

**United States House of Representatives
Select Committee on the Climate Crisis**

**Hearing on October 28, 2021
“International Climate Challenges and Opportunities”**

Questions for the Record

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The Honorable Kathy Castor

- 1. What does the United States need to do to take a more constructive stance in our engagement with vulnerable communities, particularly those experiencing severe economic losses and environmental damage due to climate impacts?**

Extreme climate-related impacts are already hitting countries earlier and harder than expected, and these will increase significantly in years to come, even if current mitigation targets are met. Whichever metric is used, costs are already substantial, in both economic and human terms, and will only escalate. In 2020 over 30 million people were displaced¹ by weather-related disasters, primarily in Asia, Africa and Central America. Climate-related disasters cost the world \$210 billion in 2020² and 85 percent of the global population has been affected by climate-driven extreme weather events³. The economic cost of loss and damage in developing countries is estimated to be \$290-580 billion by 2030, rising to between \$1-1.8 trillion by 2050.⁴

Climate change already poses a risk to sovereign credit ratings, especially in Least Developed Countries (LDCs) and Small Island Developing States (SIDS). While no country is fully prepared or immune, the impacts are worst for those countries least responsible for climate

¹ Joint Statement by WMO and UNDRR on the Creation of a Centre of Excellence for Climate and Disaster Resilience, October 13, 2021, <https://www.undrr.org/news/joint-statement-wmo-and-undrr-creation-centre-excellence-climate-and-disaster-resilience>

² “Natural disasters cause \$210 billion in damage in 2020, insurer says,” *Reuters*, January 7, 2021, <https://www.reuters.com/business/environment/natural-disasters-cause-210-billion-damage-2020-insurer-says-2021-01-07/>

³ “At least 85 percent of the world’s population has been affected by human-induced climate change, new study shows,” *Washington Post*, October 11, 2021 <https://www.washingtonpost.com/climate-environment/2021/10/11/85-percent-population-climate-impacts/>

⁴ Integrated Assessment for Identifying Climate Finance Needs for Loss and Damage: A Critical Review, November 29, 2018 https://link.springer.com/chapter/10.1007/978-3-319-72026-5_14

change and least able to pay for the response. For example, since 2019 multiple cyclones in Mozambique have helped push government debt to 125 percent of GDP. As the OECD notes in a recent report, without appropriate action climate impacts will undermine their ability to adapt to climate change and to achieve sustainable development.⁵

The underinvestment in, and lack of resilience of, societies is widening the divisions between those most and least capable of dealing with these climate, resource and other shocks. While many LDCs have shown great ingenuity in their responses, recent extreme weather events combined with Covid-19 have overwhelmed disaster response capabilities and state and local budgets. The strain on vulnerable countries is destroying the economic markets of the future and threatens global stability, peace, and prosperity.

There is an urgent need for developed countries to show leadership and offer concrete support to address adaptation and loss and damage. As the OECD says: “*Developed countries must scale up both financial and technical support to developing countries and make such support more accessible and predictable.*”

While loss and damage incurred by developing countries is escalating rapidly, there are no dedicated financial or technical mechanisms available to address climate impacts. Those designed to support adaptation, mitigation, sustainable development and humanitarian relief are neither sufficient nor appropriate to address the scale and nature of loss and damage, now or in the future. While countries at COP26 decided to provide the resources needed to stand up the Santiago Network on Loss and Damage, it is not yet functioning to provide technical support and is not set up to channel finance to countries in need. New financial instruments and systems for delivering technical support are urgently required to meet the challenge.

The most climate vulnerable countries (LDCs and SIDS) are showing strong appetite to find practical solutions that can be applied now to address loss and damage. They are looking for *solidarity* in tackling these challenges and urgently seek practical support that builds upon existing financial and technical tools and instruments, while exploring appropriate innovative options.

