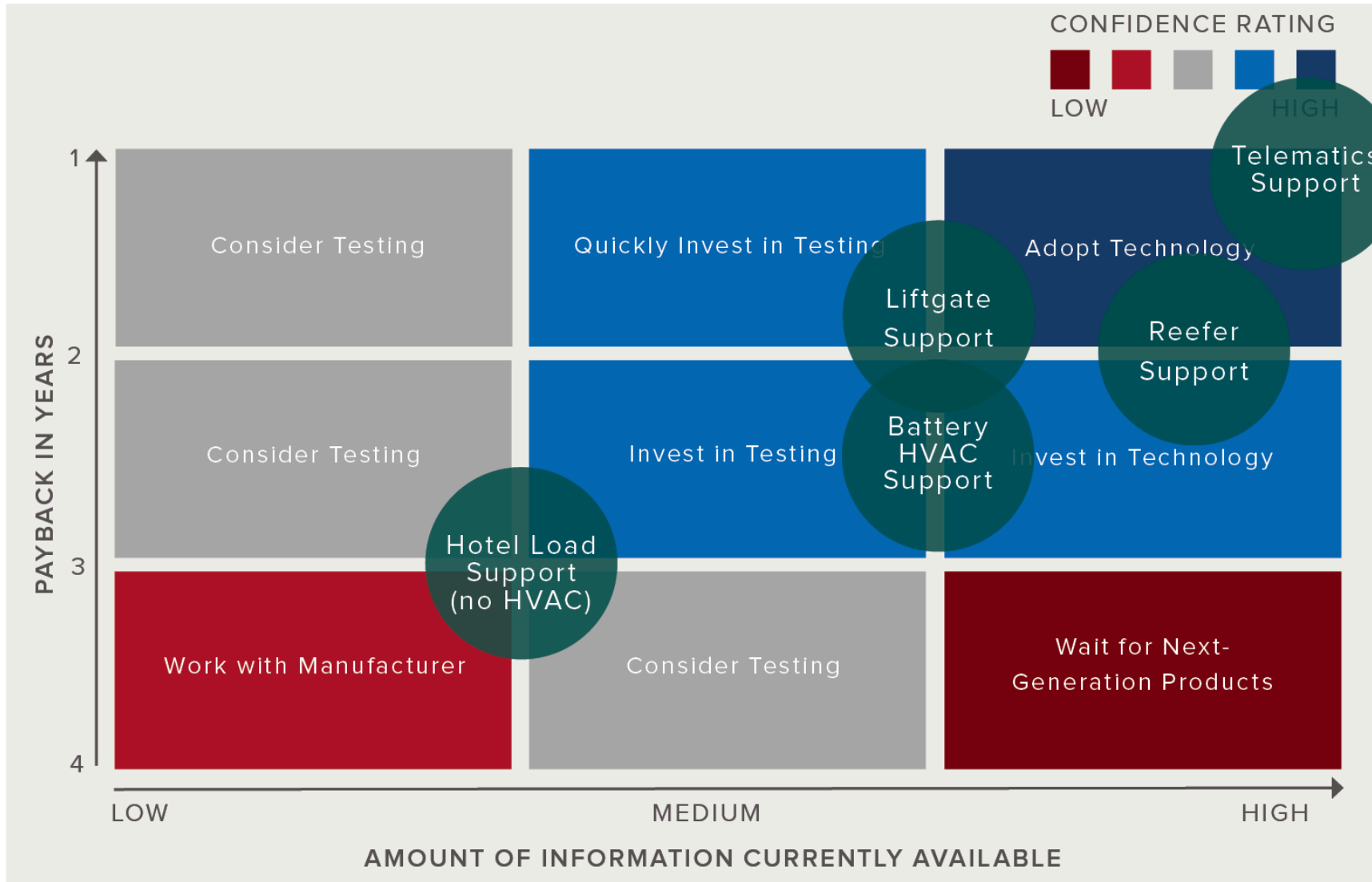
SOLAR



Findings

- Panels are flexible, thin, easily installed and reliable. Some use cases are an excellent application of the technology.
- Fuel savings are generally a very small part of the overall benefit.
- Solar panel installations need to be sized appropriately for their intended application.
- There is limited hard evidence at this point from fleets on payback. The biggest benefits coming from extending battery life and avoiding emergency roadside assistance for dead batteries.

