

Testimony of Richard J. Powell
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House Committee on Financial Services
Examining the Macroeconomic Impacts of a Changing Climate

Good morning Chairman Cleaver, Ranking Member Stivers and members of the committee. My name is Rich Powell, and I am the Executive Director of ClearPath.

ClearPath is a 501(c)3 organization whose mission is to develop and advance conservative policies that accelerate clean energy innovation. We support solutions that advance the wide array of clean energy technologies - including next-generation nuclear, hydropower, cleaner fossil fuel technologies and grid-scale storage solutions that improve grid efficiency, including the integration of additional renewable sources such as wind and solar. Our core mission advocates markets over mandates and bolstering technological innovation rather than implementing stifling regulation. ClearPath provides education and analysis to policymakers, collaborates with relevant industry partners to inform our independent research and policy development, and supports mission-aligned grantees. An important note: we receive zero funding from industry.

I am excited to see the focus this committee is giving to climate change. We believe that this committee can play a large role in America's response to the global climate challenge. With this in mind, I will discuss a few topics today:

- First, the reality of climate change and its pressure on U.S. national economic policy.
- Second, solutions to the climate issue in targeted innovation investments.
- Third, the realities and challenges we face on the global level due to the appetite for energy of developing countries.
- Fourth, the role America can play internationally to help solve the climate challenge.
- Fifth and finally, the opportunity for this Congress to build on last Congress' bipartisan clean innovation record.

1. Climate change already presents significant risks to the U.S. economy

It's always important to address the elephant in the room first. Climate change is real, industrial activity around the globe is the dominant contributor to it, and the challenge it

poses society merits significant action at every level of government and the private sector. It is too important to be a partisan punching bag. Climate change deserves a pragmatic and technology-inclusive agenda to make the global clean energy transition cheaper and faster.

I commend Chairman Cleaver and Ranking Member Stivers for holding this important hearing and look forward to continuing this dialogue as climate change will continue to challenge programs and issues under this committee's jurisdiction.

For example, analysis from the Risk Center at the Wharton School recently demonstrated how the federal mortgage finance system will face multiple challenges due to climate risks. According to Wharton, mortgage-backed securities insured by the Federal Government through Fannie Mae, Freddie Mac, or FHA/VA programs account for over 60 percent of the outstanding residential mortgage debt in the U.S., totaling \$6.7 trillion.¹ In 2018, NOAA acknowledged 14 individual weather and climate events doing at least \$1 billion in damage, totaling \$93.5 billion in total damages.² Additionally, a 2017 report by the Inspector General found that only 42% of FEMA's flood maps correctly identified flooding risk at this point. The National Flood Insurance Program already finds itself in heavy debt. This trend will likely continue to worsen - as climate-related exposure continues to increase, those impacts will be felt in securities backed by the Federal Government, with higher costs passed on to Americans as a result.

2. An Innovation-Focused Approach to Addressing Climate Change

Before we created ClearPath, I was a business consultant at McKinsey & Company. Of all the business philosophy I read and used to help clients, the simplest and most important came from the great Stephen Covey. His second rule for success was elegant, and all important: Begin with the end in mind.

We know that climate change is a huge issue. We also know that the United States has a limited budget and that any solution that truly solves the climate issue must be global. With these constraints and the end in mind: the solutions we pursue must be scalable and sustainable. This means the solutions we invest in must focus on making clean energy cheaper, better performing and easier to buy and build than current technologies - in short, we must invest in innovation.

¹<https://riskcenter.wharton.upenn.edu/climate-risk-solutions-2/can-the-federal-mortgage-finance-system-help-manage-climate-risk/>

² <https://www.ncdc.noaa.gov/billions/events/US/2018>

This is doubly important when considering the global nature of the issue. Developing countries face many hurdles and will infrequently choose clean energy over traditional energy sources if that choice is painful - if, as today, the traditional technologies are cheaper, easier to build, and better performing than the clean technologies. Some will put policies in place to make those painful decisions. Others will not. At ClearPath, we would argue that our “end” ought to be making that choice easy for developing countries by providing them with better performing, clean alternatives to traditional emitting technologies.

With that end in mind, we need to evaluate our tools. We cannot spend our way to a solution -- the global energy economy and the demands of rising populations around the world are too much even for the mighty U.S. budget to facilitate these decisions. Rather, we must invest in a set of better mousetraps. Such solutions leverage the scarce dollars of U.S. taxpayers into technologies that the global economy will pick up on their own merits because they produce energy - which happens to be clean - more cheaply and efficiently than their competitors. This kind of investment is the very definition of a market-based solution to climate change, one that makes markets themselves the force for change in distributing clean energy, instead of the force we work against.

Achieving this solution must also include effective action by government entities like the Department of Energy, because unfortunately, large scale clean energy solutions are not Uber. These systems cannot be built by two guys in a garage. Energy innovation requires massive scale, sometimes taking decades to get from lab to market.

