



DECARBONIZING THE TRANSPORTATION SECTOR

JUNE 10TH @ 3:00PM ET

State Carbon Pricing Network (SCPN)

- Over 7,500 advocates, legislators, government officials, business leaders, and academics working to price carbon pollution in their states
- Members across all 50 states
- Learn more at www.climate-exchange.org/network

Noa Dalzell



SCPN Manager



SCPN Services

- Conduct **research studies** on the state-specific impacts of carbon pricing
- Help **draft carbon pricing bills** and provide technical assistance
- Offer opportunities for **cross-state collaboration**, like our monthly national SCPN call and quarterly legislative calls
- Share knowledge and information via our **monthly webinars** and **weekly newsletters**

Today's Speakers



Daniel Gatti

*Massachusetts Executive Office
of Energy and Environmental
Affairs*



Colin Murphy

*UC Davis Policy Institute
for Energy, Environment,
and the Economy*



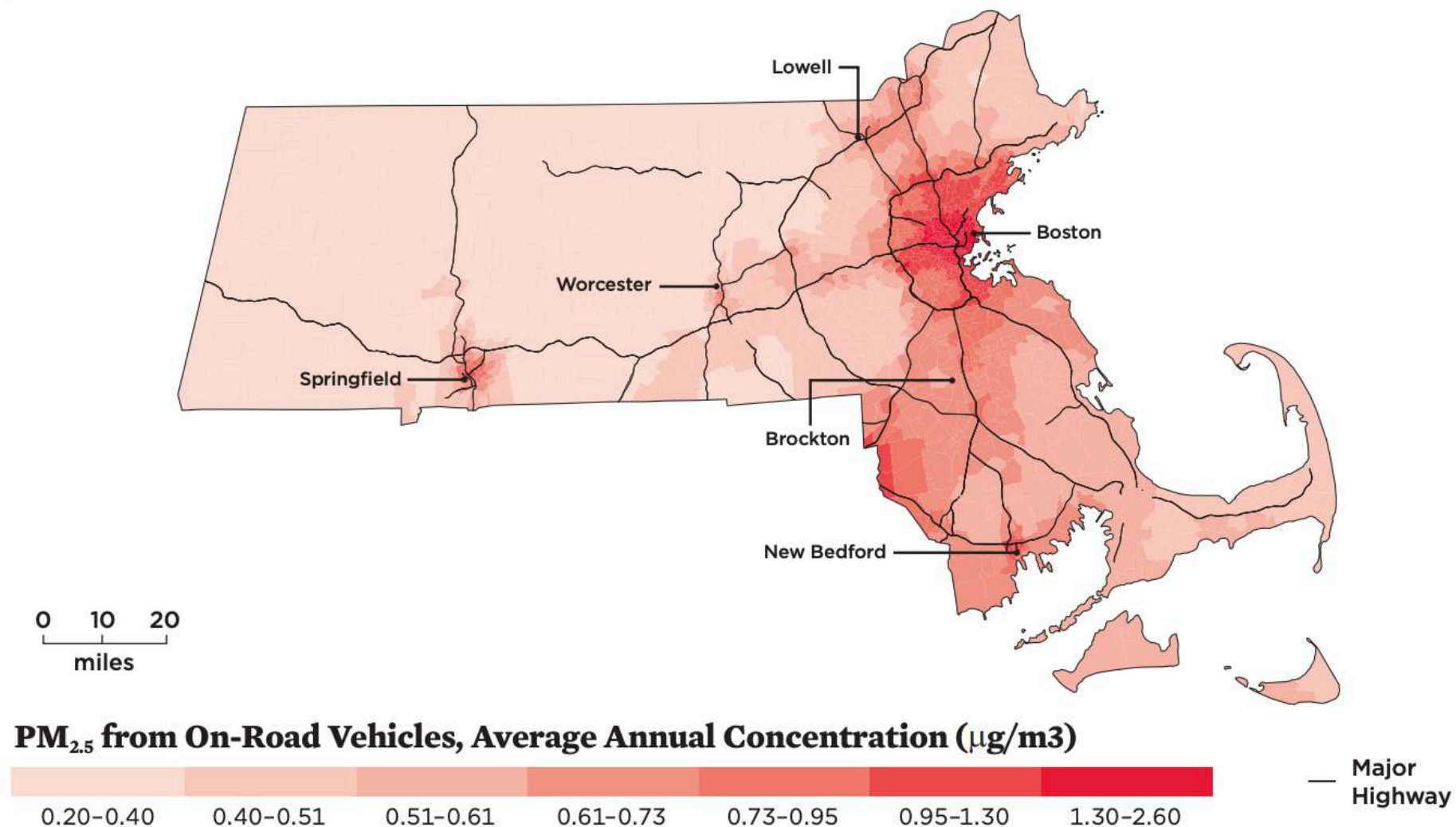
Beth Osborne

*Transportation for
America*



Building a clean transportation system
for Massachusetts

FIGURE 1. High Variation in Exposure to PM_{2.5} Pollution from On-Road Vehicles in Massachusetts



Three Massachusetts counties have average PM_{2.5} exposures higher than the state average. In Suffolk County, the most polluted, average concentration is 88 percent above the state average. Middlesex and Norfolk are the next most polluted, with concentrations 17 percent and 3 percent above the state average, respectively. High levels of PM_{2.5} are found in pockets in Springfield, bordering I-91, as well as in areas of Massachusetts east of Providence, Rhode Island, bordering I-195.

SOURCES: US CENSUS BUREAU 2018; EPA 2014.