SOLAR



GUIDING FUTURE CHANGE

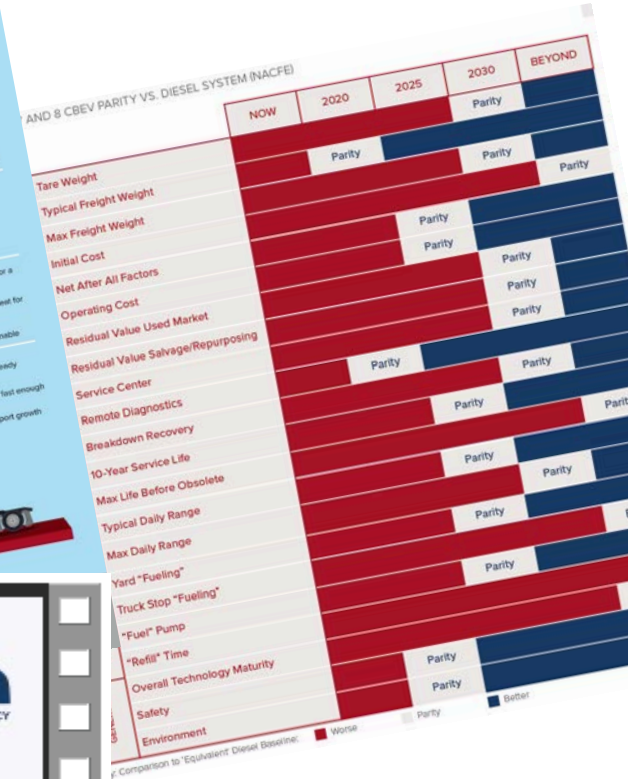


ELECTRIC TRUCK GUIDANCE

“Electric Trucks, Where They Make Sense”



Report Package
Executive Summary
10 Arguments Infographic
Technology Web Page
Video
MD & HD Parity Charts
Full Report
204 Source Bibliography &
31 New Graphics



Online at (<https://nacfe.org/future-technology/>)

COMMON THEMES

10 ARGUMENTS FOR AND AGAINST ELECTRIC TRUCKS

Argument FOR Electric Trucks	VS.	Argument AGAINST Electric Trucks
1 Commercial battery electric vehicle (CBEV) weight is not an issue	WEIGHT	1 Vehicle tare weight is too high to support my freight needs
2 CBEV technology is proven and here now		2 Technology is not ready
3 Maintenance will be less costly	TECHNOLOGY	3 Maintenance may not be less costly
4 CBEVs will last beyond 10 years		4 Vehicle life is too short
5 CBEVs will be competitively priced	COST	5 Vehicle purchase price is too high for a positive ROI
6 CBEVs will be less expensive to operate		6 Vehicle operating costs are too great for positive ROI
7 CBEVs will command a premium at resale		7 Vehicle residual value is questionable
8 Trust the market to provide CBEV charging solutions	CHARGING	8 Charging infrastructure is not ready
9 Trust the market to provide CBEV charging solutions		9 Charging Infrastructure is not fast enough
10 The grid and market will evolve with CBEVs		10 The electric grid cannot support growth in electric vehicles

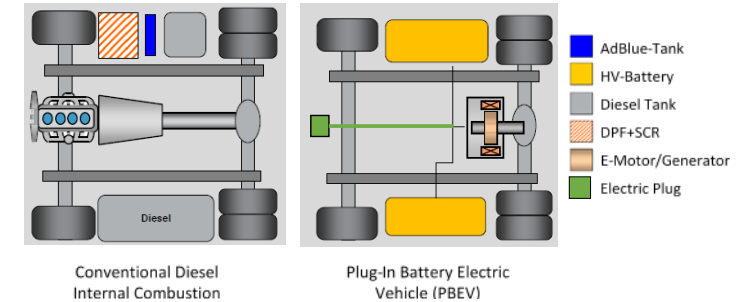


NACFE's findings on these 10 arguments are discussed in detail in its Electric Truck Guidance Report

