Mitigation Work Program 2023 Dialogues on Just Energy Transition Submission by the United States May 2023

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." In Sharm el-Sheikh, Parties further defined this mitigation work program (MWP) to include at least two global, hybrid dialogues each year, with additional in-person or hybrid dialogues in conjunction with existing events. Investment-focused events are to be held on the margins of these dialogues.¹

The co-chairs of the MWP decided that the MWP dialogues in 2023 will focus on "accelerating just energy transition, including by:

- Implementing policies and measures with global overview and country-specific experience;
- Addressing financial, technological and capacity-building needs in this area, such as through international cooperation, including with non-Party stakeholders, and provision of support to developing countries;
- Promoting sustainable development and understanding socioeconomic effects.

This submission provides the views of the United States on the most effective way to design the MWP dialogues and investment-focused events to scale up mitigation ambition and implementation before 2030, including by highlighting opportunities, challenges and barriers relevant to the chosen topic and drawing on relevant practitioners, technical experts, policy makers, investors, and other stakeholders to help identify best practices and actionable solutions of relevance to a wide range of Parties.

Dialogue focus

The 2023 dialogues will focus on opportunities for the just energy transition within each Party. The MWP is an opportunity to accelerate the deployment of renewable energy and the phaseout of unabated fossil fuel use so as to achieve net zero in energy systems by 2050 at the latest as a contribution to putting the world on a 1.5 degree pathway. We recommend that the specific topics of each dialogue be sequenced to allow a full discussion of this broad theme over the course of each year, and reflect key experiences, lessons learned, and barriers, as well as present emerging opportunities. This submission lays out an example of this model of organization.

<u>Global Dialogue 1 (in conjunction with the Subsidiary Body meetings)</u> Specific Focus: Power sector energy transition

Rationale: The largest opportunity to decarbonize in most countries.

Introduction Setting the stage

As technologies have evolved and costs of renewable energy technologies have fallen, countries around the world are demonstrating that a transition to clean energy is not only feasible, it is in many cases the most cost effective energy option. The challenge now is to accelerate this transition, combining domestic policy (including demand levers), domestic investment and support (for example, tax policy, subsidy reform), and international investment and support.

• *Potential speakers:* International Energy Agency; multilateral development banks, leading country policy makers

The remainder of the Dialogue would feature a combination of panels, roundtables, and solution-finding sessions, and "ask the expert" tables focused on the following subthemes:

Subtopic #1: Clean Energy Infrastructure

While the development of renewable energy projects attracts a lot of attention, the ability of the grid to absorb those new generation resources can be overlooked. The development of grid infrastructure that can accommodate a growing share of renewable energy, especially intermittent sources, can be a major barrier to the further deployment of clean energy. This challenge relates to existing grid infrastructure, which in many instances is aging and ill-prepared for a significant influx of clean energy generating resources, and the siting/permitting of new infrastructure. Both issues need to be addressed in the clean energy transition. Furthermore, grids need to be reliable and stable, through incorporating baseload power sources, like nuclear and geothermal, or minimizing the variability of intermittent renewables, like long-duration energy storage. Integration of new clean energy projects to the grid and the siting/permitting of new energy infrastructure projects face a number of challenges, including the mismatch between the interest in the development of new clean energy projects and the grid's ability to absorb that new capacity and interstate/country transmission issues. A number of current examples point to best practices in grid development and enhancement.

• Opportunities and Best Practices:

• The Clean Energy Ministerial initiatives: 21st Century Power Partnership (21CPP) on issues of modeling, system planning, and policy/regulatory development, and International Smart Grid Action Network (ISGAN) on grid modernization and technological innovation and integration.

- *Potential speakers:* U.S. Department of Energy; governments of Mexico, Brazil, India, EU
- The Global Power System Transformation Consortium's (G-PST's) work to help system operators manage electric grids that experience increasing amounts of variable renewable energy.
 - Potential speakers: G-PST systems operators

Subtopic #2: Clean Energy Innovation

Today's sources of clean energy are supplying a significant share of energy in many countries, with a slate of new technologies expected to become commercially available in the coming

decades. Therefore, while it is important to accelerate the deployment of commercially available clean energy technologies to reduce emissions in the near-term, the need for continued investment in clean energy research, development, and demonstration cannot be overlooked. Innovation also encompasses improved approaches to the deployment of clean energy, new financial models, or new applications of existing clean energy technologies.