Commission on the Future of Transportation



Commission on the Future of Transportation

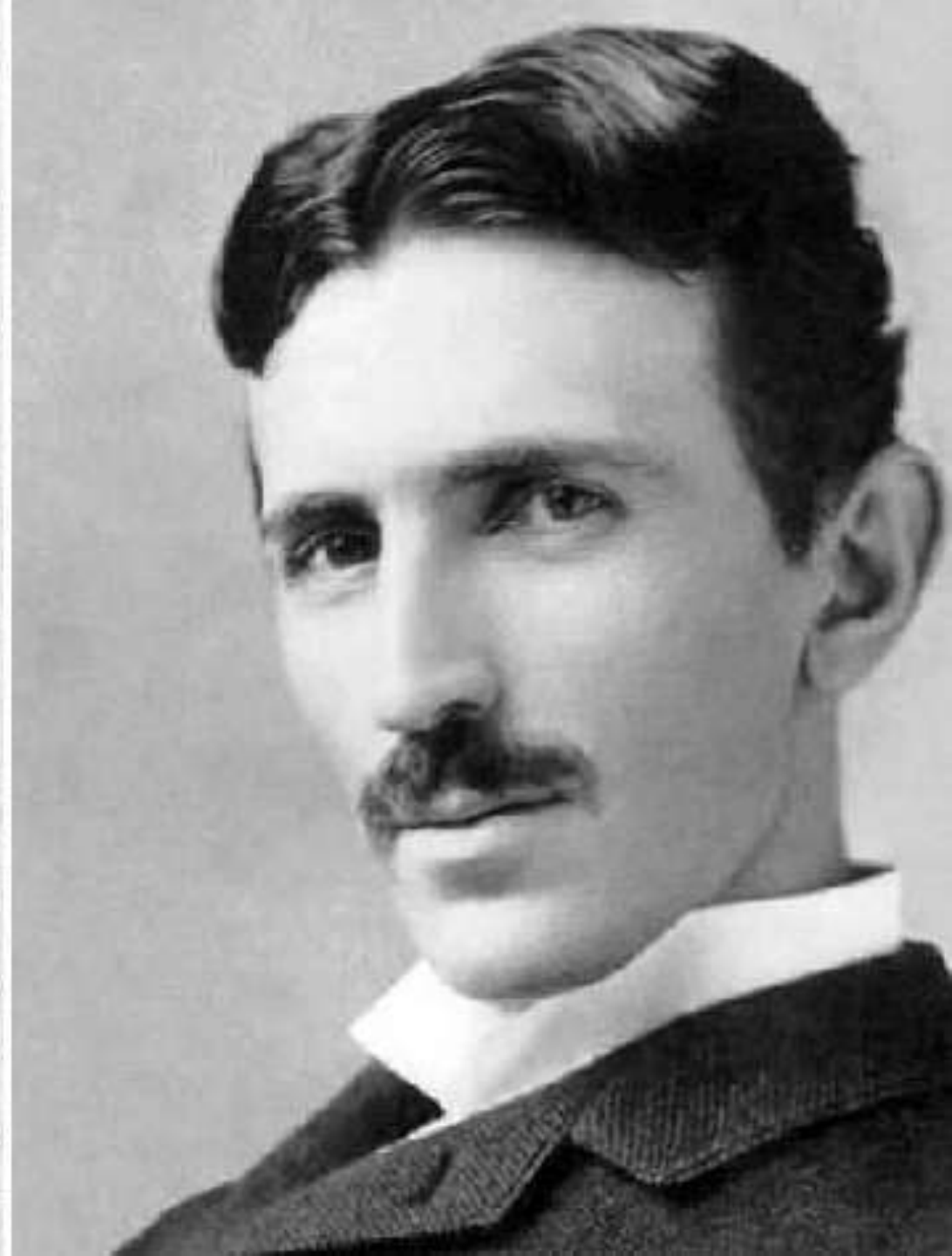
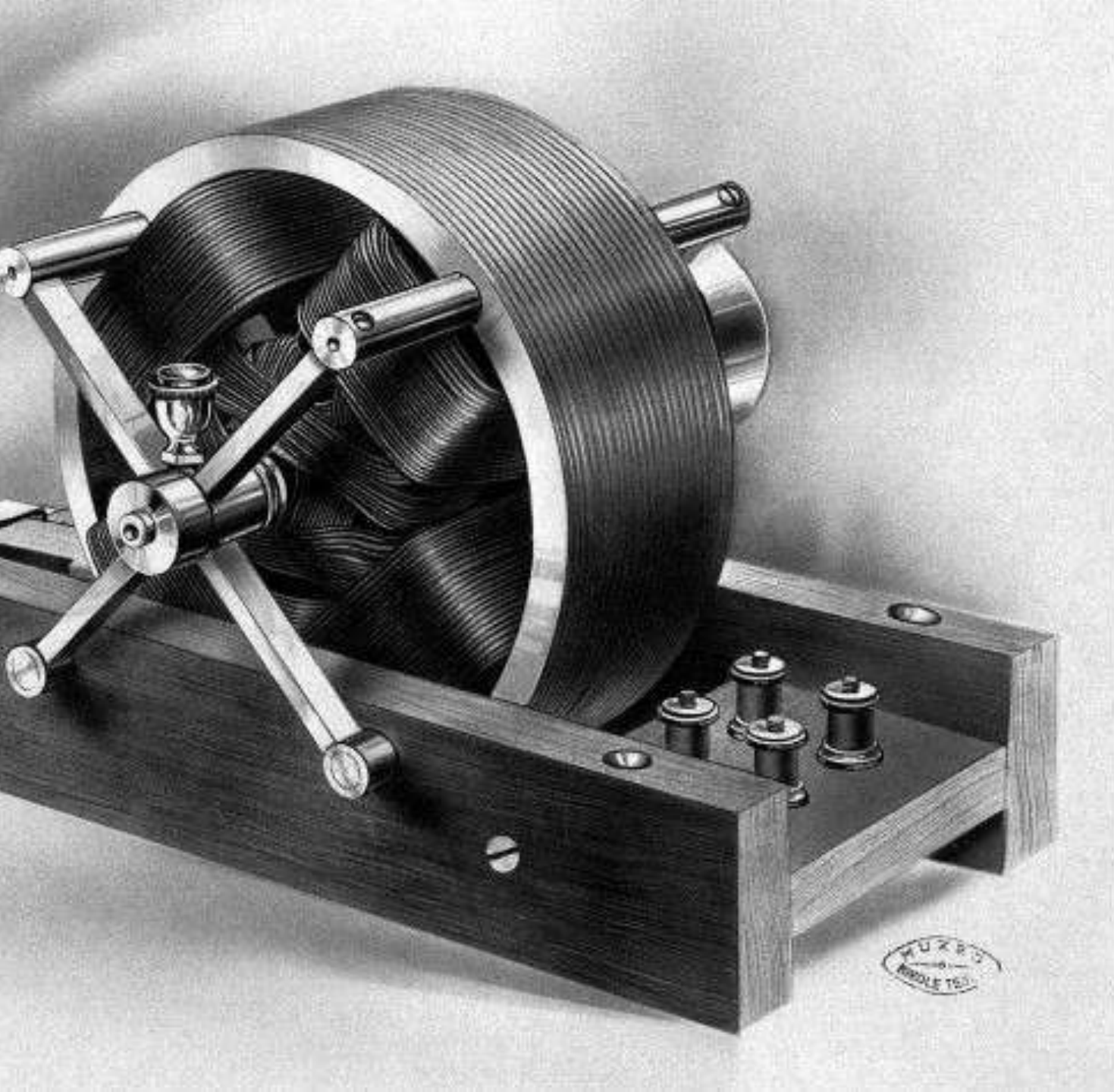


Recommendations:

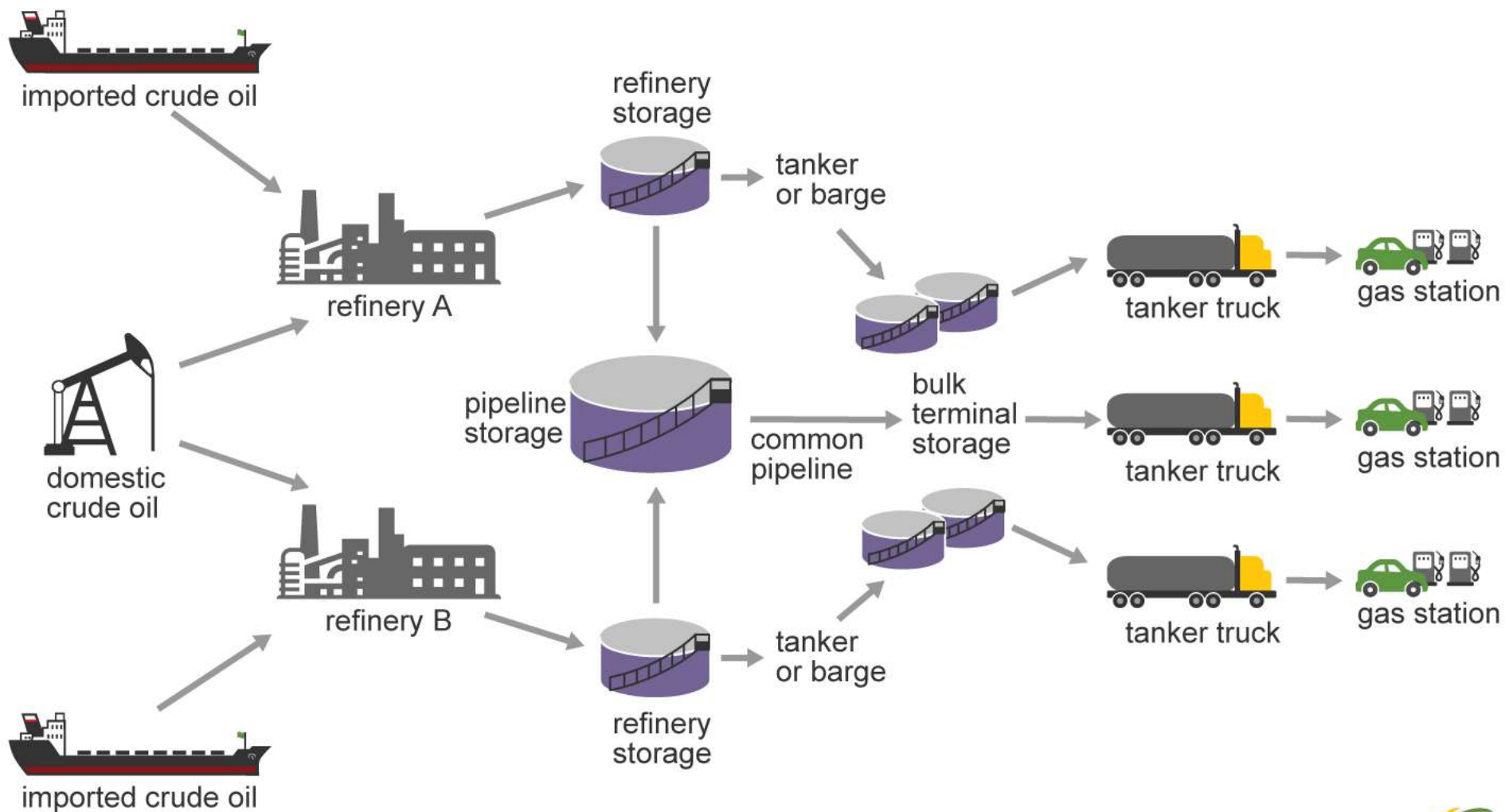
- Improve public transportation.
- Establish a goal that all new light duty vehicles and buses are zero-emission by 2040.
- Prioritize movement of people over vehicles.
- Develop our strategy to support new technologies and trends, including automated vehicles, TNCs and mobility as a service.
- Create a market-based program to limit transportation pollution.
- Improve resiliency of our transportation infrastructure.
- Adopt dense, mixed-use and transit-oriented development policies

Engine of the Future?