In Glasgow, countries agreed to “establish the Glasgow Dialogue between Parties, relevant organizations and stakeholders to discuss the arrangements for the funding of activities to avert, minimize and address loss and damage associated with the adverse impacts of climate change, to take place in the first sessional period of each year of the Subsidiary Body for Implementation, concluding at its sixtieth session (June 2024).”⁶ At the first session next June in Bonn, Germany, the US and other developed countries should demonstrate a new, and public, willingness to support the most climate vulnerable and least responsible countries to address loss and damage and focus on how they can provide vulnerable countries the support they need to address climate impacts practically and urgently. These dialogues offer a chance to set a new positive agenda for international cooperation that yields significant geopolitical benefits. Helping vulnerable

⁵ Managing Climate Risks: Facing up to Losses and Damages, OECD, November 1, 2021 <https://www.oecd.org/environment/managing-climate-risks-facing-up-to-losses-and-damages-55ea1cc9-en.htm>

⁶ Glasgow Climate Pact, November 13, 2021 <https://unfccc.int/documents/310497>

countries prepare for and manage climate risk is not only a moral imperative, it is also imperative for ensuring global stability.

Building on the outcomes of COP26, the US should work with other countries to:

- **Operationalize the Santiago Network on Loss and Damage**, by providing funding for a secretariat under the UNFCCC, human resources and administrative systems to facilitate countries to identify their technical and financial support needs and to connect with the right providers of support, and funding to enable countries to access support, including financial support to highly vulnerable countries to conduct detailed national Loss and Damage risk and needs assessments.
- **Mandate an assessment of the resources required to address Loss and Damage** to feed into the forward-looking assessment under the Global Stocktake. This should quantify current expenditure being delivered by existing mechanisms, including humanitarian assistance, climate finance, development finance, and disaster risk reduction and response. It should also identify and quantify the gaps in finance currently available to address Loss and Damage, examining the quantity of finance available that can be used to address Loss and Damage and considering whether existing instruments are appropriate to do so effectively.
- **Collaborate with finance providers in the design and establishment of National Solidarity Funds for Loss and Damage**, which can be used to channel finance into the different activities needed to cope with climate impacts, tackling comprehensively the different forms of loss and damage over the range of time frames and contexts in which it is experienced, i.e. anticipatory action, humanitarian response, recovery and rehabilitation, disaster risk reduction and preparedness, social protection and risk avoidance. These funds would aim to support activities such as planned relocation, managed migration, migration friendly cities, portable social protection or loan repayment holidays as well as non-economic loss and damage, for example through psychological services, and would incentivise the actors from humanitarian, disaster risk reduction, social protection and climate change sectors to work together to deliver Loss and Damage finance in ways that are accessible, predictable, and flexible. The funding disbursed to National Solidarity Funds for Loss and Damage should be new and additional finance to existing development, humanitarian and climate finance.
- **Work with finance providers to develop the mosaic of financial instruments** required to fund the different activities that need to be delivered through national platforms, and to mobilise or establish appropriate financial delivery mechanisms to meet the varied needs of the most vulnerable countries. This would include disaster risk finance, parametric insurance, forecast based finance, anticipatory and rapid humanitarian response finance, local finance delivery, risk transfer/insurance, highly concessional recovery finance, debt restructuring and relief, debt for climate swaps, catastrophe bonds, long term investments in risk reduction, disaster preparedness, social protection and migration.
- **Announce a collective pledge to invest in regional disaster protection schemes** through the Risk Informed Early Action Partnership (REAP) initiative.

