

The logo for the LCA Policy Council is a dark teal square. Inside the square, the words "LCA", "POLICY", and "COUNCIL" are stacked vertically in white, uppercase, sans-serif font. The text is enclosed within a white rectangular border that is open on the top and right sides.

LCA  
POLICY  
COUNCIL

# Charter Meeting

February 2021

# LCA Policy Council



Bringing together industry and regulatory leaders to chart the course on sound, effective life cycle analysis policies and actions.

Discussion topics:

- ▶ The need for Life Cycle policies
- ▶ Where the federal government is heading on LCA
- ▶ How LCA is viewed differently
- ▶ LCA in terms of national security



# The Need to Look at Life Cycle Analysis?

- ▶ **New Economy:** America and its manufacturing sector will be seeking major transformation over the next 15 years to reduce energy consumption and carbon footprint.
- ▶ **Supply Chain:** The economic opportunity for countries – and companies – that can advance a sustainable supply chain is massive.
- ▶ **New Regulations:** Regulatory changes are expected to dramatically alter the way manufactures operate and hire and train workers.
- ▶ **National Security:** Our military must address climate change and understand how to respond to our energy supply as an issue for our security.
- ▶ **Global Pressures:** Other nations are expecting manufacturers account for their environmental footprint. The cost of employing different LCA models can be difficult, costly, and create uncertainty.
- ▶ **Transportation and Fuels:** Advance a technology neutral approach to address climate and environmental concerns including how to manage LCFS, propulsion systems, etc.

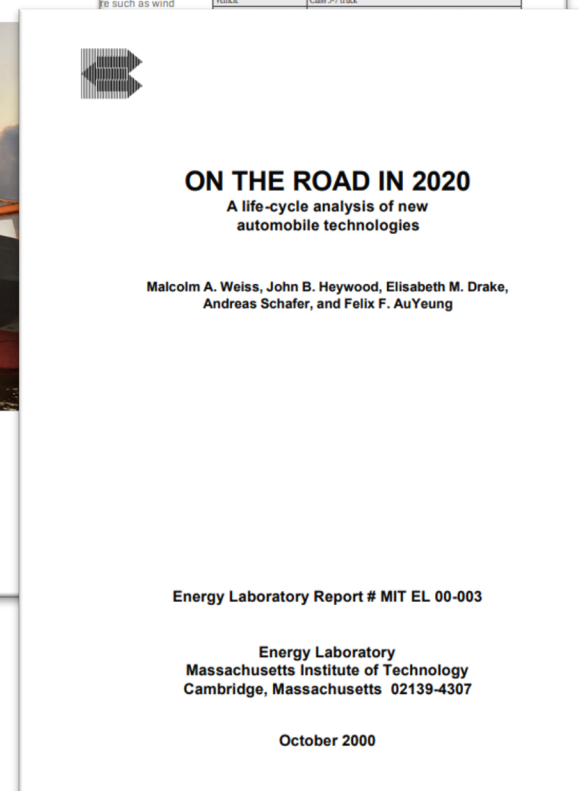
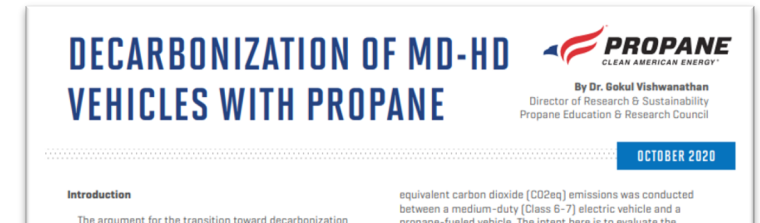
# LCA: The Social Cost of Carbon

## Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis

**Sec. 5. Accounting for the Benefits of Reducing Climate Pollution.** (a) It is essential that agencies capture the full costs of greenhouse gas emissions as accurately as possible, including by taking global damages into account. Doing so facilitates sound decision-making, recognizes the breadth of climate impacts, and supports the international leadership of the United States on climate issues. The “social cost of carbon” (SCC), “social cost of nitrous oxide” (SCN), and “social cost of methane” (SCM) are estimates of the monetized damages associated with incremental increases in greenhouse gas emissions. They are intended to include changes in net agricultural productivity, human health, property damage from increased flood risk, and the value of ecosystem services. An accurate social cost is essential for agencies to accurately determine the social benefits of reducing greenhouse gas emissions when conducting costbenefit analyses of regulatory and other actions.