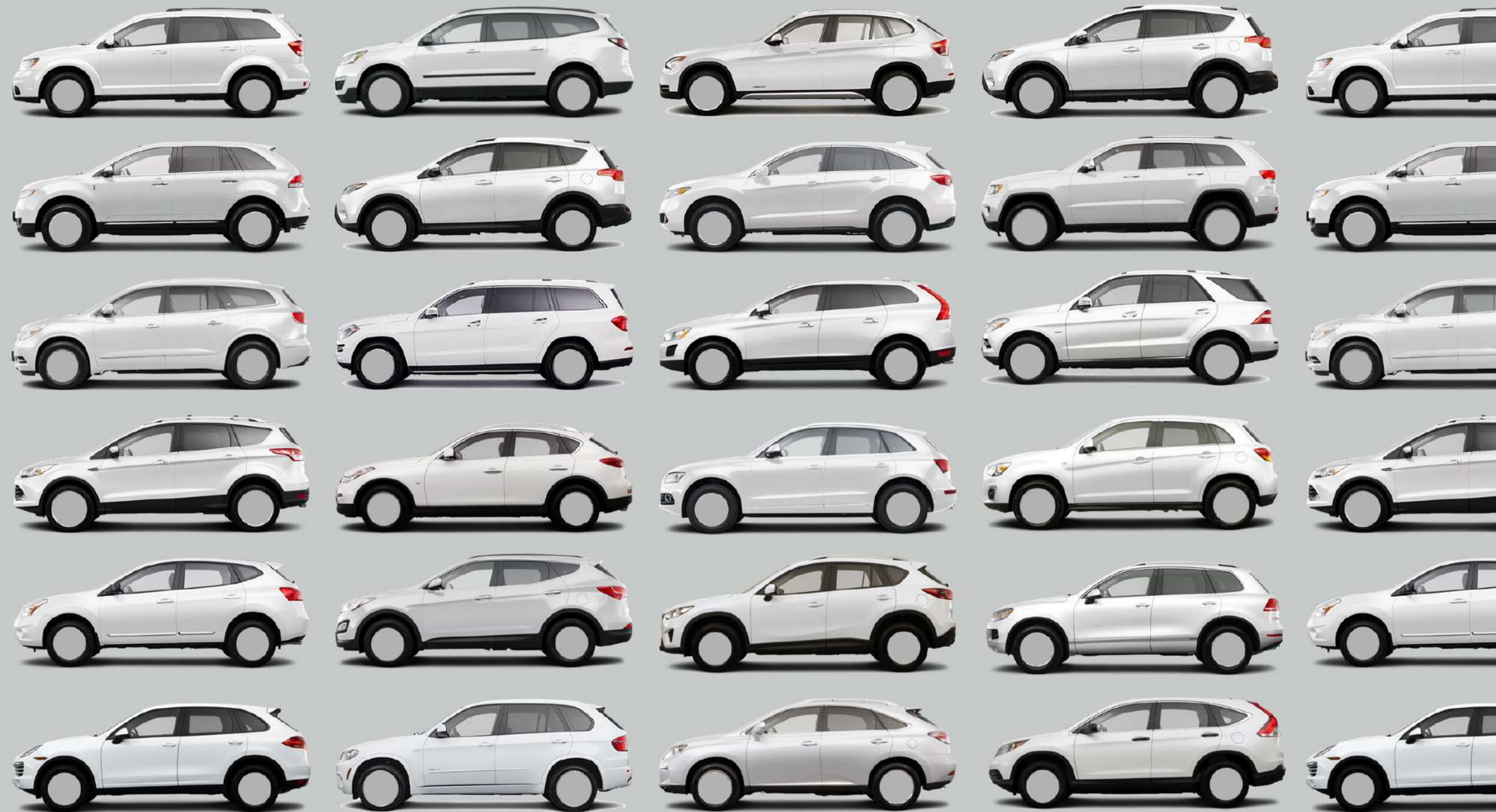


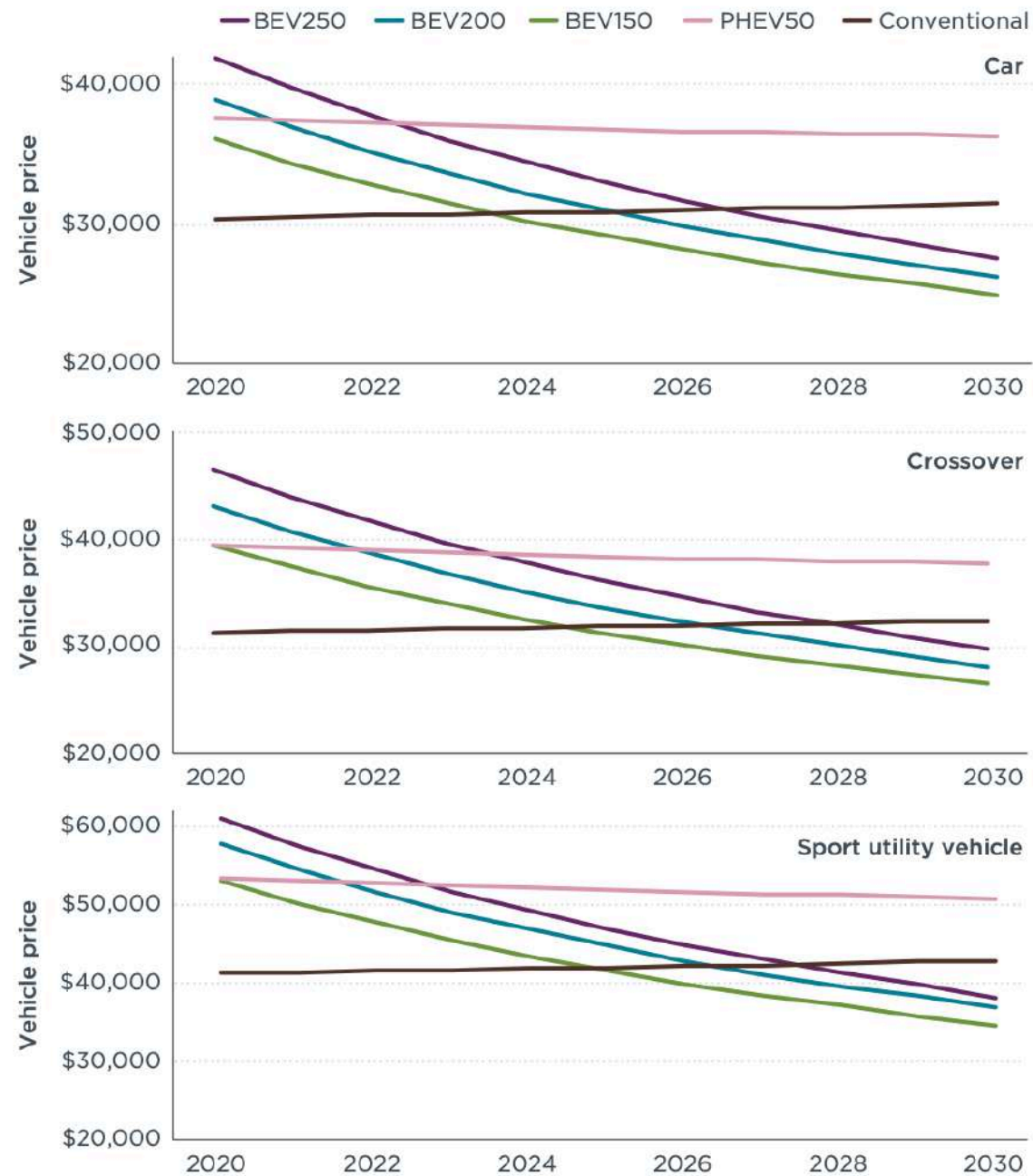


Flow of crude oil and gasoline to your local gas station



Source: U.S. Energy Information Administration



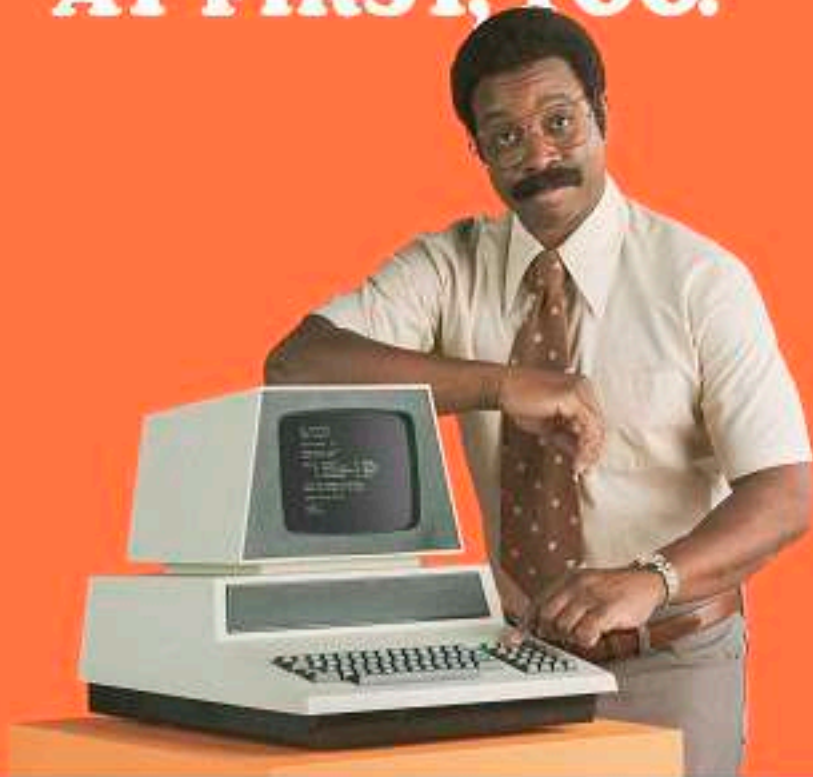


Source: International Council on Clean Transportation, *Update on electric vehicle costs in the United States through 2030*.

<https://theicct.org/publications/update-on-US-2030-electric-vehicle-cost>

Figure 4. Initial purchase price of conventional vehicles and electric vehicles for cars, crossovers, and SUVs for 2020–2030.

**COMPUTERS
SEEMED WEIRD
AT FIRST, TOO.**



**Electric cars.
They're
Normal Now.**



Image: Electrify America





TRANSPORTATION & CLIMATE INITIATIVE

Of the Northeast and Mid-Atlantic States

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[TCI'S REGIONAL POLICY DESIGN PROCESS 2019](#)



