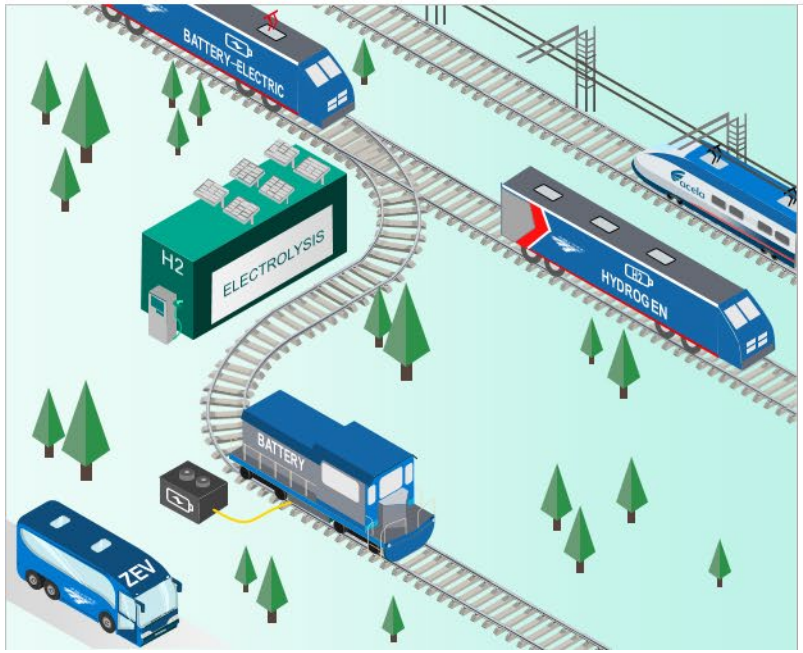
Amtrak Net-Zero by 2045

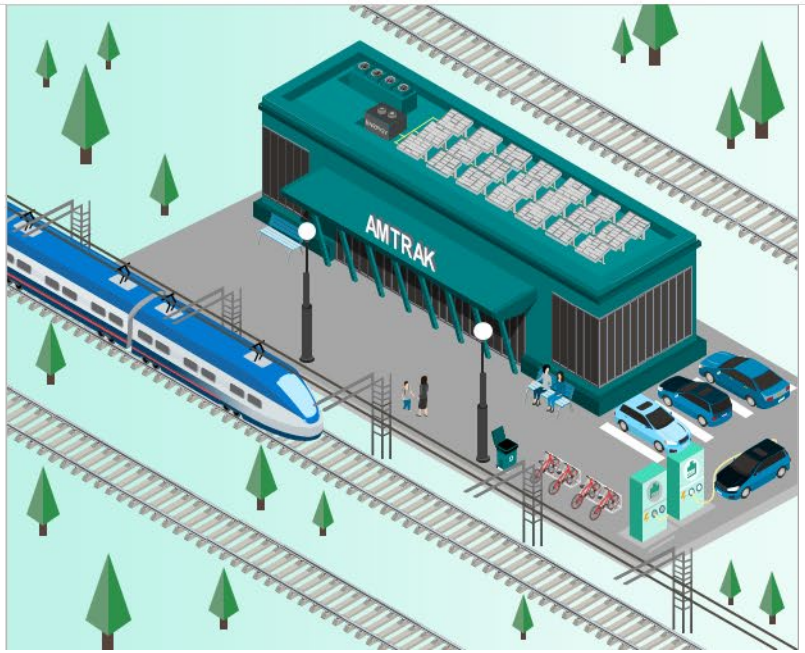
FRA On Track for Decarbonization Workshop

Denver, May 2023

Our vision and strategic building blocks for 2045

Amtrak as a net-zero mobility provider across the entire value chain





VEHICLES

1. Alternative powertrains
2. Alternative drop-in fuels[1]
3. Air quality improvement systems[1]
4. Energy-efficient vehicle operation