- Make new **bilateral commitments to support national disaster response and preparedness funds.**
 - **Establish an international Climate Risk Observatory**, responsible for monitoring systemic and compounding risks, making sense of them and recommending appropriate policy responses, with a view to building a broad consensus on the nature of the risk landscape through objective and evidence-based analysis and to directing finance towards the most significant risks in the most vulnerable places.
 - **Support the United Nations in developing a whole-of-system approach to addressing Loss and Damage.** Loss and Damage has implications that go well beyond the mandate and scope of the UNFCCC. All relevant UN agencies and multilateral institutions must come together to agree on how to support LDCs and SIDS to address Loss and Damage effectively.
- 2. What are your views on the U.S.-China Joint Glasgow Declaration on Enhancing Climate Action in the 2020s? How will U.S. leadership on the global stage help to raise China's climate action ambition and work to hold China accountable to their commitments?**

The U.S.-China Joint Glasgow Declaration on Enhancing Climate Action in the 2020s is an important signal as there is no pathway for holding the increase in global temperature to 1.5C without engagement on climate between China and the US; the declaration shows that cooperation on this issue is possible despite tense relations. In the joint declaration, the US and China acknowledge the urgency of the climate crisis; they both must now show that they are taking the responsibility they promised to prevent dangerous climate change by taking bold actions in the 2020s.

Both President Biden and President Xi face domestic political challenges in making the transition from dirty to clean energy resources; demonstrations that both sides are taking action can be helpful in addressing these challenges. In Glasgow, President Biden and his team had to address the difficulties they have been facing in getting his climate legislation enacted; making progress on this domestic agenda will be critical to the administration's ability to encourage other countries to increase the ambition of their Paris commitments. While President Xi and other Chinese Communist Party leaders aren't exceptionally worried about climate change diplomacy right now, they have concerns that a negative public view of China's actions on climate could interfere with broader plans for expanding China's reach in the longer term and they are frustrated by criticisms of China's actions given how much they believe they have done already to reduce emissions.

In the joint declaration, the U.S. and China agreed to make methane reduction a principal focus of their individual and joint efforts. Because molecule-by-molecule methane is 80 times more potent at warming than CO₂, and because it dissipates more quickly in the atmosphere than CO₂, significant methane emissions reductions in the 2020s could increase the chances of meeting the Paris temperature limitation goal. Progress in developing the methane action plan promised by China in advance of COP27 in the declaration will be an important test of whether this is a significant step forward in US-China collaborative action. Other significant aspects of the declaration include China's commitment to accelerate the phase-down of domestic coal

consumption in its 15th Five-Year Plan, and the commitment of both countries to “engage collaboratively in support of eliminating global illegal deforestation through effectively enforcing their respective laws on banning illegal imports.”

The first meeting of the US-China “Working Group on Enhancing Climate Action in the 2020s” launched in the declaration will be held this week and may provide signals on how far collaboration can go on some of the other specific areas outlined in the declaration.

In response to your second question, by accepting the mitigation elements of the Glasgow Pact, China has acknowledged the gap between its current efforts and the 1.5C target, recognized the need to do more in this decade and committed to revisit its 2030 climate goal. Beijing needs to deliver on the promises made in the Glasgow Climate Pact soon with action – through putting an expiry date on domestic coal consumption and bringing forward its peaking target to put China in line with the 1.5C temperature limitation goal.

President Xi wants to make China a strong global player that can exert political and economic influence; perceptions that China is not doing its share to address the climate crisis could limit China’s ability to exert influence and may change the CCP’s calculations on the pace of decarbonization.

The US can challenge President Xi’s ability to exert influence by demonstrating climate leadership at home and abroad. While (fairly) immune to diplomatic pressure from the U.S., the CCP’s competitive nature remains sensitive to action by the U.S. and other developed countries.

Chinese leaders assert that their form of government is superior to that of the U.S. and more broadly those of the West; US actions demonstrating a commitment to managing climate for the long-term raises U.S. credibility internationally and can build pressure on China to compete to show that their model of government can also deliver. This may be more effective in accelerating the pace of decarbonization in China than bilateral diplomacy, which has to date produced limited results.

More broadly, developing countries are looking for sustainable growth models. The U.S. can (and should) offer countries a low carbon sustainable economic growth model, by providing technology, technical and financial assistance, while preserving the countries’ agency. This can build pressure on China to revise its terms for overseas infrastructure finance and technology assistance as well as to reduce its own domestic emissions which are putting other developing countries at risk for the worst effects of climate change.