Public Workshop: July 30, 2019 in Baltimore

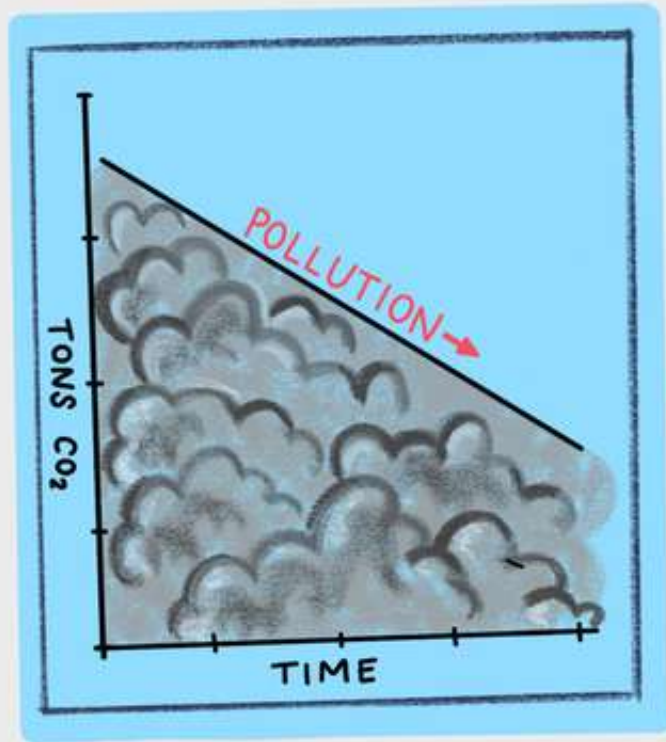
The Transportation and Climate Initiative hosted the public workshop: Low-Carbon Transportation Investments, Strategies, and Outcomes on July 30 in Baltimore.

[Read More](#)

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1 CAP POLLUTION



2 POLLUTERS PAY



3 COMMUNITIES BENEFIT



Image: Jessica Russo, Natural Resources Defense Council

Low Carbon Fuel Standards: A Critical Climate Policy Tool

- 10 June 2020

Colin Murphy Ph.D

Deputy Director – UC Davis Policy Institute for Energy, Environment, and the Economy

Who We Are:



Graduate Degree Programs

Transportation
Technology & Policy

Sustainable
Transportation
Energy Pathways

Plug-in Hybrid &
Electric Vehicle
Research Center

Energy Futures
Program

National Center for
Sustainable
Transportation (NCST)