INFRASTRUCTURE

5. Electrification
6. Emission-free heating
7. On-site power generation
8. Building energy efficiency

VALUE CHAIN & BUSINESS OPS

9. Carbon-free power purchasing
10. Sustainable procurement
11. Supplier engagement
12. Net-zero business operations[2]

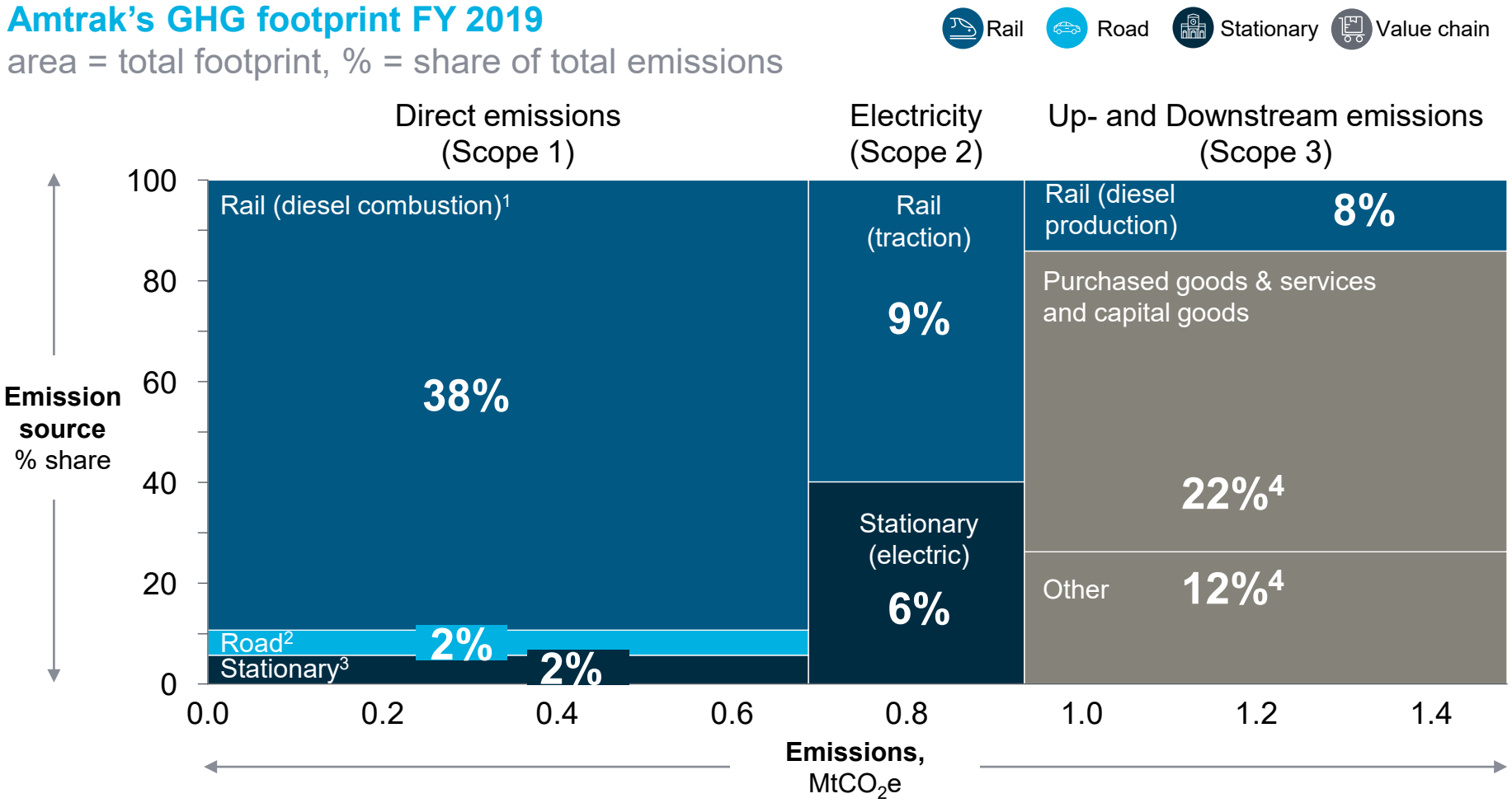
(1) intermediate solution for combustion engines on the way to alternative powertrains (2) incl. construction and roadway maintenance

Today's presentation

55% of Amtrak's GHG footprint stems from rail operations; pathway to Net-Zero requires special focus on rail operations with considerations across all scopes

Amtrak's GHG footprint FY 2019

area = total footprint, % = share of total emissions



Takeaways

- Amtrak's **2045** net-zero **target** encompasses **all** GHG **emission sources**; incl. value chain emissions
- 55% of Amtrak's emission from rail with **46% from diesel operations**
- Challenge: long-distance **intercity routes difficult to decarbonize** as **no off-the-shelf solution** exists on the market

Transitioning rail to **alternative powertrains** is **most critical** on Amtrak's pathway to Net Zero

