

Second Mitigation Work Programme Global Dialogue
Just Energy Transitions in Transport Systems
Opportunities, Best Practices, Actionable Solutions, Challenges, and Barriers
Submission by the United States
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Context

At COP26, Parties resolved to pursue efforts to limit global temperature increase to 1.5°C, recognizing that the impacts of climate change will be much lower at a global temperature increase of 1.5°C compared with 2°C above pre-industrial levels. Within this context, Parties established a work program “to urgently scale up mitigation ambition and implementation in this critical decade ... in a manner that complements the global stocktake.” The first Mitigation Work Programme (MWP) Global Dialogue, and corresponding investment-focused event, took place in June 2023 and focused on just energy transitions in the energy sector.

MWP co-chairs have identified the theme of the second Global Dialogue and investment-focused event as accelerating just energy transitions in transport systems. Within this, the co-chairs specified discussions on:

- a) Deploying and shifting to collective and non-motorized modes of transport (rail, urban public transit, cycling, etc.);
- b) Energy and resource efficiency in the transport sector (design improvements, circular economy and material changes, vehicle vintage, carpooling, etc.);
- c) Electrification of vehicles (infrastructure, batteries, and minerals);
- d) Shifting to low- or zero-carbon fuels (hydrogen, biofuels, biogas, compressed natural gas).

Recommendations

The preparations for the second Global Dialogue and investment-focused event, to be hosted in October 2023 in Abu Dhabi, present an opportunity to learn from and build on the experience of the June 2023 events. To this end, we recommend that a wide diversity of expert speakers and panelists be invited to present, bringing in a wide range of perspectives – by researchers and investors, system operators and manufacturers, and policy makers at all levels. We further recommend that a concerted effort be made to invite participants representing relevant stakeholder groups, including subnational governments; research institutions; early-stage investors; transportation system operators; and vehicle, battery, and fuel producers.

More specifically, for each of the themes below we would suggest the co-chairs include a focus on the following opportunities, best practices, actionable solutions, challenges, and barriers:

Deploying and shifting to collective and non-motorized modes of transport (rail, urban public transit, cycling, etc.)

- Include case studies on best practices in system design for collective and non-motorized modes of transport for 1) retrofits of transportation infrastructure in existing urban areas (for example, Mexico City rapid bus lines, Philippines e-

Jeepneys); 2) new urban developments (for example, Nusantara); 3) rural areas; 4) inter-city transportation; 5) policies and technologies that incentivize non-motorized transportation (for example, Digital Transport for Africa Innovation Challenge winners); 6) urban vehicle access limitations or fees (for example, Beijing, Bogota, New Delhi, and/or Mexico City); 7) small island states

- Include discussions on 1) policy decisions and incentives; 2) private investment models; 3) technical and infrastructure considerations; 4) cost implications; 5) estimated emissions reductions, and co-benefits such as improved public health
- Potential institutions to present:
 - C40
 - ICLEI – Local Governments for Sustainability
 - International Transport Forum
 - Iniciativa Climatica de Mexico; GIZ
 - Government of Indonesia
 - European Commission Department for Transportation and Mobility
 - Digital Transport for Africa
 - U.S. Joint Office for Energy and Transportation
 - Beijing, Bogota, New Delhi, and/or Mexico City
 - Global Covenant of Mayors for Climate and Energy
 - FIA Foundation, Shell Foundation

Energy and resource efficiency in the transport sector (design improvements, circular economy and material changes, vehicle vintage, carpooling, etc.)

- Include case studies on 1) examples of circular economy deployed in the transport sector; 2) public policies and incentives stimulating technology developments (e.g., battery technologies, lighter materials, better charging infrastructure, establishment of the U.S. Joint Office of Energy and Transportation); 3) initiatives that have increased the proportion of carpooling, vehicle sharing, or freight rail transport (e.g., Wellington, UN Mobility, Denver); 4) design improvements in aviation, shipping
- Include discussions on 1) developments in vehicle design, charging infrastructure, port design; 2) efficiency improvements for existing technologies (e.g., hybrid internal combustion engines, retrofitting existing vehicles as electric vehicles); 3) potential to recycle/ reuse different materials, and lifecycle cost, emissions, and waste implications; 4) emission, cost, and other considerations of policy options such as vintage limitations, circulation limitations)
- Potential institutions to present:
 - Institute of Civil Engineers; Arup; World Economic Forum; Global Fuel Economy Initiative
 - U.S. Department of Energy; Joint Office of Energy and Transportation; White House Climate Policy Office
 - Let's Carpool, Wellington, NZ; UN Mobility, Nairobi; city of Denver
 - Maersk Mc-Kinney Moller Center for Zero Carbon Shipping, Global Maritime Forum; International Association of Ports and Harbors
 - Boeing, Embraer, Airbus, and/or Bombardier