The under delivery of the developed countries’ \$100 billion climate finance commitment and resistance to the loss and damage outcomes called for by developing countries at COP26 hindered efforts to build trust and cooperation, and reduced pressure on China to raise its own ambition. The US should work with other developed countries to identify significant sources of funding for loss and damage activities by COP27 in Egypt, and to ensure that the goal of doubling collective adaptation finance by 2025 is met. This will help build solidarity with developing countries and take away this excuse for inaction from China.

One significant announcement in Glasgow was the agreement by the US, EU, UK, Germany and France to provide assistance to South Africa in making a transition from coal to clean energy resources, which gave South Africa the confidence to put forward a more ambitious nationally-determined contribution under the Paris Agreement. Delivering similar energy transition deals in high-emitting developing countries in the Indo-Pacific including India, Vietnam, and Indonesia could enable them to take steps to phase down coal consumption and would leave China more isolated in its resistance to moving more aggressively on this front.

3. How can the United States play a key role in accelerating global ambition on climate action post-COP26, ahead of COP27 in Egypt, and over the next several all-important years?

Far-off net zero targets were not the major theme at COP26; rather, closing the gap in near-term action was the strong message from Leaders' speeches in the opening high-level segment and this was reinforced by India's new pledge to raise its 2030 ambition towards meeting its net zero by 2070 emissions goal and by a variety of leadership coalitions making economy-shifting commitments on coal, methane, elimination of fossil fuel investments, and deforestation.

The Glasgow Pact⁷ acknowledges that current emissions limitation pledges aren't enough to achieve the reductions of 45% needed in global emissions by 2030 to "keep 1.5C alive" and sets out several requests for countries to step up action, including:

- "to revisit and strengthen the 2030 targets in their nationally determined contributions as necessary to align with the Paris Agreement temperature goal by the end of 2022;"
- for those "that have not yet done so to communicate...long-term low greenhouse gas emission development strategies towards just transitions to net zero emissions by or around midcentury;"
- "to accelerate the development, deployment and dissemination of technologies, and the adoption of policies, to transition towards low-emission energy systems, including by rapidly scaling up the deployment of clean power generation and energy efficiency measures, including accelerating efforts towards the phasedown of unabated coal power and phase-out of inefficient fossil fuel subsidies, while providing targeted support to the poorest and most vulnerable in line with national circumstances and recognizing the need for support towards a just transition;" and
- "to consider further actions to reduce by 2030 non-carbon dioxide greenhouse gas emissions, including methane."

The decision also establishes a work program on cutting emissions before 2030 and calls for annual high-level ministerial round tables on pre-2030 ambition to be held at each COP meeting, to give the acceleration of action more political prominence.

Delivering on these opportunities by COP27 in Egypt next November will require coordinated diplomatic and public campaigning to ensure key countries deliver on the promise to raise their

⁷ Glasgow Climate Pact, November 13, 2021 <https://unfccc.int/documents/310497>

2030 targets and policy pathways. As discussed in the response to question 6 below, mobilizing finance at scale to support national level just transition strategies (along the lines of the South Africa Just Energy Transition deal to shift its power system away from coal) will be necessary to open the political and fiscal space for more aggressive decarbonization commitments by major developing countries. The US should provide leadership by ramping up its own bilateral assistance on this front as well as by working to leverage private sector clean technology investments and pressing the World Bank and other multilateral financial institutions to deploy more of their financial firepower to this objective.

As mentioned above, COP26 saw ambitious sectoral pledges on methane, forests, coal, clean vehicles, and fossil financing. The US and other countries should provide leadership on defining tracking metrics and accountability mechanisms to help ensure that these sectoral and non-state actor commitments are credible; the expert task force created by UN Secretary General Guterres provides one important forum for this work.