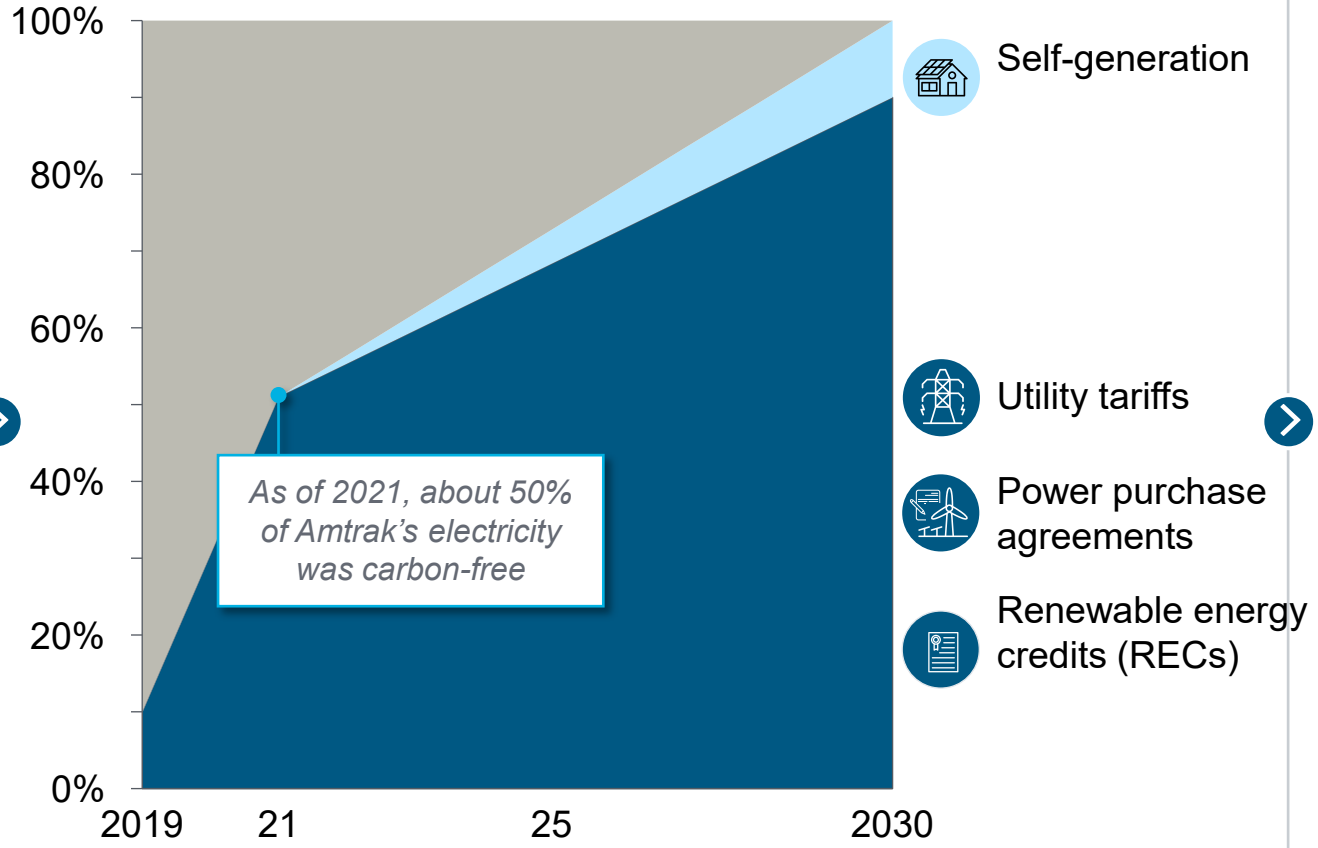
(1) Incl. emissions from revenue, non-revenue locomotives, and fugitives (2) Incl. emissions from highway vehicles, thruway buses, other small vehicles (e.g., forklifts), and fugitives
(3) Emissions from heating and cooling (fugitives) (4) Estimate based on FY21 direct & indirect spend | Source: Amtrak, DB analysis

Today, ~50% of Amtrak's electricity demand is coming from carbon-free sources; the goal is to achieve 100% by 2030 through a mix of different options

