DIALOGUE

LNG EXPORTS: THE PERMIT APPROVAL PROCESS AND THE ENVIRONMENTAL IMPACTS

SUMMARY

On January 26, 2024, the Biden Administration announced a pause on pending decisions on permits to export liquefied natural gas (LNG) to non-free trade agreement countries until the U.S. Department of Energy (DOE) updates underlying analyses for the authorizations. The United States is the largest global exporter of LNG, and its exports have rapidly grown over recent years. The pause presents an opportunity to review impacts of increased LNG export, including climate consequences, environmental justice harms, and more. On March 20, the Environmental Law Institute hosted a panel of experts to discuss the current global state of LNG exportation, the consequences of the pause, and potential changes to DOE's permit review. Below, we present a transcript of that discussion, which has been edited for style, clarity, and space considerations.

Sarah Vican is Manager of ELI's Educational Programs.
Anna B. Mikulska (moderator) is on the research staff of the Science and Technology Policy Institute at the Institute for Defense Analyses.
Elizabeth Leoty Craddock is a Partner at Holland & Knight L.L.P.
Moneen Nasmith is a Senior Attorney at Earthjustice.
Tade Oyewunmi is an energy and natural resources lawyer and professor.

Sarah Vican: I want to introduce Anna Mikulska, our moderator. Anna is a research staff member at the Science and Technology Policy Institute (STPI) under the Institute for Defense Analyses. Prior to joining STPI, she was a fellow in energy at Rice University's Baker Institute, where she co-led the program on energy and geopolitics in Eurasia, and a senior fellow at the Kleinman Center for Energy Policy at the University of Pennsylvania. She focused on markets and geopolitics of energy, including the use of natural gas as a geo-economic tool and the role of U.S. exports of liquefied natural gas (LNG) in the context of domestic and international energy security.

Anna Mikulska: I will briefly introduce the topic and then introduce our speakers. Beyond reasonable distances, pipeline transport of natural gas is either uneconomical or impossible. Chilling natural gas to -260 degrees Fahrenheit enabled economical maritime shipment in specially designed tankers. More recently, LNG has become more profitable. Starting with the first LNG export terminal in 2016, the United States has built up its export capacity, driven by available natural gas associated with the emergence of large new natural gas-producing locations and crude oil production growth. Some of the existing LNG export facilities originated as import terminals in the early 2000s, when there was a belief that the United States would never again see net increases in domestic oil and gas production and would be one of the largest, if not the largest, LNG importers.

Fast-forward 20 years, and the United States is the world's largest LNG producer with eight operating LNG terminals, six projects permitted and under construction, and seven projects permitted and not under construction. There are eight projects that are under regulatory review.

For comparison, the currently operating terminals could supply a maximum of 104 million tons per annum. The permitted terminals would be able to add almost twice as much. And the terminals that are under review could add almost the same amount in the future.

Of course, not all of the permitted terminals will actually end up being built, but that's something we can talk about going forward with respect to the pause that the White House announced on non-free trade agreement (non-FTA) authorizations to conduct two studies: one focusing on greenhouse gas (GHG) emissions and the other on domestic economic impacts.[1] Even without the pause, the permit

1. On July 1, 2024, a district court granted a request by 16 states to stay the LNG export pause, effective immediately. Louisiana v. Biden, No. 2:24-CV-

approval process has become extremely topical and highly debated, with often opposing views presented across political isles and in the discussions in the media.

We'll open with remarks by Elizabeth Craddock, who is a government relations attorney with Holland & Knight in the Washington, D.C., office. Her areas of focus include energy, environment, natural resources, agriculture, climate change, and trade policy, as well as social justice, ethics, sanctions, and governance issues. She will give us an overview of the permitting approval process and the environmental impacts.

Next, we will have Dr. Tade Oyewunmi, an energy and natural resources law professor and consultant. His focus areas include examining the legal and policy issues impacting natural gas and electricity markets and the development of clean energy technologies. Tade is an associate editor of the *OGEL Energy Law Journal* and an advisory board member of the Institute for Energy Law at the Center for American and International Law. He will follow up with the implications of U.S. LNG exports for energy security and the international LNG market.

Last, we will hear remarks from Moneen Nasmith, who is a senior attorney for national climate issues based in New York and focuses on federal permitting and regulation of fossil fuel transportation and export infrastructure. She represents community environmental groups in proceedings involving gas pipelines, storage facilities, and LNG export terminals before the Federal Energy Regulatory Commission (FERC), the U.S. Department of Energy (DOE), and in courts. Moneen also spent many years working on climate-related litigation and advocacy in New York State and the Northeast region.