• **Opportunities and Best Practices:** A range of stakeholders are working to develop and deploy – at different scales – the next generation of clean energy sources, including the latest offshore wind technologies, nuclear and clean baseload, and enhanced geothermal, as well as better energy storage models. Similarly, financing models are evolving over time, with innovative financing models like solar leasing, solar securitization, addressing foreign exchange risk, and financing clean energy as a fossil fuel swap demonstrating new approaches to bringing down costs.

• *Potential Speakers:* NuScale, GE-Hitachi, Fervo Energy, Terrapower, Highly Innovative Fuels (HIF Global); U.S. National Laboratories; Columbia Center for Global Energy Policy

• **Challenges and Barriers:** Challenges to the full deployment of new clean energy technologies include the cost and time required to research, test, and deploy new technologies, as well as the need to incorporate these into existing infrastructure. Similarly, the deployment of new financing models requires awareness-building and the capacity to design financeable interventions.

• *Potential Speakers:* International Energy Agency; Guggenheim; KKR; Citi; Bank of America; HSBC

Subtopic #3: Demand Management and Energy Efficiency

Electricity demand is expected to grow significantly through 2030. This growth cannot be accommodated by existing generation capacity and is expected to be met, primarily, by the increased deployment of new clean energy generation capacity. However, this projected increase in demand can also be addressed through the enhanced deployment of energy efficiency and demand response solutions, which can drive down energy consumption and reduce costs at the household level.

• **Opportunities and best practices:** There are a wealth of subnational examples of many successful energy demand response and energy efficiency initiatives, many leading to significant cost savings, that might be highlighted. There are also national examples, from the U.S. and from other countries, for how energy efficiency can be advanced through mandates, such as minimum energy performance standards for appliances and equipment, encouraged through the development of technical resources that can then be adopted by other jurisdictions, like in the case of building energy codes and standards, or through market-driven approaches like ENERGY STAR.

Potential speakers: U.S. state governments of California, Massachusetts or New York; city governments of San Francisco, Seattle or Washington, DC; government representatives from countries such as France, UK, Netherlands, India, South Africa or Japan); U.S. Department of Energy or U.S. Environmental Protection Agency; utility executives (such as from Eversource, PG&E, or Commonwealth Edison); International Energy Agency; Collaborative Labeling and Appliance Standards Program (CLASP);

American Council for an Energy-Efficient Economy (ACEEE); Energy Service Companies (e.g. Johnson Controls)

• **Challenges and Barriers:** Challenges to enhancing energy efficiency and addressing energy demand can include a lack of baseline data to understand energy consumption patterns, a lack of technical expertise to develop energy efficiency standards, a lack of regulatory authority to implement and enforce energy saving measures, inefficient utility models with cost structures that disincentivize energy efficiency, and the need for clear financing models to support upfront costs, among others.

• *Potential speakers:* Utility executives, U.S. Department of Energy, International Energy Agency; governors or mayors from Mexico, India, Brazil or South Africa

Subtopic #4: Decarbonizing fossil fuels through methane mitigation and carbon management

In order to put the world on pathway to limit global average temperature rise to 1.5 degrees Celsius, we need to significantly reduce greenhouse gas emissions, including through carbon management and methane abatement. While the energy transition is underway, this can include an expanded development and adoption of carbon capture technologies to reduce the carbon intensity of legacy fossil fuels as well as an expanded deployment of commercially available technologies and measures to minimize methane emissions, particularly from the oil and gas sector. Carbon and methane emissions also contribute to air quality concerns globally, which have related health impacts on nearby communities in areas where emissions are concentrated.

• **Opportunities and Best Practices:** The deployment of carbon capture technologies has been evolving in a number of countries, providing a wealth of lessons learned as the use of carbon capture, use, and storage is scaled up. Similarly, efforts to address emissions from legacy fuels provide important lessons in the effort to reduce emissions from this sector as quickly as possible.

• *Potential speakers:* NetPower, Baker Hughes, Avenue Capital

• **Challenges and Barriers:** Challenges to deploying these solutions include the economic viability of commercial-scale installation, and access to high-quality and timely data on emissions leaks.