60% of traction power comes from carbon-free sources

Amtrak' RE portfolio development

in % share of total demand



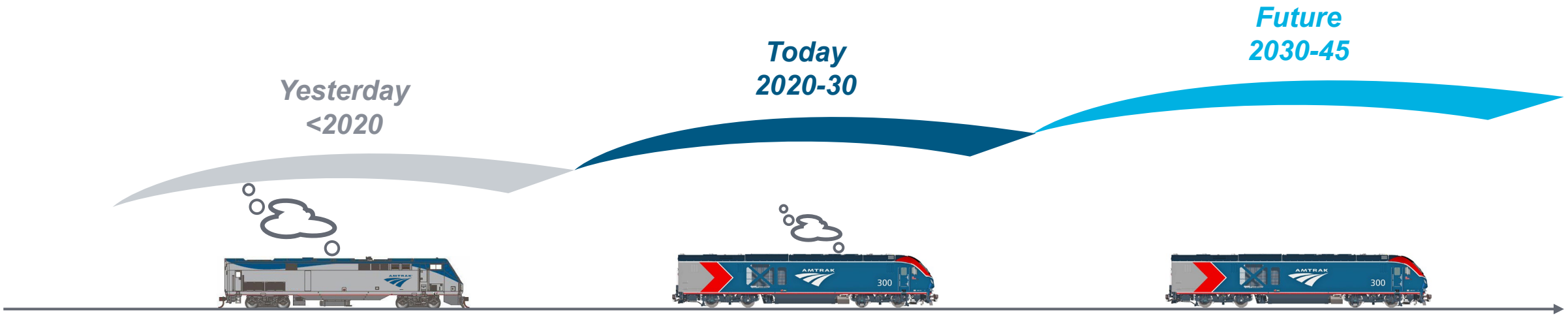
Highlights

- As of today, Amtrak covers **~60% of its traction power** on the NEC[1] and **~50% of its total demand** with carbon-free electricity
- goal is to source **100% carbon-free electricity by 2030**
- To do so, Amtrak will
  - Employ various power generating and purchasing instruments like **RECs, PPAs and green utility tariffs** to cover the remainder

(1) Northeast Corridor
Source: Amtrak, DB estimates

2 Proactive changes to our fleet will be needed, incl. replacing old diesel fleet with Tier 4 locomotives & transitioning to zero emission starting in 2030s

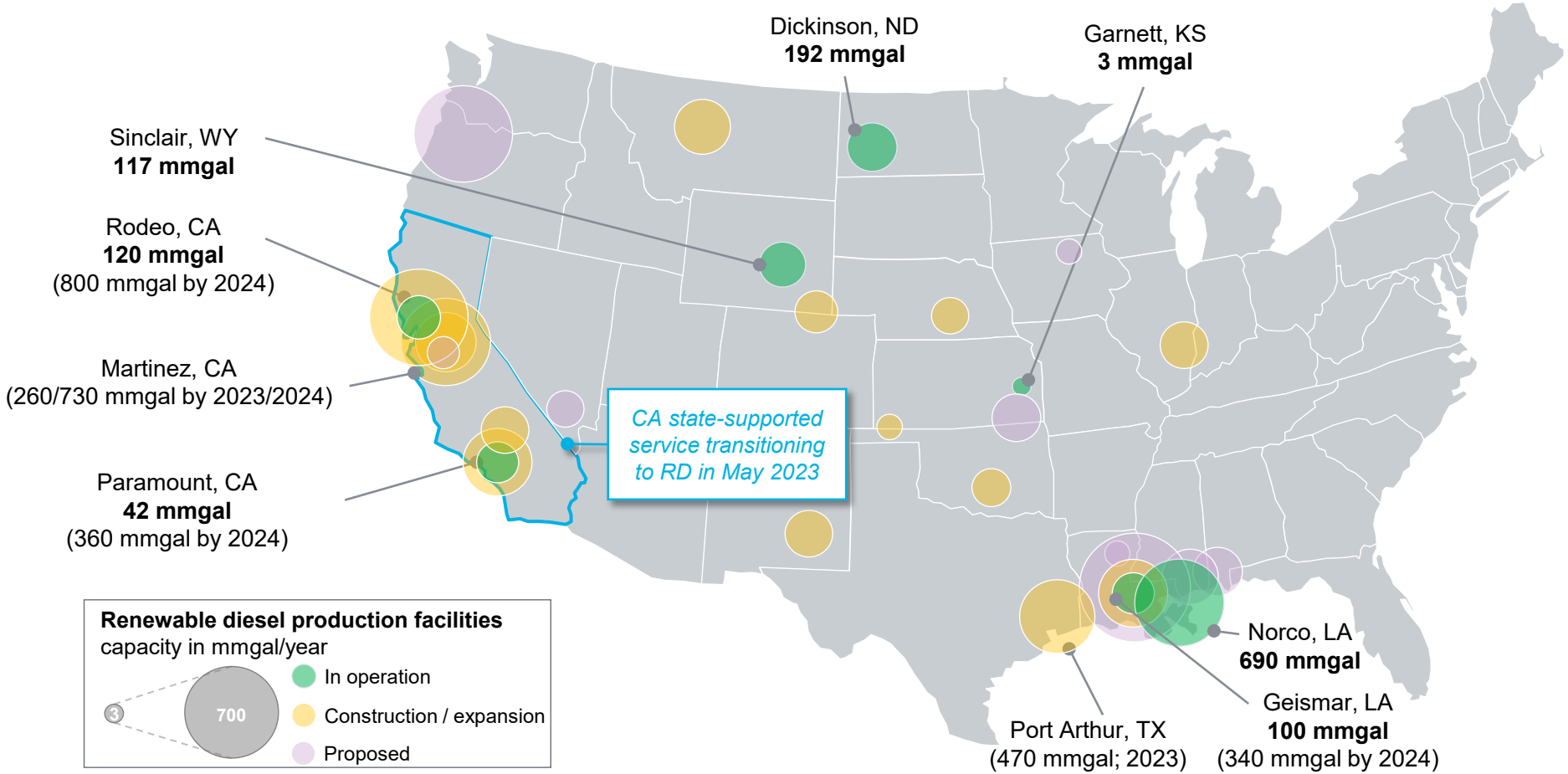
Amtrak's strategy for the revenue locomotive fleet