Elizabeth Craddock: I want to start this discussion by taking us on a little political and legal journey, as far as it relates to LNG exports, from the congressional action side in Washington, D.C. My background is in the U.S. Congress. I spent more than a decade working there. I started on the House side, then went to law school at Tulane and after that, spent nearly a decade with Sen. Mary Landrieu (D-La.). Obviously, energy production is extremely important to Louisiana. I spent a lot of time working on these issues under her purview, and did all things energy-environment-related.

In preparing for today's webinar, I started by doing a quick search of the *Congressional Record* to see when the topic of LNG *exports* started to pop up. There were hardly any mentions of LNG exports before 2011—maybe one or two mentions sporadically from the 1970s until 2011—so the topic of LNG exports is really new in D.C. compared to other topics. It's only been a little more than a decade that we've been talking about this in earnest, to provide some perspective.

To that end, we had the first U.S. Senate Energy and Natural Resources Committee hearing on LNG exports in 2011.[2] The hearing zeroed in on the Natural Gas Act (NGA)[3] and how it was focused on imports, not exports. Until then, the United States had solely been focused on importing LNG and not exporting it. It wasn't until the advent of hydraulic fracturing (fracking), which allowed producers to go into deeper areas to discover natural gas, that the prospect of LNG took off in this country. In the late 2000s and early 2010s, we were expecting to have a natural gas glut here in the United States, and then the advent of these new technologies allowed us to unlock a tremendous amount of natural gas not only for the United States, but for the rest of the world.

I want to highlight that point in particular. In a 2011 statement, then-Deputy Assistant Secretary at DOE Christopher Smith talked about the U.S. Energy Information Administration's (EIA's) projections for U.S. gas production: an increase to 7.2 trillion cubic feet (TCF) by 2015 and 12.2 TCF by 2035.[4] EIA now projects U.S. gas production at 36.35 TCF by 2022, 37.86 TCF by 2023, and 38.37 TCF by 2024. We have tripled our natural gas production expectations in just under a decade. It's truly incredible what we've been able to unlock in this country as far as energy is concerned.

As stated earlier, the United States is now the largest exporter of LNG. LNG demand is on the rise and is expected to reach 700 metric tons by 2040.[5] According to EIA, between 2021 and 2023, U.S. LNG exports to Europe increased from 29% to 62%.[6] That's tremendous growth over a very short period of time.

Congress had just started thinking about LNG exports in 2011. In 2014, when Senator Landrieu took over the Senate Energy and Natural Resources Committee, I was her staff director, and the first hearing that we did in the committee was on LNG exports, because it was becoming such a hot topic that congressional insight and overview was needed at that time. It's been just a decade that we've gotten to where we are now.

00406, 54 ELR 20100 (W.D. La. July 1, 2024). The stay was based on the allegation that the U.S. Department of Energy (DOE) had used outdated information. On August 5, 2024, DOE announced its intent to appeal to the U.S. Court of Appeals for the Fifth Circuit. Nina H. Farah, *Biden Admin Fights Court Order Blocking LNG Export Pause*, E&E News (Aug. 6, 2024), https://subscriber.politicopro.com/article/eenews/2024/08/06/doe-fights-court-order-blocking-lng-export-pause-00172658.

2. Senate Committee on Energy & Natural Resources, *Full Committee Hearing: to Consider Market Developments for US Natural Gas, Including the Approval Process and Potential for Liquefied Natural Gas Exports* (Nov. 8, 2011), https://www.energy.senate.gov/hearings/2011/11/full-committee-hearing-to-consider-market-developments-for-us-natural-gas-including-the-approval-pro.
3. 15 U.S.C. §§717 et seq.
4. *The Department of Energy's Role in Liquefied Natural Gas Export Applications: Hearing Before the Senate Committee on Energy and Natural Resources* (statement of Christoper Smith, Deputy Assistant Secretary for Oil and Natural Gas (2011), https://www.energy.senate.gov/services/files/58B62501-E2E1-40AA-B024-8E45AB3D4569.
5. Carolyn Davis, *Worldwide LNG Consumption Forecast to Jump 90% by 2040, Shell Says*, Natural Gas Intelligence (Feb. 22, 2022), https://naturalgasintel.com/news/worldwide-lng-consumption-forecast-to-jump-90-by-2040-shell-says/.
6. Press Release, Senate Committee on Energy & Natural Resources, Senate Republican Leaders to Podesta: Reverse Ban on U.S. LNG Immediately (Mar. 18, 2024), https://www.energy.senate.gov/2024/3/senate-republican-leaders-to-podesta-reverse-ban-on-u-s-lng-immediately.