# Life Cycle Analysis: What's coming

- ▶ President Biden's Executive Orders
  - Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis
  - Major Economies Forum on Energy and Climate Leaders' Climate Summit
  - Procurement (Made in America) Rules
- ▶ Cleaner Trucks Initiative
- ▶ Transportation Re-Authorization
- ▶ CA's Advanced Clean Trucks and Omnibus
- ▶ CA's Advanced Clean Cars II
- ▶ Renewable Fuel Standard and Low Carbon Fuel Standard
- ▶ Phase 3
- ▶ USMCA (Process and production methods. Specify criteria for how a product is manufactured, harvested, or taken)



# Life Cycle Analysis... what's not happening... *and what we hope to accomplish*

- ▶ **Acceptance and Integration of LCA Modeling:** LCA is not readily defined by government agencies and is not making its way into top-level policy and influencer discussions.
- ▶ **Policy Considerations:** LCA is not a core consideration in the multiple policy areas that should be aware of its impact on costs, jobs and supply chains.
- ▶ **Impact on Manufacturers:** There needs to be more coordinated planning around LCA as new regulations force manufacturers to reshape their industries. (Example: lithium supply chain into national security, example GM all-electric into EPA CAFE rulemaking)
- ▶ The LCA Policy Council will serve as a forum to:
  - ▶ Develop a more functional approach to the use and thinking of LCA as a tool for industry to coalesce around and support.
  - ▶ Establish a network of expertise for the application of LCA into critical policy areas.
  - ▶ Be the hub for broad implementation of LCA policy.

# LCA - Viewed differently by many

- ▶ **Argonne:** Argonne's Energy Systems Division has been developing the **GREET (Greenhouse Gases, Regulated Emissions, and Energy use in Transportation)** model to provide a common, transparent platform for lifecycle analysis (LCA) of alternative combinations of vehicle and fuel technologies.
- ▶ **EPA:** LCA is an environmental accounting and management approach that considers all the aspects of resource use and environmental releases associated with an industrial system from cradle-to-grave. Specifically, it is a holistic view of environmental interactions that cover a range of activities, from the extraction of raw materials from the Earth and the production and distribution of energy, through the use, and reuse, and final disposal of a product. [Link to EPA site](#).
- ▶ **China:** The **Tsinghua University Life Cycle Analysis Model (TLCAM)** is applied to calculate the life cycle fossil energy consumption and greenhouse gas (GHG) emissions for more than 20 vehicle fuel pathways in China. [Link to study](#)
- ▶ **European Union: Global Guidance on Environmental Life Cycle Impact Assessment Indicators (GLAM):** The aim of this initiative, under the United Nations Environmental Programme umbrella, is to enhance global consensus on environmental life cycle impact assessment indicators, generating tangible and practical recommendations for different environmental indicators and characterization factors used in Life Cycle Impact Assessments (LCIA). [Link to GLAM Page](#)
- ▶ **President Biden: Executive Order on Tackling the Climate Crisis at Home and Abroad:** An accurate social cost is essential for agencies to accurately determine the social benefits of reducing greenhouse gas emissions when conducting costbenefit analyses of regulatory and other actions... [Link to Executive Order](#)

# LCA Policy Council: The opportunity to lead

- ▶ Sustainability policies across the globe are increasingly turning to life cycle assessment (LCA) to guide challenging decisions and select between technology paths, driven by carbon footprinting. [The changing nature of life cycle assessment](#)
- ▶ FY2021 Energy and Water Appropriations Committee Report

The Committee supports existing work to develop a lifecycle model that fully evaluates energy and emission impacts of advanced and new transportation fuels, the fuel cycle from well to wheel, and the vehicle cycle through material recovery and vehicle disposal. The Committee encourages further research to develop standardized modeling that establishes a tool that can be used for future lifecycle analysis reporting and accounting.

H.R.7613: <https://www.congress.gov/116/crpt/hrpt449/CRPT-116hrpt449.pdf>

- ▶ The LCA Policy Council should serve as a strong mechanism to deliver value to agencies as they integrate LCA modeling into future standards and regulations.



# LCA: Climate Risk Analysis



## Executive Order on Tackling the Climate Crisis at Home and Abroad

- ▶ (c) The Secretary of Defense, in coordination with the Secretary of Commerce, through the Administrator of the National Oceanic and Atmospheric Administration, the Chair of the Council on Environmental Quality, the Administrator of the Environmental Protection Agency, the Director of National Intelligence, the Director of the Office of Science and Technology Policy, the Administrator of the National Aeronautics and Space Administration, and the heads of other agencies as appropriate, shall develop and submit to the President, within 120 days of the date of this order, an analysis of the security implications of climate change (Climate Risk Analysis) that can be incorporated into modeling, simulation, war-gaming, and other analyses.
- ▶ (d) The Secretary of Defense and the Chairman of the Joint Chiefs of Staff shall consider the security implications of climate change, including any relevant information from the Climate Risk Analysis described in subsection (c) of this section, in developing the National Defense Strategy, Defense Planning Guidance, Chairman's Risk Assessment, and other relevant strategy, planning, and programming documents and processes. Starting in January 2022, the Secretary of Defense and the Chairman of the Joint Chiefs of Staff shall provide an annual update, through the National Security Council, on the progress made in incorporating the security implications of climate change into these documents and processes.