	Yesterday <2020	Today 2020-30	Future 2030-45
Tech.	ICE[5] with diesel	ICE with (renewable) diesel	Hydrogen & battery, dual-mode
CAP	Tier 0	Tier 4	Zero emission
GHG	Baseline	-10% (fuel efficiency) -60% (renewable diesel)	Zero emission

Renewable diesel is a stepping stone in net-zero strategy – supply chain challenges to be addressed

Amtrak fueling locations and U.S. RD production capacity, as of Jan. 1, 2022



(1) Circle size does not represent fueling volumes
Source: Amtrak, EIA, Biodiesel Magazine, DB research & analysis

Highlights

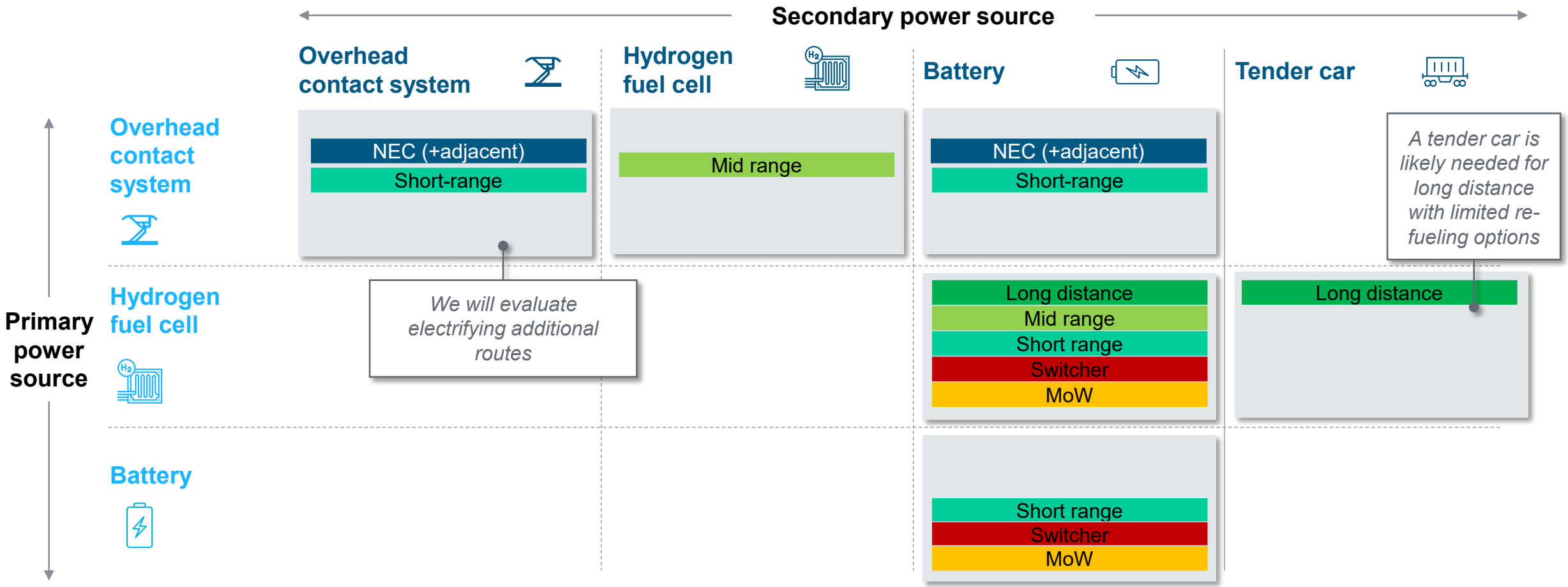
- Replacing legacy fleet with ALC-42, approved use of renewable diesel
- Majority of Amtrak's Top 15 fueling locations on east coast whereas RD production mostly on West and Gulf Coast