With its leadership of the Major Economies Forum, as well as its chairmanship of the International Energy Agency's annual ministerial meeting in February and of the Clean Energy Ministerial and Mission Innovation summits in Pittsburgh next September, the US has opportunities to help shape the international collaborative clean energy architecture needed to accelerate the development and deployment of clean technologies in every sector of the global economy.

The US should also work with the incoming German G7 and Indonesian G20 presidencies to build on the progress made on climate and clean energy issues as last June's G7 leaders' summit in Carbis Bay and last June's G20 leaders' summit in Rome. This includes further elaboration of criteria for sustainable finance investments, strengthening private sector risk assessment and disclosure standards, and encouraging national efforts to phase out subsidies for fossil fuel production and consumption.

4. As developing countries, including in Africa, develop and expand access to electricity, what are the economic and climate considerations that drive energy mix choices?

For many developing countries in Africa and elsewhere, expanding access to modern energy services is a high priority. Sustainable Energy For All reports that while some progress has been made, much more remains to be done on this goal:

“Globally, the number of people without access to electricity declined from 1.2 billion in 2010 to 759 million in 2019. Electrification through decentralized renewable-based solutions in particular gained momentum. The number of people connected to mini-grids has more than doubled between 2010 and 2019, growing from 5 to 11 million people. However, under current and planned policies and further affected by the COVID-19 crisis, the *2021 Tracking SDG7 Report* estimates 660 million people would still lack access in 2030, most of them in Sub-Saharan Africa. At the same time, some 2.6 billion people remained without access to clean cooking in 2019, one third of the global population. Largely stagnant progress since 2010

leads to millions of deaths each year from breathing cooking smoke, and without rapid action to scale up clean cooking the world will fall short of its target by 30 percent come 2030.”⁸

Expanding public and private sector finance for clean energy investments is a key ingredient in closing these energy access gaps. But as the World Resources Institute notes in its Investing in Sustainable Energy Futures report⁹, there are several other factors hindering progress:

“Energy prices do not reflect the true costs of fossil-fuel technologies to public health, to the local environment, and to the planet’s climate system. Decision making in the electricity sector has tended to be both exclusive and opaque, dominated by interests with a stake in “business as usual” practices. As the prices of fossil fuels rise along with our understanding of the environmental and social costs of conventional energy, we need new and better ways to meet energy demand and to support long-term development. Standard energy policy and regulatory mechanisms do not support the renewable energy and energy efficiency necessary to reduce emissions from the energy sector. In most countries, policies and regulations tend to emphasize short-term cost and supply considerations rather than the long-term benefits of the enhanced energy security, environmental performance, and cost savings over time offered by clean technologies.”

Another WRI report¹⁰ outlines several actions that can provide multiple benefits to developing countries, including generating good jobs and training opportunities in renewable energy and energy efficiency; accelerating energy access for all and providing economic and social development in remote areas, particularly with distributed renewables; reducing water stress; and improving household resilience:

- Further expanding renewable energy capacity and generation, including distributed renewable energy that can broaden energy access.
- Grid modernization and improvements in parallel with deploying renewables, including increased use of energy storage that can bolster the penetration of renewables.
- Actions to boost energy efficiency, particularly in buildings.

⁸ SEforAll Analysis of SDG 7 Progress, 2021, Sustainable Energy for All, August 11, 2021
<https://www.seforall.org/data-stories/seforall-analysis-of-sdg7-progress-2021>

⁹ Investing in Sustainable Energy Futures, World Resources Institute, April 22, 2010
<https://www.wri.org/research/investing-sustainable-energy-futures>

¹⁰ NDC Enhancement and COVID-19 Recovery: Building Blocks for a Sustainable Future, World Resources Institute, September 23, 2020 <https://www.wri.org/insights/ndc-enhancement-and-covid-19-recovery-building-blocks-sustainable-future>

- Policies that can tap into synergies between the power sector and electrification in end uses such as transport and buildings.
- Accelerating the manufacture, purchase and use of a range of electric vehicles (EVs), including two-wheel, three-wheel and light-duty vehicles.
- Developing widespread smart charging infrastructure to facilitate the adoption of EVs.
- Boosting public transport as a central part of a transport strategy.
- Taking steps in land-use and mobility planning and infrastructure that support cycling and walking.
- Addressing freight transport by leveraging new clean fuels (including electrification) and information technology.