UC Institute of
Transportation Studies

3 Revolutions Future
Mobility Center

China Center for
Energy and
Transportation

Sustainable Freight
Center

UC Pavement Research
Center



Energy Systems

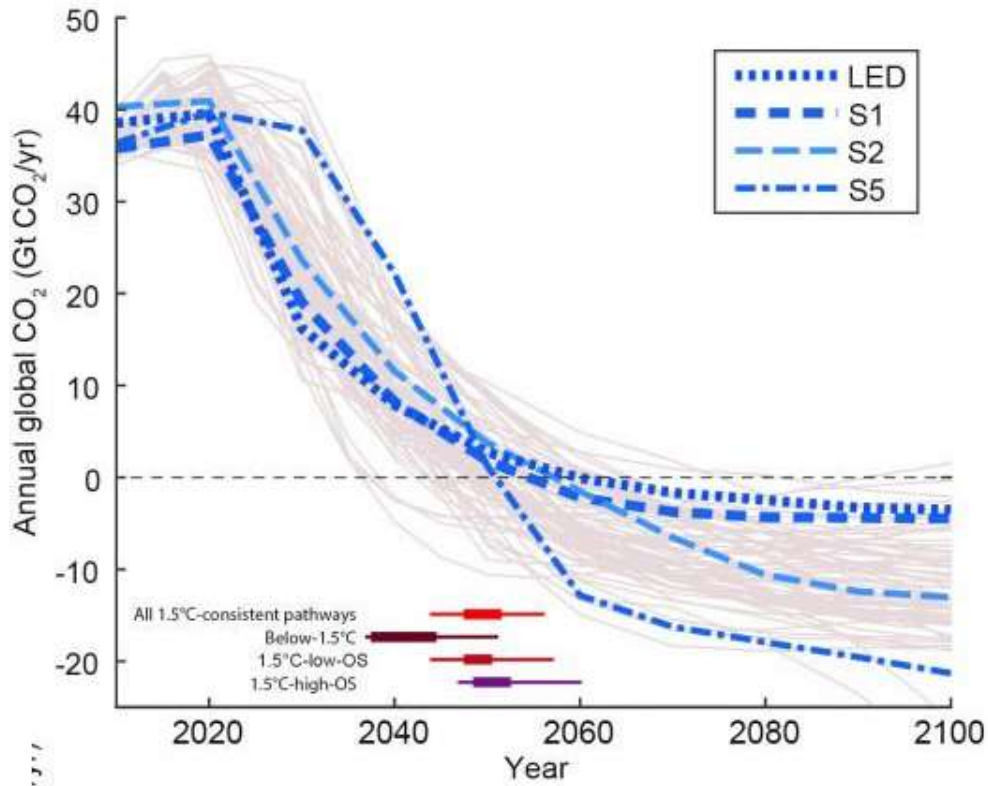
California Lighting
Technology Center

Western Cooling
Efficiency Center

Center on Water-
Energy Efficiency

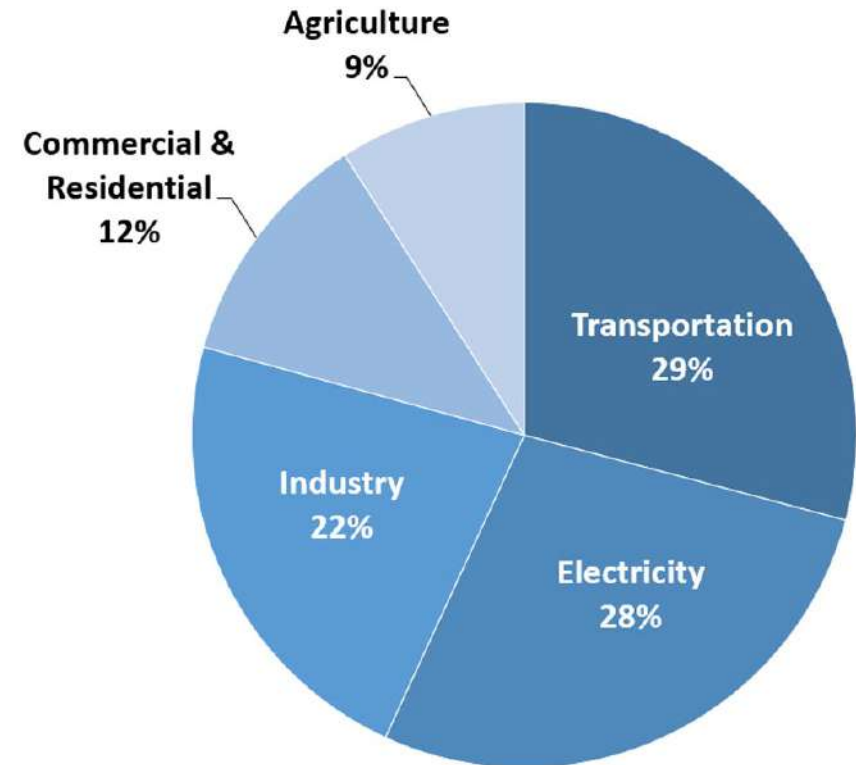
Program on
International Energy
Technologies

The Challenge: A Tale of Two Graphs



Source: IPCC Mitigation Pathways Compatible with 1.5°C in the Context of Sustainable Development, Figure 2.5.
https://www.ipcc.ch/site/assets/uploads/sites/2/2019/02/SR15_Chapter2_Low_Res.pdf

Total U.S. Greenhouse Gas Emissions by Economic Sector in 2017



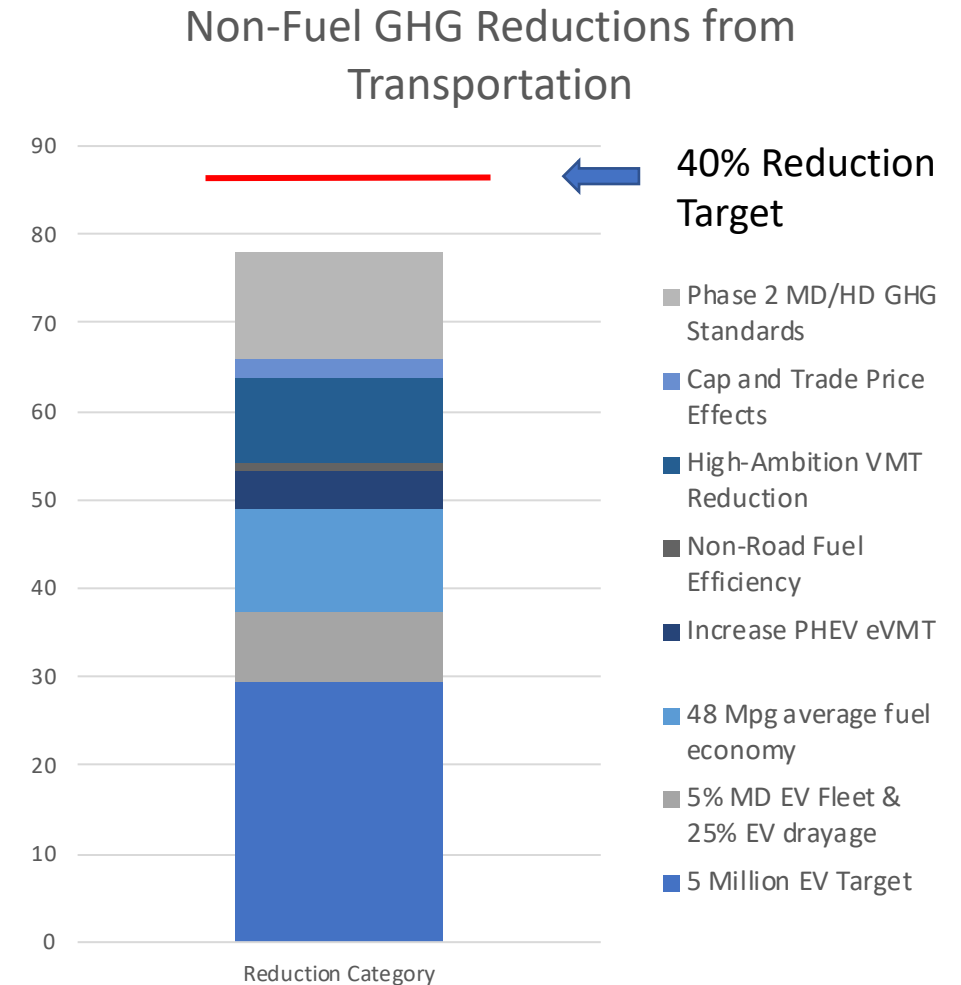
U.S. Environmental Protection Agency (2019). Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2017

Other Policies Can't Do Enough

- **California's 2030 Target: 40% Reduction**
- Transportation + Refinery Emissions = 215 Million Tonnes CO₂e in 2017
 - 40% Reduction = 86 million tonnes/year
- Even if all major non-fuel GHG policies yield reductions at the high end of their plausible range, transportation doesn't reduce emissions 40% by 2030.

• Emissions from 2017 GHG Data. All values approximate. Emissions reduction estimates adapted from *Half the Oil: Pathways for Petroleum Reduction on the West Coast*.

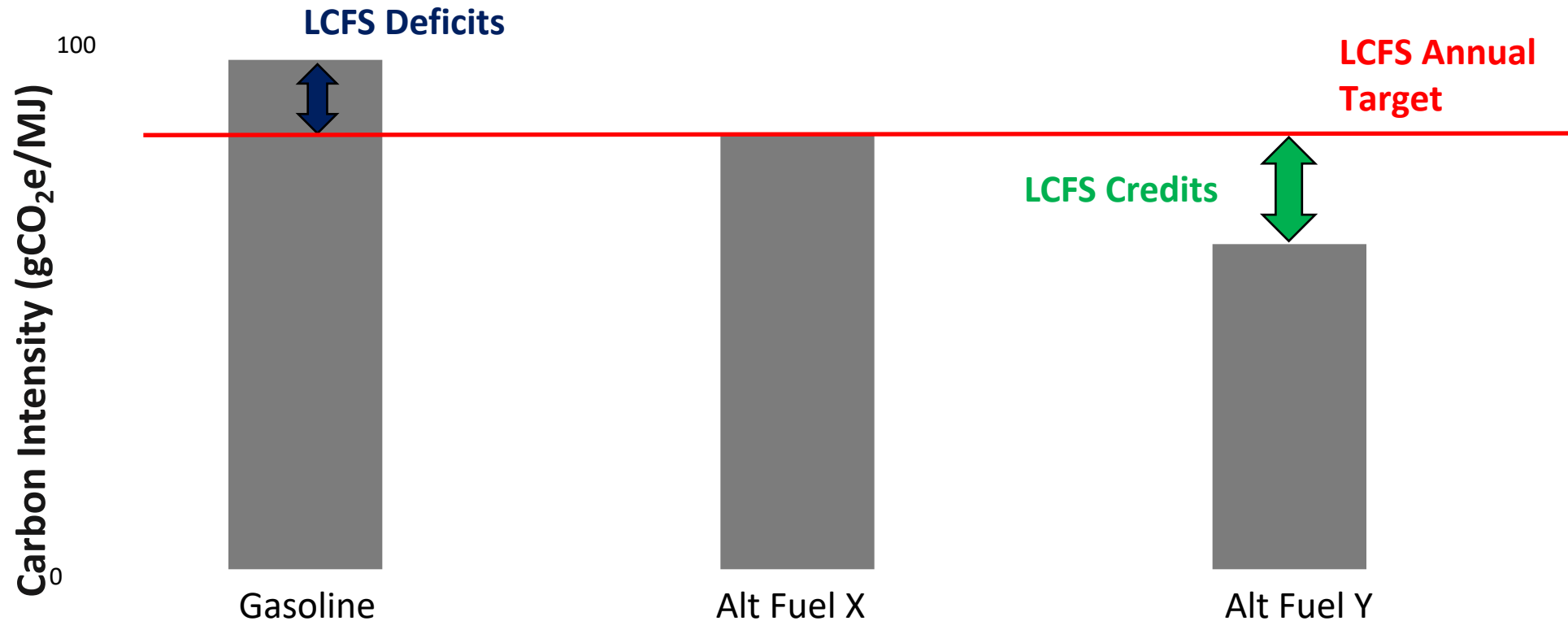
• <https://www.ucsusa.org/sites/default/files/attach/2016/01/ICF-Half-the-Oil-CA-WA-OR.pdf>