• Potential speakers: U.S. Department of Energy

Cross-Cutting Focus: Just Transition for the Workforce and Impacted Communities

Recognizing The clean energy transition will require a significant shift in how our economies produce and use energy. Such a transition will have an outsized impact on the workforce and communities that rely on conventional energy resources, namely fossil fuels, as well as those affected by fossil fuel-related pollution and contamination; it will also create new economic opportunities for some communities. It is important that national and subnational policy and investment support the workers and communities that depend on conventional energy for livelihood options throughout the clean energy transition, and that this transition benefits the most vulnerable members of society. To ensure that just transition is an enabler for ambitious climate action and a clean energy future at the national level, we need to strengthen domestic policies, including social protection systems and retraining opportunities, for workers and

impacted communities in order to foster socioeconomic opportunities and minimize any negative impacts. Best practices in this area should be woven throughout the Dialogue, drawing on experiences such as Just Energy Transition Partnerships and Justice40 in the United States.

Investment-Focused Event (on the margin of the first Global Dialogue)

- Bring together interested investors in clean energy and power grids, and those with early-stage projects related to grid design and enhancement, renewable energy development and deployment, community-scale energy.
- Include workshop sessions on feasibility studies, project design, converting energy-focused components of NDCs into investment plans.
- Invite participants that include project proponents, technology and infrastructure developers, interested public, private, philanthropic and multilateral financing institutions.

Regional Dialogues (in conjunction with Regional Climate Weeks)

Regional dialogues and investment[-focused] events should be scheduled in conjunction with the 2023 regional climate weeks, as foreseen in the CMA4 MWP decision. These regional dialogues can give greater voice to regional stakeholders. They might also focus on subthemes of greatest interest to the region, for example:

- Specific renewable energy technologies (offshore wind, geothermal, run of river);
- Off-grid connectivity for isolated communities; and
- Ambitious clean energy targets reflected in NDCs and long-term strategies.

Global Dialogue 2 (in conjunction with COP28 meetings)

Specific Focus: Net zero transportation

Rationale: Second largest opportunity to decarbonize in many countries.

Introduction: Setting the stage

The transition to zero energy transportation is underway, as fleets of light duty vehicles grow rapidly in many countries, and new technologies put a similar transition for medium-and headyduty terrestrial vehicles, ships, and aviation within reach. Here again, a combination of government policy, domestic support and investment, and international support and investment is sending demand signals, supporting infrastructure development, promoting research and development, and supporting fleet growth. The diversity of approaches deployed in countries around the world provides insight into opportunities to help accelerate the transition to net zero energy.

• Potential speaker: International Transport Forum

The remainder of the Dialogue would feature a combination of panels, roundtables, and solution-finding sessions, and "ask the expert" tables focused on the following subthemes:

Subtopic #1: Scaling up global ambition towards decarbonizing the transport sector

Recognizing the large and growing role of emissions from the transport sector and the need for rapid decarbonization, many governments, national and subnational, are setting goals for the transformation of their vehicle fleet towards a zero-emission future, and standing up the research and development systems, infrastructure, and supply chains necessary to make this possible.

• **Opportunities and best practices**: Several global initiatives working towards collective ambition to reduce emissions. These initiatives have assisted countries and subnational governments with designing, setting, and implementing ambitious goals for a transition towards zero-emission transportation, and may provide useful examples of best practices, challenges, and lessons learned.

• The ZEV Leaders Drive brings together countries supporting a collective zeroemissions vehicles goal that, by 2030, over 50 percent of light-duty vehicles (LDVs) sold globally, and at least 30 percent of medium- and heavy-duty vehicles (MHDVs) sold globally, will be ZEVs (battery electric, plug-in hybrid electric, fuel cell electric vehicles, and others), with a view to setting their own national LDV and MHDV market share goals by COP 28.

 Possible speakers: Governments of Canada, the European Union, France, Germany, Indonesia, the United Kingdom, Norway, or Chile; International Energy Agency, International Transport Forum

• The Global Drive to Zero is working towards accelerating the growth of global zero-emission commercial vehicle space.

• *Potential Speakers*: Government of the Netherlands, CALSTART, Smart Freight Centre

• The ZEV Transition Council is a political forum through which ministers and representatives from governments from most of the world's largest and most progressive automotive markets – collectively accounting for more than half of all new car sales globally – meet to discuss how to accelerate the pace of the global transition to zero emission vehicles.

• *Potential Speakers*: Government of the United Kingdom, World Bank, United Nations Environmental Programme, CalStart, UC Davis

• **Barriers and challenges**: Challenges to setting and implementing ambitious goals include the need to develop complementary infrastructure for ZEV fleets, assessing global trends in supply chains for critical materials, considering regulatory or incentive options, and forecasting technology trends.