There were several encouraging developments at COP26 in Glasgow on this front:

-- UN Secretary-General Guterres released the Global Roadmap for Accelerated SDG7 Action,¹¹ demonstrating support for clean energy as the golden thread tying our collective climate and development goals together.

-- Several countries made new net-zero commitments, including Nigeria, India, Thailand, Nepal and Vietnam; nearly 90 percent of the global economy is now covered by net-zero commitments. The Energy Transition Council, championed by the COP26 Presidency, announced that it will continue at least until COP30 in 2025 to provide a platform for the global community to support these and other developing countries in meeting these targets and achieving a just energy transition.¹² It highlighted some important country-level milestones that have resulted from its work, including Nigeria's Energy Transition Plan; Morocco's agreement to phase out coal, and agreement by Indonesia and the Philippines to focus on the retirement of coal-fired power plants.

-- More than 40 countries signed up to a political declaration on Energy Day to transition away from unabated coal power generation, and a group of 25 countries signed a UK-led joint statement committing to ending international public financing for the unabated fossil fuel energy sector by the end of 2022, prioritizing support for clean energy instead.¹³

Another bright spot is the U.S. Power Africa initiative¹⁴ which aims to bring together nearly two dozen public and private sector partners to achieve universal, clean energy generation and access

¹¹ "UN Secretary-General issues new global roadmap to secure clean energy access for all by 2030 and net zero emissions by 2050" Sustainable Energy For All, November 3, 2021 <https://www.seforall.org/press-releases/un-secretary-general-issues-new-global-roadmap-to-secure-clean-energy-access-for-all>

¹² "Energy Transition Council unveils strategic priorities beyond COP26," November 4, 2021 <https://www.seforall.org/news/energy-transition-council-unveils-strategic-priorities-beyond-cop26>

¹³ Global Coal to Clean Power Transition Statement, UK COP26 Presidency, November 4, 2021, <https://ukcop26.org/global-coal-to-clean-power-transition-statement/>

¹⁴ Power Africa initiative 2020 annual report, USAID, March, 2021 <https://www.usaid.gov/powerafrica/annualreport>

for Sub-Saharan Africa by accelerating new distributed renewable energy and grid-based solutions.

But as we work to lift people out of energy poverty, it's important to avoid massive new investments in natural gas infrastructure in Africa and elsewhere, as unabated use of gas also must be sharply curtailed by mid-century to meet the Paris Agreement's temperature limitation goals. A case study of Mozambique¹⁵ just issued by my E3G colleague Jonathan Gaventa documents the risks inherent in such gas expansion strategies:

“Since natural gas was first discovered off the coast of northern Mozambique a decade ago, it has become central to the country's development strategy. Revenues from gas – it was hoped – would catapult one of the least developed countries in the world to become a middle-income country by the 2040s. Gas production and exports were expected to spur widespread industrialisation, fund public investment and pay down debt. 10 years later, this story of ‘gas for development’ is failing. Conflict, corruption and economic distortion have meant that the promised economic benefits have not materialised.¹⁶ Meanwhile, a global shift in climate and energy policies mean the outlook for future gas demand is shrinking. This increases the downside risks of the gas projects and greatly reduces the potential benefits. In turn, lower revenues will narrow the options for responding to resource curse issues and addressing Mozambique's pressing development needs.

A reset of expectations on the role of gas in Mozambique's development is needed. For the Mozambican government, this means lowering dependence on increasingly uncertain gas revenues, and seeking out alternative pathways to prosperity. For the international partners, donors and financial institutions that enabled and encouraged the gas projects, it means re-evaluating assumptions on the development benefits of gas and redirecting financial support to more inclusive and sustainable economic sectors.”