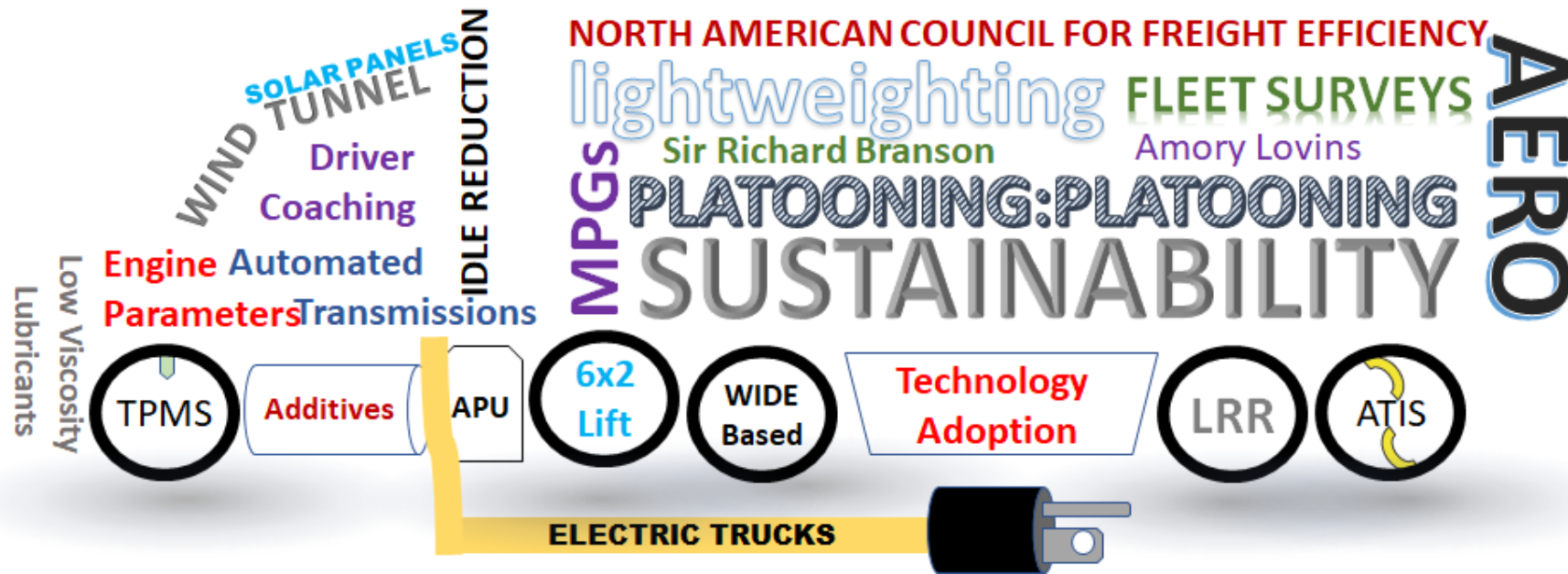
- Duty Cycles and Fleet Business Models Matter
- Weight
 - Cube vs. Gross Out
 - Significant engine related weight removed
- Charge Times
 - Time @ pump vs. Time @ charger
 - Large amount of fuel storage
 - Use of truck asset
- Cost
 - Complex calculations

FINDINGS

- Medium duty greatest near term potential.
- CBEVs will happen under marketplace scrutiny.
 - Parity charts detail 22 attributes for decision making.
- Must be reliable, but new technology growing pains.
- Rapid improvement will continue with CBEVs while engines are more mature.
- Maintenance and service should decrease but needs to be understood.
- Total cost of ownership calculations are very complex.
- New business models emerging for infrastructure, finance, etc.



THANK YOU – See you in Durham !!



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