Where the DOE has been most successful in the past is when it has set long-term, aggressive milestones to develop and stand-up new technologies at price points and performance levels that are meaningful for private markets. The Office of Fossil Energy’s work on unlocking shale gas, the Energy Efficiency and Renewable Energy Office’s work on SunShot to radically decrease the cost of photovoltaic solar, and the Joint Bioenergy Initiative on lignocellulosic biofuels at the Lawrence Berkeley Laboratory are all strong examples. DOE is set for success when the Department has a clear, well understood and shared goal. Strong innovation leadership and clear accountability where political appointees and career employees own the results of all actions then focus our Federal investments. And, with steady investments against the goal over multiple administrations, the federal government tends to produce breakthrough results. We believe that all DOE programs should follow this method - set goals, hold political and career employees accountable to meet those goals, and provide steady investments that drive resources to those end-goals.

Fine tuning our existing structures to supercharge innovation and finance first-of-a-kind projects, will enable a successful technology-neutral approach that sets the stage for America to lead the world in decarbonization.

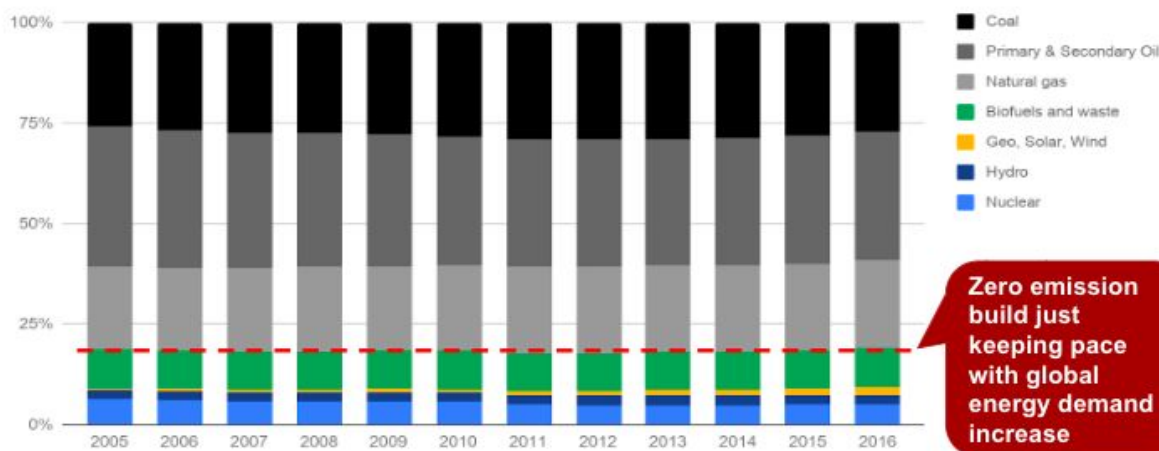
3. Global Energy Realities

To have a debate about climate change rooted in political and technical realism, as well as economic competitiveness, we need to understand the needs of the rest of the world. Developing countries have an insatiable energy appetite. As populations and economies grow they are demanding more and more affordable energy options.

Humanity is not yet transitioning to a zero emission energy system

Share of total primary energy supply by fuel type

% of total (originally in ktoe)



Source: [International Energy Agency World Energy Balances 2018](#)

The current energy choices available to developing nations are less than desirable for the climate. Despite significant global renewables deployment, emissions continue to rise. In fact, the share of global energy supplied by clean sources has not increased since 2005. In other words, clean development is only just keeping up with economic development; clean is not gaining ground. Clean technology available today is simply not up to the task of global decarbonization. It must represent a better, cheaper alternative so developing nations consistently choose it over higher-emitting options. It's also unlikely that story will change any time soon unless new clean technologies become market competitive. In fact, current expected emissions growth from developing Asian countries alone would offset a complete decarbonization of the U.S. economy by

mid-century.³ China, as part of its Belt and Road initiative is financing \$36 billion dollars' worth of inefficient coal power plants in at least 27 countries, totaling 102 GW of new coal power.⁴

This highlights another important fact. If America does not provide the rest of the world with energy technologies, it isn't going to stop developing countries from gaining the technologies they need to grow. Instead, they are going to turn to our adversaries, partnering with countries like China and Russia who view the spread of their technology as a way to expand their power while weakening the United States. In other words, by failing to develop affordable clean energy sources of all kinds, we not only fail to solve the climate issue at hand but also threaten our own national security and geopolitical position.

China and Russia have gained the upper hand in energy exports by leveraging state owned enterprises to achieve their economic and political interests. The aforementioned Belt and Road initiative that China is pursuing relies heavily on state-owned enterprises to achieve its goals. By project value, as of last October, 70% of Belt and Road projects were contracted to state-owned enterprises. These state owned enterprises seek to achieve the strategic objectives of the initiative: to use economics to promote politics and to combine politics and economics.⁵ They seek to achieve these objectives with more than just financial backing from China. The Chinese government offers policy, performance evaluation, and risk management and analysis to these companies to make them more effective.

