Committee on Transportation and Infrastructure
U.S. House of Representatives
Washington DC 20515

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March 12, 2021

SUMMARY OF SUBJECT MATTER

TO: Members, Committee on Transportation and Infrastructure
FROM: Staff, Committee on Transportation and Infrastructure
RE: Full Committee Hearing on "The Business Case for Climate Solutions"

PURPOSE

The Committee on Transportation and Infrastructure will meet on Wednesday, March 17, 2021, at 11:00 a.m. EDT in 2167 Rayburn House Office Building and via Cisco Webex to hold a hearing titled "The Business Case for Climate Solutions." The hearing will explore private sector actions to develop and implement solutions to climate change, with an emphasis on the surface transportation sector. The Committee will hear testimony from Proterra, Inc; Pacific Gas and Electric Company (PG&E); Pilot Flying J; WSP USA; AECOM; Wabtec Corporation; FedEx Corporation; and Citizens for Responsible Energy Solutions (CRES).

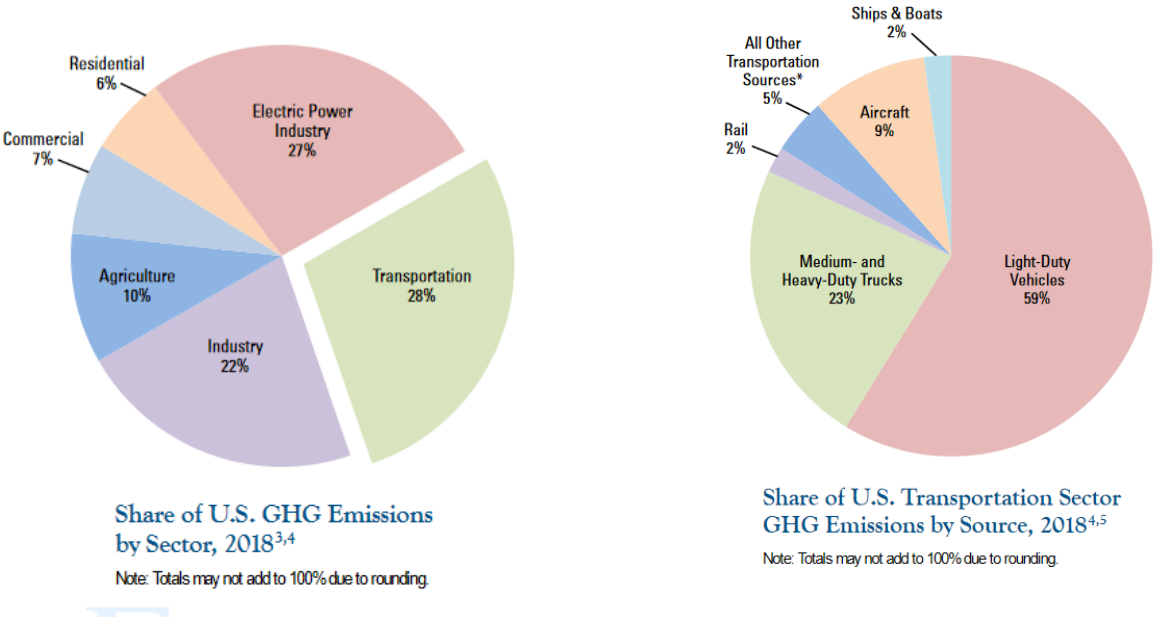
BACKGROUND

Climate Change and the Transportation Sector

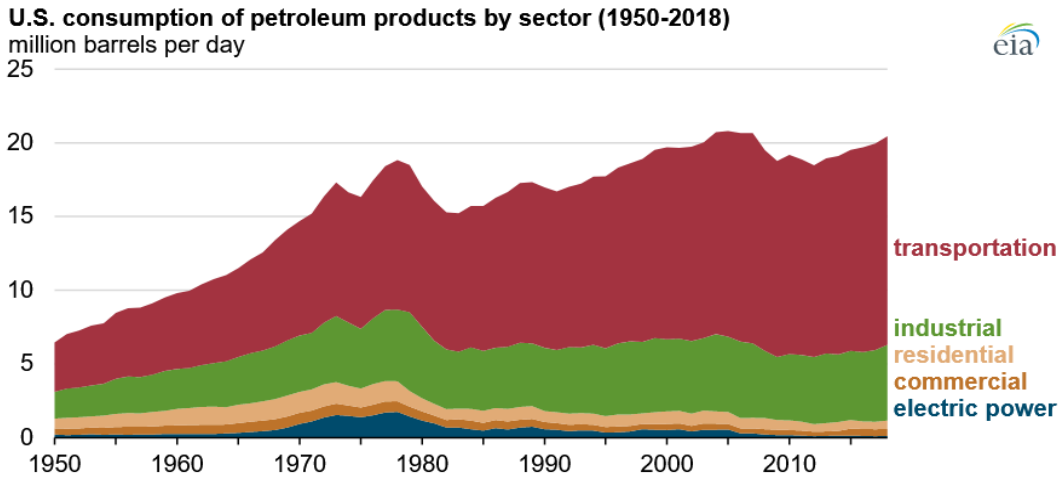
Global use of carbon has resulted in corresponding greenhouse gas emissions (GHGs), which is the dominant cause of climate change.[1] According to the Environmental Protection Agency (EPA), the transportation sector is the largest source of U.S. GHGs, at 28 percent of U.S. emissions.[2] Electric power and industry (iron, steel, chemical, and cement production) follow with 27 percent and 22 percent of emissions, respectively.[3] Within the transportation sector, light-duty vehicles and medium- and heavy-duty trucks account for 82 percent of those emissions, with aircraft accounting for 9 percent, rail accounting for 2 percent, ships and boats accounting for 2 percent and other forms of transportation—including buses and motorcycles—making up the remainder.[4]

[1] National Aeronautics and Space Administration. "The Causes of Climate Change." Accessed March 8, 2021.
[2] EPA. "Fast Facts on Transportation Greenhouse Gas Emissions," https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions. Accessed March 5, 2021.
[3] *Id.*
[4] *Id.*

The U.S. transportation sector has been the largest consumer of petroleum products since at least 1949, the first year for which the Energy Information Administration has data.[5] In 2018, the U.S. transportation sector consumed approximately 14 million barrels per day of petroleum products,[6] out of a total of 20.5 million barrels per day consumed in all sectors domestically.[7]