Challenging from a supply chain perspective to get **RD to East Coast**

A combination of power sources suitable for different use cases/operational requirements

Initial assessment

ZE powertrains and their applicability to Amtrak's use cases



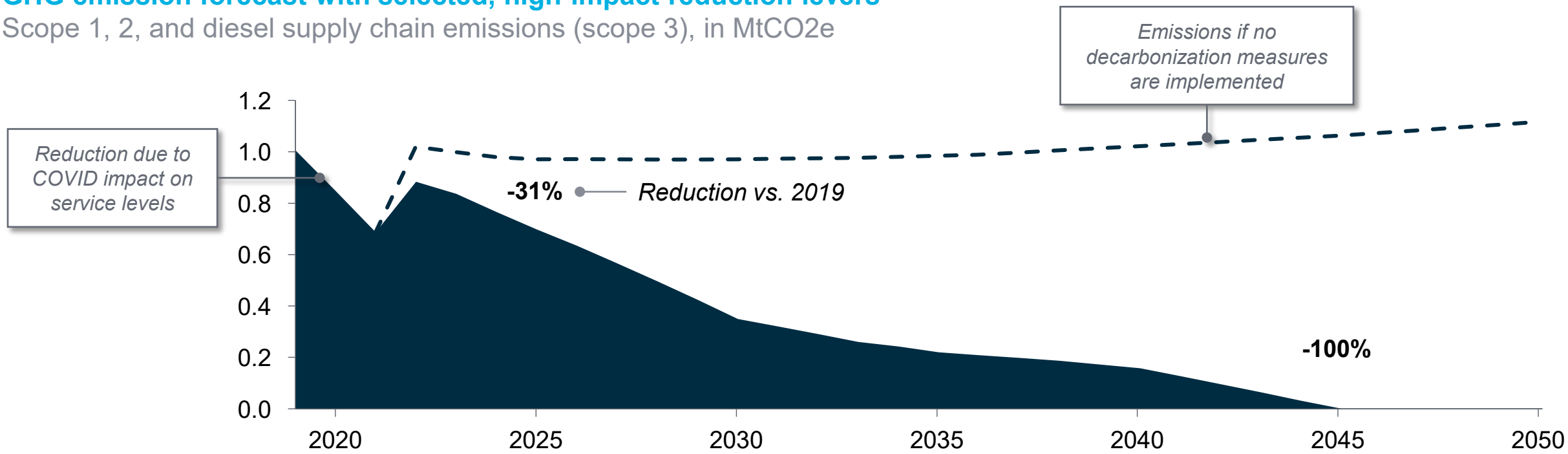
Source: Amtrak, DB assessment

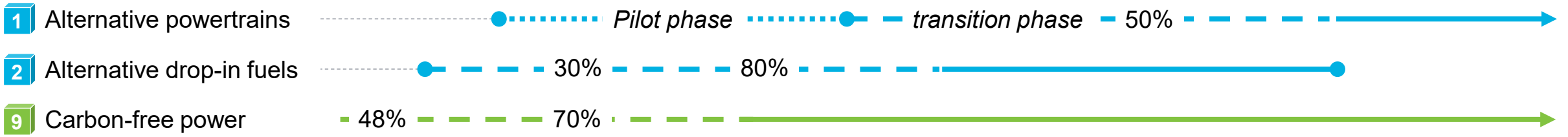
Feasible options

With the identified emission reduction levers, Amtrak will achieve net-zero emissions by 2045

GHG emission forecast with selected, high-impact reduction levers

Scope 1, 2, and diesel supply chain emissions (scope 3), in MtCO2e





Impact on reduction: No effect | Partial effect | Full effect