As for Russia, they also utilize state-owned enterprises to achieve their goals. Their state-owned nuclear company Rosatom reports that at least 33 plants are currently planned for development. Whereas the United States historically lead the world in peaceful and safe nuclear energy exports, this Russian investment has made them the leading exporter of the technology internationally with over a dozen plants currently being built in countries like Turkey, Bangladesh, India and Hungary.⁶ China is close behind Russia, having increased nuclear exports under the belief that more nuclear energy proliferation will make the world more peaceful while also supporting their economic goals.⁷

³<https://www.eia.gov/outlooks/aeo/data/browser/#/?id=10-IEO2017®ion=0-0&cases=Reference&start=2010&end=2050&f=A&linechart=Reference-d082317.3-10-IEO2017~~~~~Reference-d082317.17-10-IEO2017&map=&ctype=linechart&sourcekey=0>

⁴ http://ieefa.org/wp-content/uploads/2019/01/China-at-a-Crossroads_January-2019.pdf

⁵ <https://www.lowyinstitute.org/the-interpreter/china-s-belt-and-road-initiative-inside-looking-out>

⁶ <https://www.economist.com/graphic-detail/2018/08/07/russia-leads-the-world-at-nuclear-reactor-exports>

⁷ <https://carnegieendowment.org/2018/05/14/future-of-nuclear-power-in-china-introduction-pub-76312>

These examples illustrate both the economic potential and the pitfalls of inaction present in this debate. The markets America could serve are vast and the trade benefits we can experience are huge, if we are the first to develop truly scalable clean energy solutions and craft a cohesive plan for international deployment assistance. More broadly, continuing an innovation-focused approach to American clean energy dominance will cement our geopolitical gains from the shale revolution, ensuring we continue as the global energy superpower through the 21st century.

4. America's International Role

America has several levers to ensure our technology offerings are competitive with countries who do not share our interests or values. These include engagement with the international community in financing like the International Finance Development Corporation or IDFC -- created by the BUILD Act of 2018 from OPIC -- and the Export Import Bank, along with bilateral and multilateral engagement on clean energy exports and technology transfer in forums like the Clean Energy Ministerial.

In particular, we have been pleased to see the United State's engagement in the Clean Energy Ministerial over the past few years, as well as our push to create new initiatives in coordination with other foreign governments within this framework on carbon capture, utilization, and storage or CCUS, and nuclear innovation. These are two very important initiatives that seek to ensure that all clean resources are on the table as the world seeks to decarbonize. Having attended both the CEM meeting in Copenhagen where these initiatives were launched in 2017, as well as the CEM meeting in Vancouver this past year, it was a great source of hope to see how many countries were engaged and serious about deploying 24/7 clean energy resources.

To help achieve the deployment of these resources, the US International Finance Development Corporation, which was created to expand on the work done previously by OPIC, is key. This organization will be able to help finance the deployment of American energy technologies internationally and is the first step to truly having a competitive offering to the incentives China and Russia are providing when they approach other countries with offers to develop infrastructure and energy domestically. However, to achieve the largest impact possible, we need to ensure that previous restrictions on nuclear energy development imposed by OPIC do not continue to restrict the activities of the new USIDFC. Similarly, America needs to work to ensure that restrictions on clean energy projects do not exist at international organizations we participate in like the

World Bank. Finally, the continued authorization of the Export Import Bank is key to ensuring the export of energy technologies internationally.

One thing is clear, as Russia and China utilize their command and control government owned enterprises to attempt to gain influence internationally, the American government must utilize the tools they have at their disposal to ensure that our companies, our innovators, and our clean energy technologies have the best possible chance to compete internationally. As stated earlier, achieving the maximum amount of impact from these government organizations will allow a market-based solution to climate change, one that makes markets themselves the force for change in distributing clean energy.

5. A Bipartisan Path Forward

The last Congress hasn't received the credit it is due for boosting low-carbon technologies. The broadly bipartisan agenda enhanced critical incentives for carbon capture, renewables, and advanced nuclear; invested in Department of Energy R&D at record levels; and reformed regulations to accelerate the licensing of both advanced nuclear reactors and hydropower. The 45Q tax incentive for carbon capture and storage technology is a perfect example - it was supported by a vast bipartisan coalition from environmental organizations to organized labor to utilities to coal companies. Notably, seven national unions recently collectively re-emphasized the importance of including carbon capture and nuclear in any national clean energy policy. Lastly, as previously mentioned, the creation of the IDFC through the BUILD Act greatly improves the prospects for American clean technologies internationally.

Going forward, given the scale of the climate challenge, we need to greatly increase the pace and ambition of our efforts. Let's not shy away from smart investments in "moonshot" goal programs that deliver low-cost, high-performing clean technology - from basic research all the way through demonstrations. Let's create stronger financing and incentives to commercialize cutting-edge companies and deploy those technologies globally. And let's enact deep regulatory reforms that remove barriers to rapidly scaling clean technology.

Bipartisan cooperation on climate change is essential under divided government - and attainable. In fact, it is the only chance our nation will have if it is going to play a significant role in the global solution. Thank you again for this opportunity, and I look forward to the discussion.