Source: EPA, https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100ZK4P.pdf



Source: Energy Information Administration https://www.eia.gov/todayinenergy/detail.php?id=40752.

[5] Energy Information Administration. "In the United States, most petroleum is consumed in transportation," https://www.eia.gov/todayinenergy/detail.php?id=40752. Accessed March 5, 2021.
[6] *Id.*
[7] *Id.*; *see also* Energy Information Administration. "Petroleum and other liquids," https://www.eia.gov/petroleum/. Accessed March 5, 2021.

The impacts of climate change can pose risks to our infrastructure, the economy, and communities nationwide. At the same time, transitioning to a more sustainable surface transportation system may bring the opportunity for new domestic jobs and a more competitive position in the global economy.[8]

Climate Change Mitigation and Resilience

As of 2019, the U.S. was leading the world in energy-related emissions reduction due to the expanding role of renewable energy sources and switching from coal to natural gas.[9] The COVID-19 pandemic led to a further drop in emissions, estimated at 7 percent in 2020.[10] U.S. GHG emissions are now below 1990 levels.[11]

However, between 1990 and 2018, GHG emissions in the transportation sector increased 24 percent, more than any other sector.[12] According to EPA, the increase is driven by increased demand for travel with vehicle miles traveled by light-duty motor vehicles increasing by 46.1 percent.[13] EPA attributes this increase to a confluence of factors including population growth, economic growth, urban sprawl, and periods of low fuel prices.[14] Without changes in carbon use, emissions will likely rise in tandem with increased economic activity as the U.S. recovers from the COVID-19 pandemic.[15]

Total carbon emissions have declined by nearly 11 percent since 2010.[16] Energy innovations have allowed the U.S. to decrease dependence on foreign energy with more net exports than imports since 2019.[17] As a result, public and private sector entities have a range of options by which to reduce the emissions generated by the transportation sector and to improve the resilience of the sector against the already-occurring impacts of climate change.