The Role for Fuels Policy

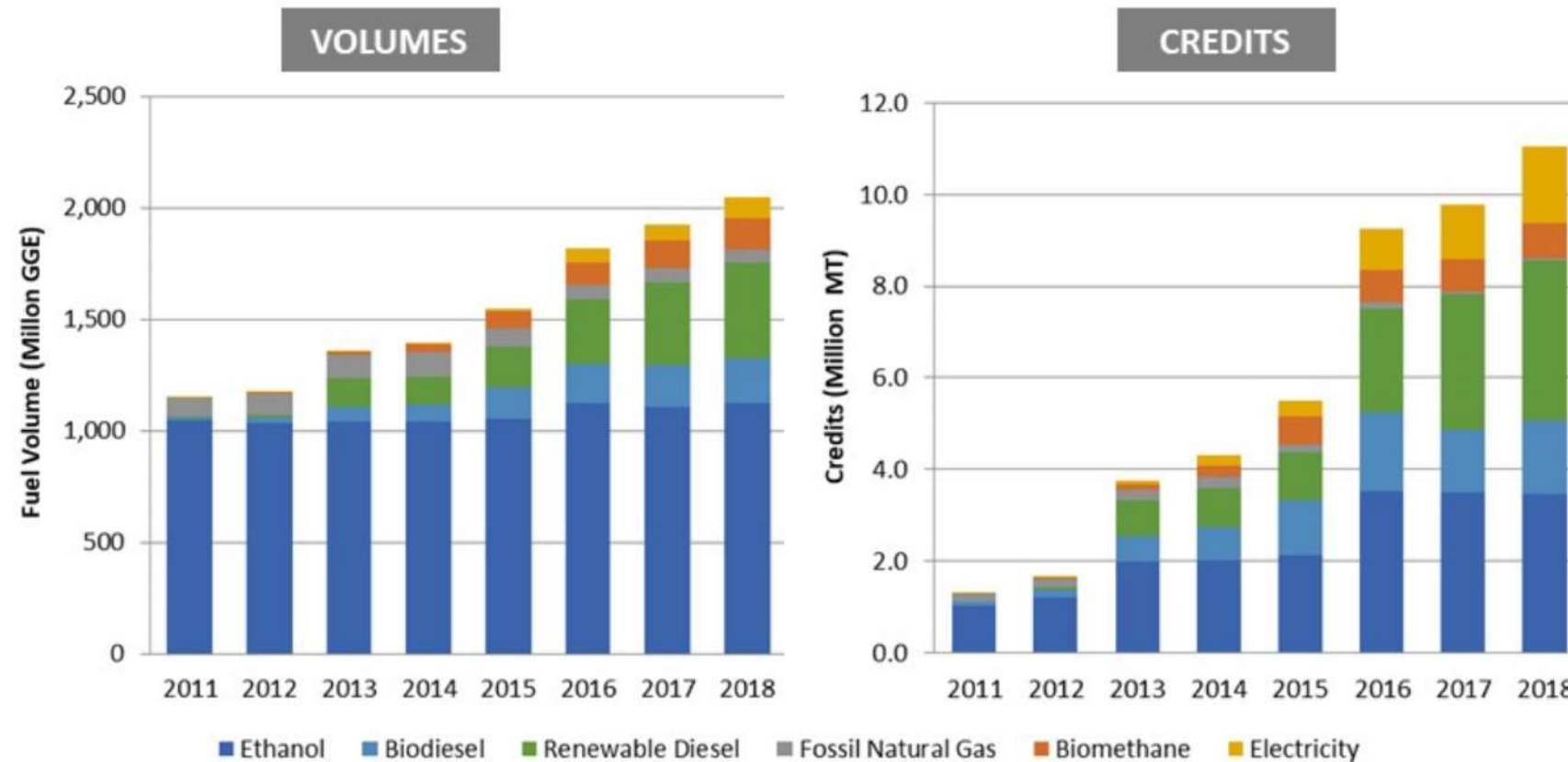
- Fleet turnover rate limits near and mid-term emission reductions from advanced technology vehicles (ZEVs, high-efficiency vehicles, non-liquid fuels)
 - Near and mid-term emission reductions matter
- Biofuels are the dominant (only?) near-mid term option for emission reduction from existing vehicles
- Without life cycle analysis, easy to get biofuels wrong
 - European palm oil biodiesel experience
- Need to balance incremental benefit of 1st gen fuels while providing large incentives for advanced, very low-carbon fuels.

Low Carbon Fuel Standard Sets a Carbon Intensity Target, Measures Fuels Against It