Congressional activity all started with understanding how DOE and FERC are allowed to permit these projects. It starts with the NGA, which requires federal approval of natural gas exports. DOE is responsible for reviewing LNG export applications, which is now a two-step process. When you're talking about DOE's authority, you're talking about the authority to export the product to another country. When you're talking about FERC's authority, you're talking about the authority to site and permit the actual facility.

More specifically, DOE's statutory authority is vested in §3 of the NGA. It is vested with the Secretary of Energy, and that authority has been delegated to the Assistant Secretary for Fossil Energy and Carbon Management at DOE. Section 3(a) sets forth a standard for review of most LNG export applications:

> [N]o person shall export any natural gas from the United States to a foreign country or import any natural gas from a foreign country without first having secured an order of the Commission authorizing it to do so. The Commission shall issue such order upon application, unless, after opportunity for hearing, it finds that the proposed exportation or importation will not be consistent with the public interest.[7]

I want to flag "public interest" because that is essentially the linchpin of the Joseph Biden Administration's recent pause on LNG exports. We'll come back to that later on.

In 1984, DOE delegated its authority to FERC to approve or deny LNG facilities. FERC also authorizes the construction and operation of associated pipelines under §7 of the NGA. While FERC is responsible for authorizing the construction and operation of facilities located onshore or within state waters that liquefy natural gas and load the LNG onto ships for export, offshore facilities are governed by the U.S. Maritime Administration. There have been very few applications, maybe one or two over the years, for an offshore LNG facility.

In approving or denying a project, FERC conducts an environmental review, a National Environmental Policy Act (NEPA)[8] analysis of the facility, to help with its decision. Its reviews of applications to construct these facilities can take two to three years or longer, depending on the facility.

There have been a few changes to the permitting process over the years. First, the NGA was amended by the Energy Policy Act of 1992,[9] creating a different standard of review for applications to export natural gas to those countries with which the United States has an FTA.[10] We currently have 20 FTAs with other countries.[11] There is a separate review process for non-FTA versus FTA facilities. For facilities that the United States has an FTA with, DOE has very limited or minimal discretion. Those projects and facilities are essentially deemed approved once they go through that process.

Second, the two-step approval process at DOE, in which facilities and the projects would first go to DOE to get a conditional approval, then go to FERC for the siting and permitting approval process, and then go back to DOE for final export approval, changed in August 2014. The conditional approval that was provided by DOE at that first step went away. Now, DOE only starts to look at projects after a completed and satisfactory environmental review of the associated export facility.

Going back to the public interest standard, this is the reason why the Biden Administration's pause was given—to allow DOE to go back and make sure that LNG exports are indeed in the public interest of the United States. Section 3 of the NGA does not define "public interest," but there are 10 listed criteria that DOE will consider in reviewing whether or not a project is in the public interest and whether or not it will grant the non-FTA export permit.

The United States has a domestic need for natural gas that is proposed for export. As a country, we do not want to compete with our own demands and needs. Natural gas still supplies a majority of our electricity generation here in the United States. We do not want to put the United States in a situation where we end up increasing the domestic price of natural gas if we have low supply and high demand. It's very important to make sure that we have affordable natural gas prices for U.S. citizens. That's incredibly important to DOE and its calculation.

U.S. energy security is also important. Other major countries that produce vast quantities of natural gas are China, Iran, Russia, and Qatar. We do not necessarily have strong allies that we can go to if the United States doesn't have strong natural gas production. In addition, the balance of U.S. trade is important. LNG exports are a serious trade surplus for the United States. Overall, the United States is still running a trade deficit when you consider all U.S. exports and imports.

International considerations are important. We've got the war in Ukraine and events happening in the Middle East that need to be taken into consideration. Environmental considerations are also important. I know Moneen is going to go into that a little later. As you can see, it's a balancing act on what DOE has to do when trying to determine whether or not LNG exports are in the public interest.