Mitigation of transportation related GHGs may be achieved through a variety of means. These can include: conversion of individual vehicles and fleets of vehicles to low- and zero-emission forms of power; provision of alternative charging and fueling infrastructure; provision of low- and zero-emission forms of transportation including transit, rail, walking, and biking; increased fuel economy standards that reduce the use of fossil fuels and associated operating costs for vehicle

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[8] E2. Clean Jobs America 2020. https://e2.org/wp-content/uploads/2020/04/E2-Clean-Jobs-America-2020.pdf. Accessed March 11, 2021.
[9] IEA. "Global CO2 Emissions in 2019." https://www.iea.org/articles/global-co2-emissions-in-2019. Accessed March 9, 2021.
[10] Global Carbon Project: Coronavirus causes 'record fall' in fossil-fuel emissions in 2020. https://www.carbonbrief.org/global-carbon-project-coronavirus-causes-record-fall-in-fossil-fuel-emissions-in-2020.
[11] Rhodium Group. "Preliminary US Greenhouse Gas Emissions Estimates for 2020." https://rhg.com/research/preliminary-us-emissions-2020/. Accessed March 9, 2021.
[12] EPA. Inventory of U.S. Greenhouse Gas Emissions and Sinks. https://www.epa.gov/sites/production/files/2020-04/documents/us-ghg-inventory-2020-chapter-executive-summary.pdf. Accessed March 10, 2021.
[13] *Id.*
[14] *Id.*
[15] Rhodium Group. "Preliminary US Greenhouse Gas Emissions Estimates for 2020." https://rhg.com/research/preliminary-us-emissions-2020/. Accessed March 11, 2021.
[16] IEA. "CO2 Emissions by Energy Source, United States 1990-2018." https://www.iea.org/countries/united-states. Accessed March 9, 2021.
[17] IEA. "Net Energy Imports, United States 1990-2019." https://www.iea.org/countries/united-states. Accessed March 9, 2021.

users;[18] improved operational practices to reduce idling and traffic congestion; shifting freight and passenger movements to more efficient modes; and innovations within the construction sector to reduce or trap emissions produced throughout the lifecycle of transportation projects. These types of interventions have the ability to reduce the transportation sector's GHGs.[19]

Because air pollution and greenhouse gases are often released from the same sources, reducing GHGs in an effort to slow climate change also reduces air pollutants, such as fine particulate matter (PM2.5).[20] Reducing these co-emitted air pollutants improves air quality and benefits human health.[21]

Resiliency, or strengthening the ability to anticipate, withstand, and recover from natural disasters and extreme weather, is also a central element of the U.S. response to the ongoing impacts of climate change. Resilient infrastructure pays off by saving at least $2 on average for every $1 spent.[22] Options to improve the resilience of the transportation system include: assessing vulnerability and identifying critical infrastructure; raising roadways and improving drainage; upgrading evacuation routes; relocating assets to higher ground or less flood-prone areas; using natural infrastructure to provide protection against extreme weather; stabilizing or strengthening facilities to protect against erosion and landslides; seeking distributed sources of power to maintain transportation services in the event of a disruption to the grid; and diversifying transportation options to ensure continuity of service following a natural disaster.[23]

Private Sector Actions to Address Climate Change

A growing number of corporations have set targets to reduce GHGs, and goals to achieve carbon neutrality by a certain date, some as early as 2030.[24] In the United States, 209 companies have joined the Science-Based Targets Initiative to set and disclose targets.[25] Worldwide, more than 1,200

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[18] Consumer Reports. "Electric Vehicle Ownership Costs: Today's Electric Vehicles Offer Big Savings for Consumers." 2020. https://advocacy.consumerreports.org/wp-content/uploads/2020/10/EV-Ownership-Cost-Final-Report-1.pdf. Accessed March 8, 2021.

[19] EPA. "Sources of Greenhouse Gas Emissions: Transportation Sector Emissions." https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions. Accessed March 10, 2020.

[20] West, J., Smith, S., Silva, R. et al. "Co-benefits of mitigating global greenhouse gas emissions for future air quality and human health." Nature Climate Change 3, 885–889 (2013). https://www.niehs.nih.gov/research/programs/geh/geh_newsletter/2013/12/spotlight/reducing_greenhouse_gas_emissions_can_improve_air_quality_and_save_lives_.cfm#:~:text=Because%20air%20pollution%20and%20greenhouse,quality%20and%20benefits%20human%20health. Accessed March 8, 2021.

[21] *Id.*

[22] Engineering News-Record. "Resilient Infrastructure Could Save $4.2 Trillion." https://www.enr.com/articles/47135-resilient-infrastructure-could-save-42-trillion. Accessed March 9, 2021.

[23] Federal Highway Administration. "Vulnerability Assessment and Adaption Framework, 3rd Ed." (2017) https://www.fhwa.dot.gov/environment/sustainability/resilience/adaptation_framework/chap00.cfm. Accessed March 10, 2021; Federal Highway Administration. "Synthesis of Approaches for Addressing Resilience in Project Development." (2017).