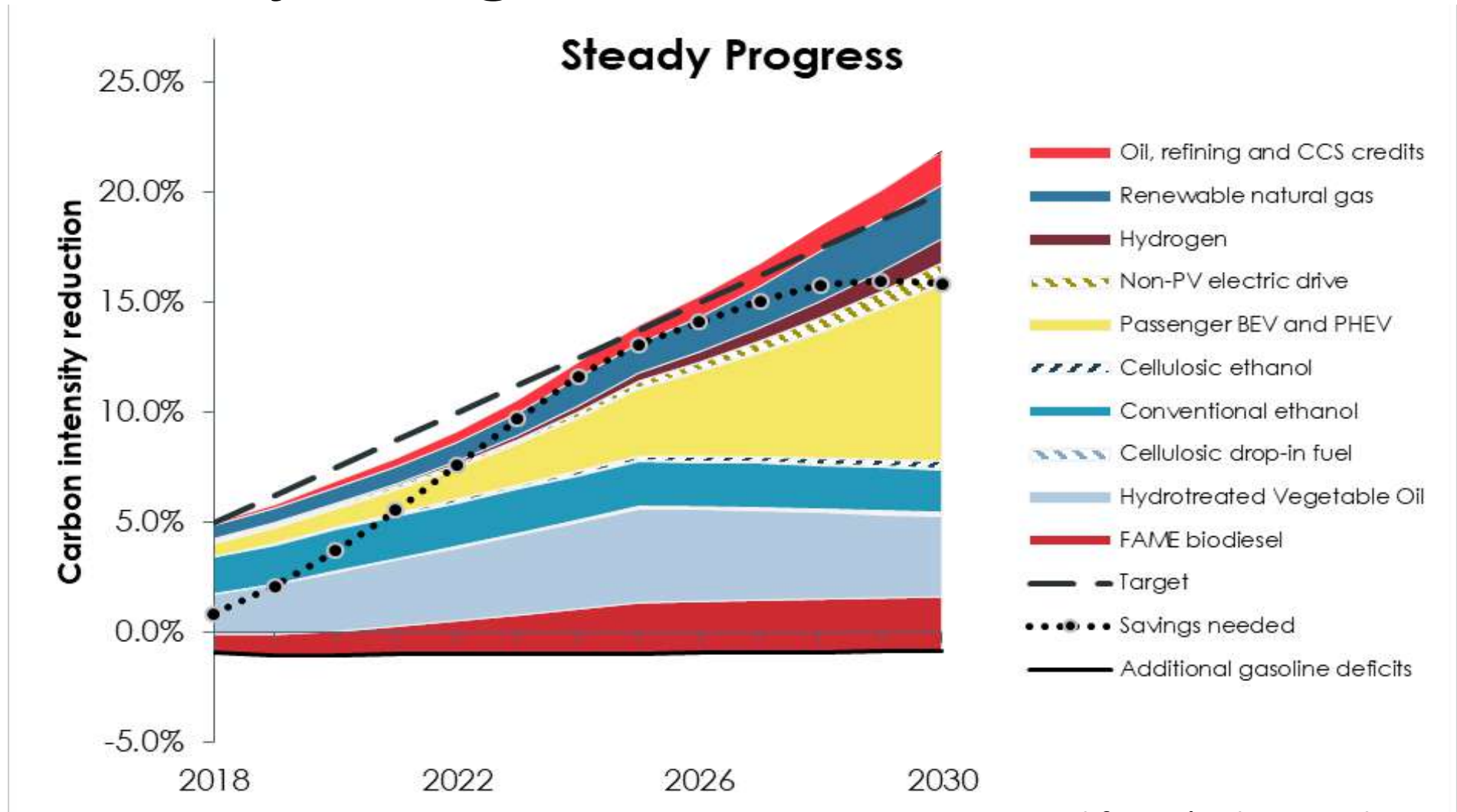


California's Experience So Far

Alternative Fuel Volumes and Credit Generation



LCFS – Projecting the Next Decade



Source: California's Clean Fuel Future

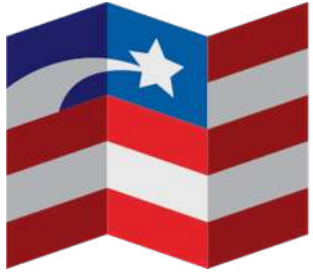
Other Jurisdictions Following CA

- **Oregon, British Columbia** – LCFS operational
- **Brazil** – RenovaBio program, liquid-fuel focused, just starting
- **Puget Sound Air Quality Mangement District** – proposal paused following State Supreme Court Decision on indirect emission sources
- **Washington State** – 2019 Legislative attemps failed, will try again in 2020
- **Canada (Federal)** – Draft Regulatory Approach comments received, revised proposal expected, may finalize in 2021.
- **Colorado** – Feasibility study being finalized
- **New York** – Legislative and administrative approaches paused by COVID-19
- **Midwestern states** – Early discussions

• Thank You!

- Colin Murphy Ph.D.
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- policyinstitute.ucdavis.edu
- Twitter: @scianalysis

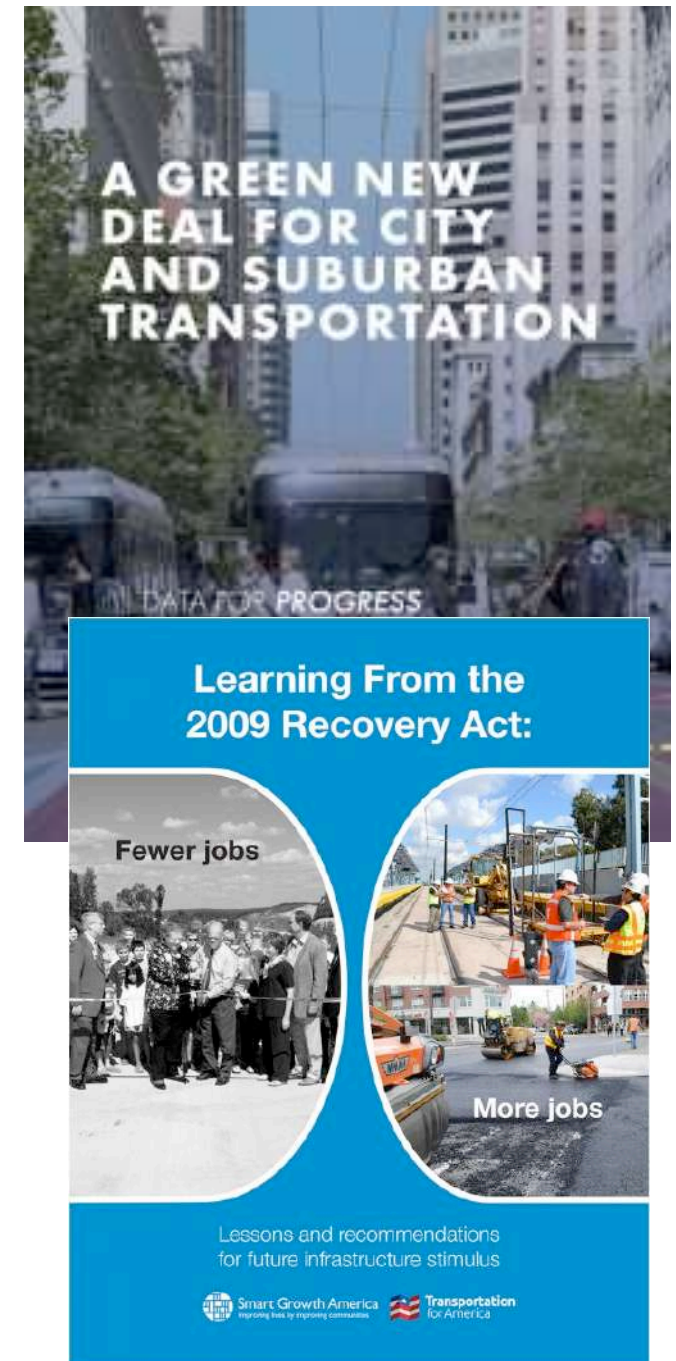
To receive updates regarding the Institute of Transportation Studies research, policy briefs and related work, sign up on our listserv via this link: its.ucdavis.edu/join-our-mailing-list/.



Transportation for America

Decarbonizing the Transportation Sector

Beth Osborne, Director
Transportation for America
June 10, 2020



Reducing GHG emissions from transportation

- Fuel switching / Auto manufacturers, Fuel providers
- Improving fuel efficiency with advanced design, materials, and technologies / Auto manufacturers
- Improving operating practices / Drivers, Operators
- Reducing travel demand / Employers, **Government**
- Reduce building on fringe / Developers, **Government**

Reducing travel demand and building on fringe

- Frequent, connected, safe transit that goes where people need to go
- New roadway design standards that support safety over speed
- Jobs and services placed close to homes
- Performance measures that judge whether the transportation system connects people to jobs and services and the impact of government investments on GHG emissions (buildings and transportation).

COVID-19 exposes long-term inequities

- Communities near highways have more PM-2.5 pollution.
- People of color are more likely to be in exposed communities.
- COVID-19 mortality is linked to PM-2.5 exposure.