# CLIMATE CHANGE IS A NATIONAL SECURITY PRIORITY

## A CALL TO ACTION

Climate change impacts the world and the way the US Military operates in it, both abroad and at home. Climate change:

- threatens critical infrastructure;
- increases global instability;
- devalues U.S. leadership;
- serves as a significant threat multiplier.

Climate effects impact our military readiness and climate change is currently threatening more than two-thirds of our critical operation infrastructure.[1]

These effects are seen in how the Department of Defense handles many aspects of operation from training, supply chains, construction, equipment and deployments. The effects of climate change impact operations when the military confronts changing sea routes in the Arctic, natural disasters such as floods, droughts and wildfires, increasing refugee movement and political instability due to climate change.

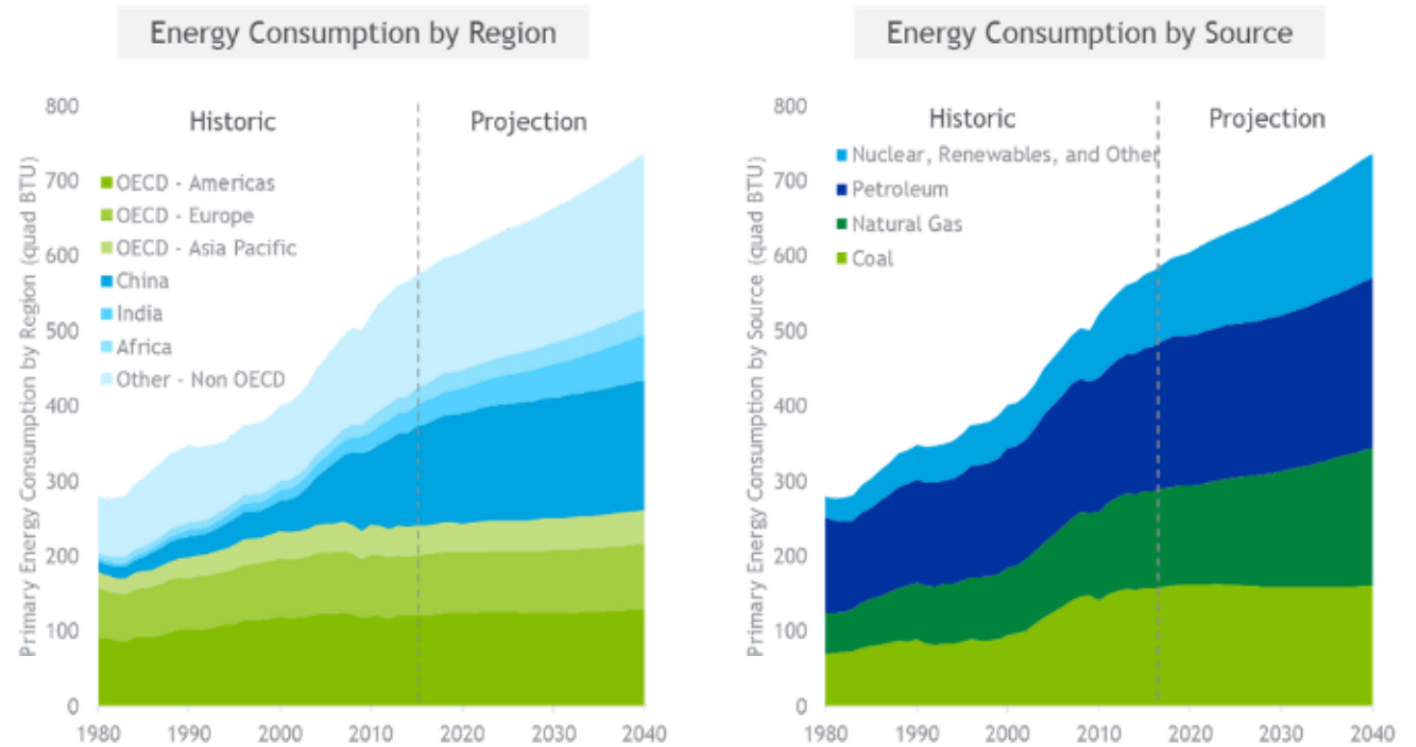
*"Climate change is impacting stability in areas of the world where our troops are operating today. It is appropriate for the Combatant Commands to incorporate drivers of instability that impact the security environment in their areas into their planning."*

**Secretary of Defense, James Mattis, March 14, 2017**

<https://www.comprehensivecarbon.com/s/CCI-Climate-Change-is-a-National-Security-Priority.pdf>

## The Global Need for Energy

The roots of climate issues are in the global need for energy. As commercial industry reckons with the need to clean that energy as demand continues to grow, they do not always consider the national security implications of major capital decisions. For example, the first fleetwide fuel efficiency standards in the US were put in place to reduce America's dependence on foreign oil; effectively.



Source: U.S. Energy Information Administration, International Energy Outlook 2017; International Energy Statistics 1980-2017

Yet today, we are deciding to tilt decisively to electrics, inducing significant supply chain dependencies as only one of many unintended consequences of clean.

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