5. Is the fact that America's production of fossil fuels has a lower carbon intensity than that of other countries a reason for the United States to delay or refrain from acting on climate?

¹⁵The failure of ‘gas for development’ – Mozambique case study, Jonathan Gaventa, E3G, December 2, 2021
<https://www.e3g.org/publications/the-failure-of-gas-for-development-mozambique-case-study/>

¹⁶ Mozambique: Cabo Delgado, Nampula & Niassa Humanitarian Snapshot - September 2021, UN Office for the Coordination of Humanitarian Affairs, November 2, 2021
<https://reliefweb.int/report/mozambique/mozambique-cabo-delgado-nampula-niassa-humanitarian-snapshot-september-2021>

In a word, no. Even a cursory glance at the summary findings of the most recent national assessment of climate impacts and risks to the United States¹⁷ demonstrates why moving aggressively to reduce the greenhouse gas emissions that are driving rapid human-induced climate change must be a national priority:

- Climate change creates new risks and exacerbates existing vulnerabilities in communities across the United States, presenting growing challenges to human health and safety, quality of life, and the rate of economic growth.
- Without substantial and sustained global mitigation and regional adaptation efforts, climate change is expected to cause growing losses to American infrastructure and property and impede the rate of economic growth over this century.
- The quality and quantity of water available for use by people and ecosystems across the country are being affected by climate change, increasing risks and costs to agriculture, energy production, industry, recreation, and the environment.
- Impacts from climate change on extreme weather and climate-related events, air quality, and the transmission of disease through insects and pests, food, and water increasingly threaten the health and well-being of the American people, particularly populations that are already vulnerable.
- Climate change increasingly threatens Indigenous communities' livelihoods, economies, health, and cultural identities by disrupting interconnected social, physical, and ecological systems.
- Ecosystems and the benefits they provide to society are being altered by climate change, and these impacts are projected to continue. Without substantial and sustained reductions in global greenhouse gas emissions, transformative impacts on some ecosystems will occur; some coral reef and sea ice ecosystems are already experiencing such transformational changes.
- Rising temperatures, extreme heat, drought, wildfire on rangelands, and heavy downpours are expected to increasingly disrupt agricultural productivity in the United States. Expected increases in challenges to livestock health, declines in crop yields and quality, and changes in extreme events in the United States and abroad threaten rural livelihoods, sustainable food security, and price stability.

¹⁷ FOURTH NATIONAL CLIMATE ASSESSMENT, Volume II: Impacts, Risks, and Adaptation in the United States, US Global Change Research Program, 2018 <https://nca2018.globalchange.gov/>

- Our Nation's aging and deteriorating infrastructure is further stressed by increases in heavy precipitation events, coastal flooding, heat, wildfires, and other extreme events, as well as changes to average precipitation and temperature.
- Coastal communities and the ecosystems that support them are increasingly threatened by the impacts of climate change. Without significant reductions in global greenhouse gas emissions and regional adaptation measures, many coastal regions will be transformed by the latter part of this century, with impacts affecting other regions and sectors.

A recent report¹⁸ in *Nature* finds that to limit global temperature increases to 1.5°C, nearly 60% of global oil and fossil gas reserves and almost all the world's coal – 90% -- will need to remain in the ground in 2050; global oil and gas production would need to peak immediately and fall by 3% each year until mid-century.

And there are many other damaging impacts of fossil fuel production and use which are imposed on humans and natural ecosystems regardless of the carbon intensity of the fuels, including land degradation from mining, wells, pipelines and other facilities; water pollution as a result of acid runoff from coal mining operations, oil spills and leaks, and contamination from the toxic fluids used in oil and gas fracking; and air pollution from emissions of mercury, sulfur dioxide, nitrogen oxide, and particulates.