• *Potential speakers*: California Air Resources Board (CARB), International Council on Clean Transportation

Subtopic #2: Coordinating public and private capacity and incentives

A global transition to zero-emission transport will require strong support and cooperation between companies and governments. Encouraging dialogue between governments, especially in emerging markets, and major companies will accelerate private investment and supportive public policies, enabling companies and governments to achieve their ambitious zero-emission transport deployment goals. • **Opportunities and best practices**: Emerging best practices demonstrate how public sector incentives can encourage private investment in ZEVs and the associated infrastructure, while private sector-led coalitions are showing how creating advanced demand for emerging technologies can help support ambitious public sector policy. Examples include:

• The U.S. Inflation Reduction Act, which includes a number of measures focused on growing a new clean energy economy, including tax incentives for the EV market.

• *Potential Speakers*: U.S. White House, U.S. Department of Treasury, Center on Global Energy Policy

• The ZEV in Emerging Markets Initiative, which builds on cooperation between companies and governments in emerging markets to transition to zero-emission vehicles (ZEVs).

• *Potential Speakers*: Government of India, World Resources Insitute, Uber, DHL, Ikea, Tata Motors

• The First Movers Coalition of companies using their purchasing power to create early markets for innovative clean technologies across eight hard to abate sectors.

• *Potential Speakers*: U.S. Department of State, World Economic Forum, Delta Airlines, Amazon, Scania

• **Challenges and barriers:** Challenges to potential public-private cooperation can include the identification of appropriate engagement models, different time scales, and the need to align incentives.

• *Potential speakers*: World Economic Forum, World Business Council on Sustainable Development

Subtopic #3: Deploying zero-emission transport systems

National policies can provide the signals towards the transition towards zero-emission transport. Implementation of zero-emission transport is generally led by sub-national governments, and requires a focus on infrastructure development and enhancements, fleet composition, and incentive measures, amongst other components. Focusing on how resources and incentives are deployed at a subnational level, private investment is attracted, infrastructure deployed, and fleets built up would provide a tangible look at how the energy transition in the transport sector happens on the ground.

• **Opportunities and Best Practices**: The rapid deployment of ZEV fleets and infrastructure in a number of countries provides many examples of best practices.

• The U.S. Bipartisan Infrastructure Law charging infrastructure investments are providing \$7.5 billion being used throughout the United States to build out a nationwide network of 500,000 electric vehicle chargers.

Potential Speakers: U.S. White House, Joint Office of Energy and Transportation
The Global Climate Action Platform Transport Working Groups engage high-level government officials with specific interests to advance activities with integrated policy and technical elements with the goal of maximizing regional impact.

- *Potential Speakers:* National Renewable Energy Laboratory, ICLEI, SLOCAT Partnership, Asociación Civil Sustentar
- The TUMI E-Bus Mission supports cities with transitioning to electric buses.

- *Potential Speakers:* Dar es Salaam, Tanzania; state of Jalisco, Mexico; Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- **Challenges and barriers:** Challenges to the deployment of ZEV fleets can include the cost of new vehicles, and financial and technical challenges associated with creating a network of charging and other infrastructure.
 - Potential speakers: C40, City of Oslo

Investment-focused event (in the margins of the second Global Dialogue)

- Bring together interested investors in ZEV technologies, and those with early-stage projects related to ZEV technology, charging infrastructure, battery design.
- Include workshop sessions on feasibility studies, project design, converting transportation-focused components of NDCs into investment plans.
- Invite participants that include project proponents, technology and infrastructure developers, interested public, private, philanthropic and multilateral financing institutions.

Dialogue design

- We recommend that each dialogue be two days in length, with the investment-focused event scheduled for a third day to provide participants with sufficient opportunity to explore state of the art practices and technologies, discuss barriers, and identify solutions.
- Invited participants should include the full range of experts needed to advance implementation and investment implementers, policymakers at different levels, technical experts, researchers, investors, etc.
- A pre-read document should summarize the current state of play, technologies, initiatives, best practices, case-studies, etc. for participants. As time before the first dialogue is short, the pre-read for the June 2023 dialogue might be comprised of a bibliography of relevant studies and other reference material.
- Dialogues should be structured to facilitate different forms of interaction and learning, via a keynote address, panels, "ask the expert" sessions, solution brainstorms, and café-style sessions.
- Each dialogue should allow virtual participation by presenters and panelists, and should be webcast to ensure the greatest reach amongst practitioners, technical experts, and other stakeholders.
- The summary report of each dialogue should be designed to be accessible to general audiences, providing clearly identified opportunities and recommendations emerging from the dialogue.