Electrification of vehicles (infrastructure, batteries and minerals)

- Include case studies on 1) public policy approaches stimulating investment in electric vehicle technology, battery technology, and infrastructure (e.g., U.S. Inflation Reduction Act, Bipartisan Infrastructure Law); 2) private sector investments in electric vehicle technology, battery technology, and infrastructure; 3) electrification of heavy-duty vehicles, buses, light aircraft (e.g., India electric buses); 4) low emission, low impact critical mineral supply chains
- Include discussions on 1) developments in battery technologies (lithium-ion, hydrogen fuel cell, alternate materials, battery swaps); 2) considerations for infrastructure development, including different charger types, size of the market; 3) considerations associated with sourcing of critical minerals, vehicle design, charging infrastructure, port design
- Potential institutions to present:
 - C40, Calstart, Transport Decarbonization Initiative
 - California Air Resources Board; Argonne National Lab; White House Climate Policy Office; Government of Portugal
 - Vehicle manufacturers such as Volvo, General Motors, Tesla, Ford, Hyundai, Toyota
 - Researchers developing cutting-edge battery technologies
 - Infrastructure developers such as E.ON
 - WBCSD; International Council on Clean Transportation; European Association for Electromobility; Electrification Coalition

Shifting to low-or zero-carbon fuels (hydrogen, biofuels, biogas, compressed natural gas)

- Include case studies on 1) use of low-or zero-emission fuels for aviation, shipping; 2) public policies and incentives stimulating zero- and low-emission fuel development and deployment; 3) private sector initiatives to increase the adoption of low- or zero-carbon fuels
- Include discussions on 1) developments in zero and low-carbon fuels (e.g., hydrogen, methane capture, advanced bioenergy); 2) potential for scale, and timeline; 3) feedstock considerations (origin, pathways, potential to use waste, alternate demands); 4) other technical considerations (cost, ease of transportation, viability under different conditions, etc.)
- Potential institutions to present:
 - California Air Resources Board; U.S. Department of Energy
 - Hydrogen Council; IRENA; Mission Innovation; International Partnership for Hydrogen and Fuel Cells in the Economy
 - Global Bioenergy Partnership; Canadian Fuels Association; Alternative Fuels and Chemicals Coalition; World Bioenergy Partnership
 - ICAO (CORSIA), IMO

Investment-focused event:

- Focus on presenters that can provide guidance on early-stage investment identification and design
- Invite institutions that provide support on feasibility studies and scoping, which are often barriers in the investment pipeline
- Feature several key investors presenting information on what they look for when identifying potential investments (e.g., type of investment, scale of deal, stage at which they want to receive proposals, structures of potential deals, role(s))
- Potential institutions to present:
 - Global Energy Alliance for People and Planet
 - U.S. Development Finance Corporation
 - PowerAfrica
 - GCF Readiness and Support Program
 - International Finance Corporation
 - UNDP

We would further recommend the below background materials such as the below be circulated as pre-reading for Dialogue and investment event participants:

- IEA Global EV Outlook (<https://www.iea.org/reports/global-ev-outlook-2023>)
- SLOCAT Transport, Climate and Sustainability Global Status Report 3rd Edition (<https://tcc-gsr.com/>)
- Sectoral guide: Low emission transport (<https://www.greenclimate.fund/document/sectoral-guide-low-emission-transport>)
- Facilitating a transition to zero-emission vehicles in the global south (<https://escholarship.org/uc/item/6766234x>)
- Towards Decarbonising Transport 2023: A Stocktake on Sectoral Ambition in the G20 (https://www.agora-verkehrswende.de/fileadmin/Projekte/2023/G20-Update-2022/98_Towards_Decarbonising_Transport_2023.pdf)
- California LCFS (<https://ww2.arb.ca.gov/our-work/programs/low-carbon-fuel-standard>),
- ICAO CORSIA (<https://www.icao.int/environmental-protection/CORSIA/Pages/default.aspx>),
- EPA GHG standard (<https://www.epa.gov/regulations-emissions-vehicles-and-engines/light-duty-vehicle-greenhouse-gas-regulations-and>).