Of course, as the US takes actions to reduce the harmful impacts of domestic coal, oil, and gas production, it must also move aggressively to reduce demand for energy through energy efficiency measures that enable provision of energy services with lower energy inputs, and to rapidly increase use of solar, wind and other clean energy resources. Increasing imports of fossil fuels with a higher carbon intensity of production from other countries is not acceptable, as reducing US emissions while increasing global emissions is not a solution to the climate crisis.

6. How important is U.S. leadership to the world meeting global climate finance targets?

Keeping 1.5 C alive, protecting against climate impacts, and dealing with losses and damages requires mobilizing trillions of dollars per year. While COP26 did not deliver the finance required, it set up processes to do so in textual decisions on the post-2025 finance goal, adaptation finance, and loss and damage. President Biden and other leaders must respond to the call for trillions made in Glasgow by putting it at the top of an integrated diplomatic agenda which weaves across G7, G20, and UN processes.

¹⁸ Unextractable fossil fuels in a 1.5 °C world, *Nature*, September 8, 2021, <https://www.nature.com/articles/s41586-021-03821-8>

It is clear that the speed of the global net zero transition called for in Glasgow cannot be realized without an equally ambitious implementation agenda. In support of acceleration, President Biden, Prime Minister Johnson and European Union President Von der Leyen put forward a new paradigm of sustainability finance – spanning both public and private investments – to mobilize the trillions needed to keep 1.5 degrees within reach.¹⁹ Moving into 2022, the political stage is set for changes in the ways clean investment projects in developing countries are financed.

Availability and affordability of finance will determine how quickly countries deliver the climate transition, particularly as many developing countries continue to face a squeeze on their budgets given COVID-19. The focus must be on financial diplomacy, including:

- *Targeted finance packages for ambition:* The model demonstrated by UK, US, and European collaboration at COP26 to provide South Africa with a comprehensive, \$8.5 billion just transition package for coal was hailed as a success. Such financial packages for the clean transition in India, Indonesia, and other countries could lay credible foundations for them to enhance their 2030 NDCs. The US, UK, EU, and other countries need to establish the platforms to catalyze such investment deals at the pace and scale needed.
- *Mobilising the trillions for climate transition:* The US and other donor countries must drive significant reforms to Multilateral Development Banks (MDBs) and national Development Finance Institutions (DFIs), including full alignment with Paris Goals and scaling-up leverage of private investment.²⁰ Increasing MDB capital could use Special Drawing Rights in addition to reallocating them to the International Monetary Fund's (IMF) Sustainability and Resilience Trust. This could unlock financial firepower for joint UK, US and EU initiatives – Build Back Better World (B3W), the Clean Green Initiative and the Global Gateway – which channel increased sustainable infrastructure investment.
- *Finance for solidarity:* The Glasgow Climate Pact has lined up COP27 to focus on the wide disparity between finance for mitigation and the lack thereof for adaptation and loss and damage. The US should support the UK COP26 presidency in organizing a second Climate and Development Ministerial to provide an early opportunity for donors to deliver on their COP26 pledge to double adaptation finance from \$20 billion to \$40 billion annually by 2025. This and other forums including the G7 ministerial meetings and the Petersberg Dialogue – both being led by Germany – will also be crucial opportunities for political-level agenda-setting in advance of the first of several loss and damage dialogues called for in the Glasgow Pact, to be held in Bonn, Germany next June.

¹⁹ “U.S. President Biden, European Commission President Von Der Leyen, And UK Prime Minister Johnson Announce Commitment To Addressing Climate Crisis Through Infrastructure Development” November 2, 2021, <https://www.whitehouse.gov/briefing-room/statements-releases/2021/11/02/u-s-president-biden-european-commission-president-von-der-leyen-and-uk-prime-minister-johnson-announce-commitment-to-addressing-climate-crisis-through-infrastructure-development/>

²⁰ “Closing the trillion dollar gap to keep 1.5 degrees within reach,” Julian Havers and Frank Schroeder, E3G, October 15, 2021 <https://www.e3g.org/publications/closing-the-trillion-dollar-gap-to-keep-1-5-degrees-within-reach/>