**Union of
Concerned Scientists**
Science for a healthy planet and safer world

SEARCH

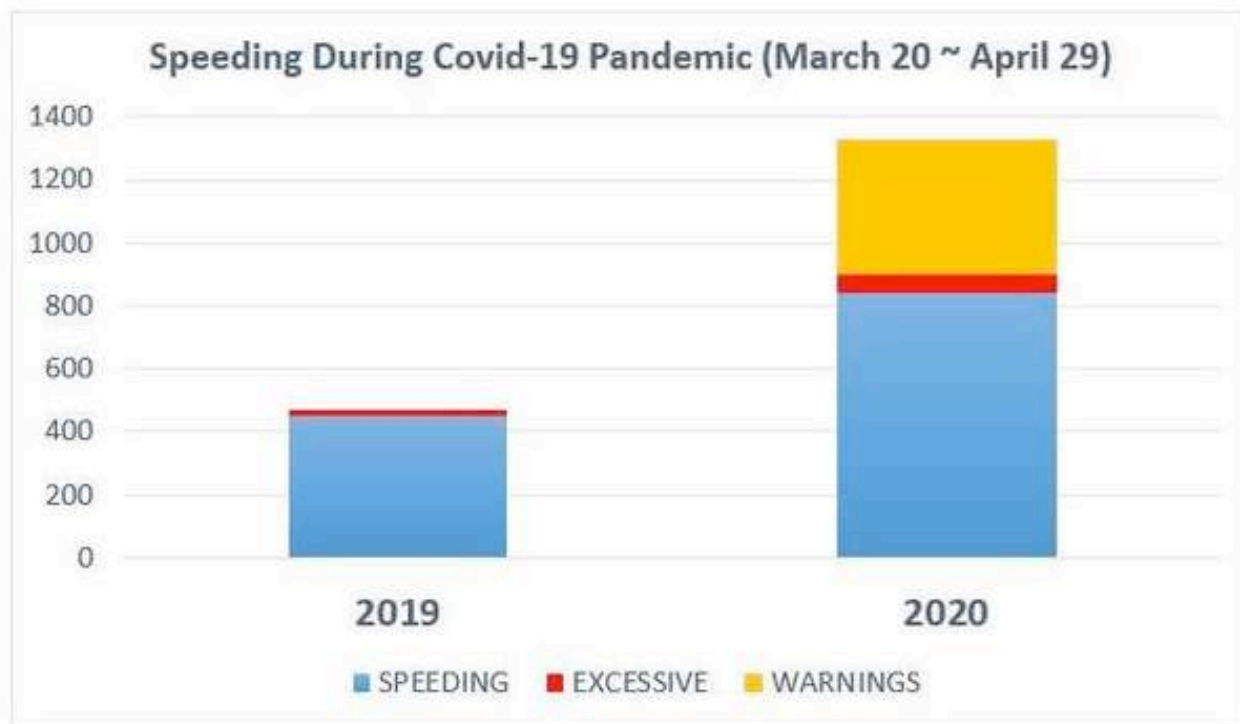
[BLOG] UNION OF CONCERNED SCIENTISTS



Numbers that Take Your Breath Away: COVID-19, Air Pollution, and Equity

MARIA CECILIA PINTO DE MOURA, SENIOR VEHICLES ENGINEER | APRIL 28, 2020, 12:05 PM EDT

COVID-19 has led to increases in speeding



**Amid Pandemic, Traffic Fell 50%
But Roadway Death Rate Doubled**

**The coronavirus pandemic
emptied America's roadways.
Now speeders have taken over.**

**Police see uptick in speeding, fatal
crashes amid pandemic**

In Connecticut, traffic is down, but fatal crashes are up by 40%.

The coronavirus pandemic emptied America's roadways. Now speeders have taken over.

Police see uptick in speeding, fatal crashes amid pandemic

In Connecticut, traffic is down, but fatal crashes are up by 40%.

UHP: 119 tickets for 100 mph+ drivers in 4 days as speeding trend continues

Amid Pandemic, Traffic Fell 50% But Roadway Death Rate Doubled

Six speeding drivers ticketed within an hour at Jean, Primm

Clear now that essential workers rely on transit



March 24, 2020

Transit Is Essential: 2.8 Million U.S. Essential Workers Ride Transit to Their Jobs

	Transit commuters
U.S. Workforce, 2018	7,614,524
U.S. Essential Workforce (see Appendix for definition)	2,759,929
Select Essential Industries	
Hospitals	320,456
Doctor's offices, other healthcare (not hospitals)	327,007
Nursing, care, and psychiatric facilities	110,479
Grocery & convenience stores	126,954
Pharmacies	40,448
Transit & taxi services	84,219
Waste management	12,957
Postal & courier services	51,528
Social services (e.g. food & housing services)	150,574
Public safety & armed forces	113,289

Many areas reprioritizing space on streets

Oakland to Open 74 Miles of Streets for Walkers and Cyclists

Heeding the call for more space to get outside while practicing social distancing, Oakland takes bold steps to open streets

By Roger Rudick | Apr 10, 2020 | 87 COMMENTS



Burlington expands 'Shared Streets' initiative during social distancing

By Aidan Quigley

Apr 10 2020 | no reader footnotes



VTDigger is posting regular updates on the coronavirus in Vermont on [this page](#). You can also [subscribe here](#) for regular email updates on the coronavirus. If you have any questions, thoughts or updates on how Vermont is responding to Covid-19, contact us at coronavirus@vtdigger.org



Some streets in Burlington will be closed to local traffic only and others "shared" to help with social distancing.

Many areas reprioritizing space on streets

Louisville closes major park loop roads for social distancing

Mayor Greg Fischer said Iroquois, Cherokee and Chickasaw park loop roads will close at 7 a.m. April 9.

Charlotte will close some streets to allow social-distance exercise during COVID-19.

Traverse City proposes pedestrian-only street to help social distance when businesses reopen

Denver Keeping Streets Closed To Allow Greater Social Distancing

Madison to open more roadways to pedestrians, cyclists with room to maintain social distancing

St. Paul, Minneapolis close streets for biking, walking through April 10. Should this last longer?

Opportunities for green and equitable recovery

- Learn from Recovery Act how to ensure funding goes to priorities (job creation, equity, climate)
- Reconsider shovel ready projects for relevance and priorities.
- Support transit and space for people.
- Provide resources to identify need and evaluate projects based on priorities.

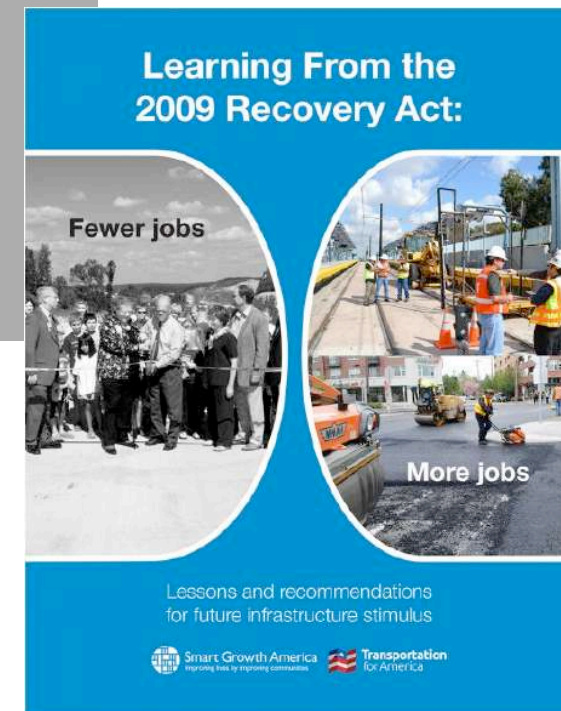
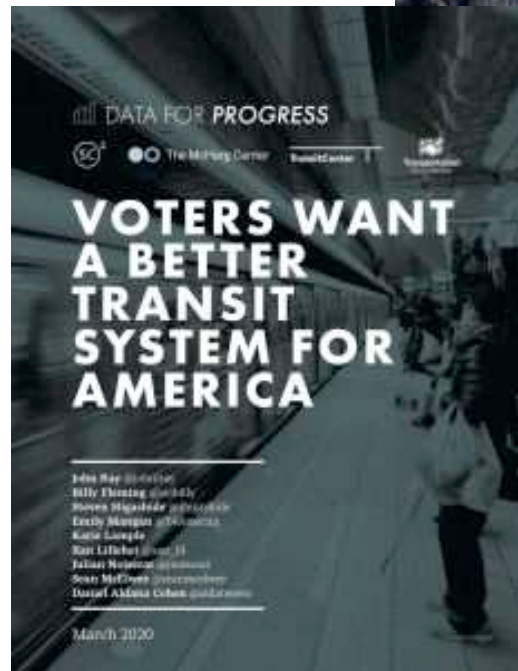
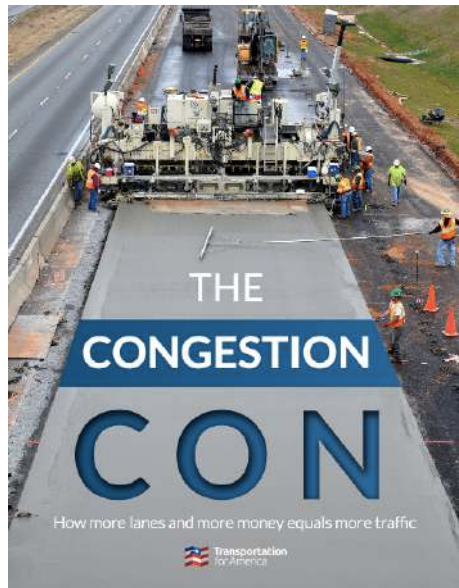




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Questions?

Please use the Q&A Box to submit your questions!