[24] In January 2020, Microsoft announced it would be carbon negative by 2030. https://news.microsoft.com/climate/#january-carbon-announcement. Accessed March 7, 2021.

[25] Science-Based Targets. "Companies Taking Action." https://sciencebasedtargets.org/companies-taking-action. Accessed March 7, 2021.

companies have taken such action.[26] These voluntary actions by corporations demonstrate businesses' steps in reducing emissions.

Many corporations are formally calling for public policy solutions, in addition to setting their own targets, to achieve a higher scale of emissions reductions. On January 20, 2021, the U.S. re-started the process to join to the Paris Agreement and on February 19, 2021, officially rejoined.[27] Under the agreement, the U.S. promises to reduce its emissions by about 25 percent from 2005 levels by 2025.[28] The U.S. was already on track to reduce emissions by about 17 percent.[29] Broader policy changes and innovations may help achieve the emissions reductions necessary for the U.S. to meet its commitments under the Paris agreement.

The CEO Climate Dialogue, which includes 22 major U.S. corporations among its members, states in its guiding principles: "It is urgent that the President and Congress put in place a long-term federal policy as soon as possible to protect against the worst impacts of climate change."[30] In December 2020, 47 leading U.S. companies issued a statement letter urging "President-elect Joe Biden and the new Congress to work together to enact ambitious, durable, and bipartisan climate solutions."[31]

The U.S. Chamber of Commerce updated its position on climate change in January 2021 to include support for "a market-based approach to accelerate GHG emissions reductions across the U.S. economy."[32] In September 2020, the Business Roundtable issued new principles on climate change, calling for market-based solutions and a "complementary suite of policies to drive innovation, significantly reduce greenhouse gas emissions and limit global temperature rise."[33] On March 1, 2021, the Association of American Railroads (AAR) released a report stating "the rail industry recognize(s) that the climate is changing. If action is not taken, climate change will have significant repercussions for the planet, our economies, our society, and even day-to-day railroad operations."[34]

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[26] *Id.*

[27] Press Release, U.S. State Department, The United States Officially Rejoins the Paris Agreement, Feb. 19, 2021, available at https://www.state.gov/the-united-states-officially-rejoins-the-paris-agreement/; The Paris Agreement is a multi-lateral treaty, negotiated in 2015, in which developed countries commit to making the individual GHG reduction, contributions necessary to halt the overall rate of temperature increase. See: https://unfccc.int/process-andmeetings/the-paris-agreement/the-paris-agreement; https://www.aar.org/wp-content/uploads/2021/02/AARClimate-Change-Report.pdf.

[28] OBP. "U.S. Officially Rejoins Paris Agreement on Climate Change." Feb. 19, 2021. https://www.opb.org/article/2021/02/19/u-s-officially-rejoins-paris-agreement-on-climate-change/.

[29] *Id.*

[30] CEO Climate Dialogue. "Guiding Principles for Federal Action on Climate." https://www.ceoclimatedialogue.org/guiding-principles. Accessed March 7, 2021.

[31] Center for Climate and Energy Solution. "Top Companies Call for Ambitious U.S. Climate Policy." https://www.c2es.org/content/top-companies-call-for-ambitious-us-climate-policy/. Accessed March 7, 2021.

[32] U.S. Chamber of Commerce. "Our Approach to Climate Change." https://www.uschamber.com/climate-change-position. Accessed March 7, 2021.

[33] Business Roundtable. "Addressing Climate Change." https://www.businessroundtable.org/climate. Accessed March 7, 2021.

[34] American Assn. of Railroads. "Freight Railroads & Climate Change." https://www.aar.org/wp-content/uploads/2021/02/AAR-Climate-Change-Report.pdf. Accessed March 7, 2021.

Climate-Related Transportation Legislation from the 116th Congress

H.R. 2, the *Moving Forward Act*

On July 1, 2020, the House of Representatives passed with a bipartisan vote of 233-188 the Majority's H.R. 2, the *Moving Forward Act*, which included a surface transportation reauthorization proposal titled the *Investing in a New Vision for the Environment and Surface Transportation in America* (INVEST in America) *Act*. The *INVEST in America Act* proposed several provisions related to climate change mitigation and resilience. The bill proposed investments in:

- A new carbon pollution reduction apportionment program to fund highway, transit, and rail projects that would reduce greenhouse gases.[35]
- A new resilience-focused pre-disaster mitigation program to help States prepare for and reduce the impacts of climate change and extreme weather.[36]
- Transit, rail, pedestrian, and bicycle funding to provide more transportation options.[37]
- Alternative charging and fueling infrastructure to support Americans in shifting to lower-emission vehicles.[38]
- A locally-driven climate discretionary grant program, allowing communities to advance innovative solutions to reducing carbon pollution.[39]
- Deployment of technologies that would reduce greenhouse gas emissions from the surface transportation system.[40]
- Lower-emission multimodal freight projects.[41]
- Zero-emission buses to reduce greenhouse gases and other air pollutants.[42]
- A new sustainable highway materials research, development, and deployment program to reduce or sequester greenhouse gases generated during production and construction.[43]
- A new gridlock reduction program focused on operational improvements, travel demand management, and multi-modal solutions to traffic congestion.[44]

The bill also proposed policy changes to support climate change mitigation and resilience by:

- Clarifying that the Federal Highway Administration's (FHWA) Emergency Relief Program may be used for resilience betterments.[45]
- Reforming the largest highway construction program to ensure that States also consider operational improvements and transit when proposing additional highway capacity.[46]
- Establishing a new greenhouse gas performance measure to track States' progress in reducing carbon pollution from our highway system.[47]

[35] Division B, title I, section 1213.
[36] Division B, title I, section 1202.
[37] Divisions B and D.
[38] Division B, title I, section 1303.
[39] Division B, title I, section 1302.
[40] Divisions B and D.
[41] See, e.g., division B, title I, section 1212.
[42] Division B, title II, sections 2101 and 2403.
[43] Division B, title I, section 5302.
[44] Division B, title I, section 1306.
[45] Division B, title I, section 1203.
[46] Division B, title I, section 1201.
[47] Division B, title I, section 1403.

- Creating new incentives for transit-oriented development to provide more Americans access to walkable and transit-supportive communities.[48]
- Ensuring consideration of climate mitigation and resilience through the planning process to encourage sustainable building for the future.[49]
- Modifying federal design standards to support context-sensitive street design and support the use of low- and zero-emission modes.[50]
- Requiring a National Academies of Science assessment of the potential impacts of climate change on the national rail network.[51]
- Spurring Amtrak to improve passenger rail service to encourage a shift towards passenger rail which produces less greenhouse gas emissions.[52]

H.R. 7248, the *STARTER Act*

On June 18, 2020, Ranking Member Sam Graves introduced H.R. 7248, the *Surface Transportation Advanced through Reform, Technology, and Efficient Review* (STARTER) *Act*, a five-year surface transportation reauthorization bill.

The bill proposed policy changes to support climate change mitigation and resiliency by:

- Establishing the Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT) grant program to fund highway projects that reduce the cost and risk related to natural disasters (*Sec. 7001*).
- Modifying the purpose of the National Highway Performance Program (NHPP) to incorporate resiliency measures to diminish the impacts of natural disasters (*Sec. 7002*).
- Allowing States to use up to 15 percent of NHPP funds for protective features to improve the resiliency of a Federal-aid highway or bridge off the National Highway System (*Sec. 7002*).
- Establishing that funding under the Federal Transit Administration's (FTA) Emergency Relief Program for mitigation activities will support projects that are cost beneficial and will reduce actual risk (*Sec. 7003*).
- Clarifying that FHWA's Emergency Relief Program may be used for projects related to wildfires and sea level rise (*Sec. 7004*).
- Permitting funding under the FHWA's Emergency Relief Program to be used for mitigation projects that are demonstrated to mitigate against and reduce the risk of recurring damage from extreme weather events, flood, and other disasters (*Sec. 7004*).
- Authorizing an increase in the Federal cost share in highway funding for activities that are designed and demonstrated to reduce cost and risk associated with extreme weather (*Sec. 7005*).
- Extending University Transportation Centers' research focus to mitigation and resiliency (*Sec. 7009*).

[48] Division B, title II, subtitle G.
[49] Division B, title I, sections 1202, 1401, and 1402.
[50] Division B, title I, section 1107.
[51] Division D, title I, section 9106.
[52] Division D, title II.

- Establishing a five-year pre-disaster mitigation pilot program under the FHWA with funding to support projects that substantially reduce the risk of or increase the resilience to future damage from weather events (*Sec. 7010*).

This Congress the Committee will continue work on a surface transportation reauthorization ahead of the expiration of the current surface transportation programs on September 30, 2021.

WITNESS LIST

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