Finally, there have been many legal challenges brought against these facilities. Since the first ones were proposed, there have been many, many lawsuits. There are lawsuits on the actual approval of the permit, whether it's challenging FERC's consideration and their approval process or DOE's. For example, a letter was sent on February 6 from state attorneys general signaling that they're going to pose a legal challenge against President Biden's pause on LNG

7. 15 U.S.C. §717b(a).
8. 42 U.S.C. §§4321-4370h, ELR Stat. NEPA §§2-209.
9. Pub. L. No. 102-486, 106 Stat. 2776.
10. 15 U.S.C. §717b(c).
11. Office of the U.S. Trade Representative, *Free Trade Agreements*, https://ustr.gov/trade-agreements/free-trade-agreements (last visited Aug. 5, 2024).

exports.[12] I expect we will continue to see a lot of lawsuits in this space.

What have FERC and DOE accomplished to date? FERC provides a list of all the terminals that are existing, approved, or under construction.[13] There are eight facilities that have been approved, with a combined total capacity of 14.43 billion cubic feet (BCF) per day.

LNG export terminals that are FERC-approved and under construction—not shipping LNG to date—have a combined capacity of 17.53 BCF per day. Terminals that are FERC-approved but not under construction have a combined capacity of 13.34 BCF per day. So, the total FERC-approved capacity is 45.3 BCF per day. As a reminder, the first train of LNG left the terminal from the United States in 2016. We have 25 total approved FERC projects.

After the pause was announced, there was a lot of activity in Congress and Washington, D.C., about LNG exports. There have been many speeches on the U.S. House of Representatives floor and the Senate floor about it, and many letters have been sent.

On the House side, H.R. 717 passed,[14] which was offered by Rep. August Pfluger (R-Tex.) with nine Democrats supporting the legislation. The bill would essentially take away the approval authority of LNG exports from DOE and leave it with FERC.

In addition, Energy and Commerce Committee Chair Rep. Cathy McMorris Rodgers (R-Wash.) read a letter with more than 150 Republican signatures to President Biden on February 4, demanding his administration expeditiously approve all pending applications to increase the global supply of natural gas.

You can imagine that in a Republican-controlled House, there's a lot happening in that space. I would expect to see more messaging on this in the future and especially as we ramp up to the elections.

On the Senate side, S. 3704[15] would essentially do most of what H.R. 7176 would do, but a little more. I think it's interesting here that senators can do what the representatives don't have the ability to do: they can block presidential nominees from moving forward. It takes a lot of time to vote on specific measures in the Senate, and Majority Leader Chuck Schumer (D-N.Y.) doesn't have a lot of time to process many of President Biden's nominees. So, if the nomination cannot go by unanimous consent, meaning that 100 senators approve of the nomination, then there is no time left to process and vote on the nomination, meaning essentially one senator can block that nomination.

For example, Sen. John Kennedy (R-La.) has vowed to block President Biden's nominees to the State Department and DOE until the pause is lifted. LNG exports are crucially important to his state, so it's no surprise that he might do something like that.

In addition, four Republican members of the Senate Committee on Energy and Natural Resources sent a letter on this issue to John Podesta, who was serving as senior advisor to the president for clean energy innovation and implementation.[16]

Do I think that the House bill will pass in the Senate? Probably not. I'm not sure that they could get to 60 votes, but I think they could get pretty close. We might continue to see some congressional action on this in the future.

Last but not least is the elections. What's happening in the House this year has been noteworthy for many reasons. We've had four members leave since December. As soon as Rep. Ken Buck (R-Colo.) leaves, there will only be 218 Republicans to 213 Democrats. It's one of the smallest majorities for the Republicans in U.S. history.

I do think the House will likely flip come November. I think that is the expectation given where the House sits at the moment.

It's a different story in the Senate. Thirty-four seats are up there, and 23 of those are Democratic or Independent seats. So, the math doesn't really work out for Democrats on the Senate side. Sen. Joe Manchin (I-W. Va.) is one of the non-Republicans who's up, and he's not running again. That seat will flip to the Republicans. Sen. Kyrsten Sinema (I-Ariz.) is also not running again. It's unclear what will happen in that race, but it's certainly going to be a toss-up. The other two vulnerable members are Sen. Jon Tester (D-Mont.) and Sen. Sherrod Brown (D-Ohio). I think we can expect that the Senate will shift to Republican control.

What does that mean for LNG exports moving forward? We can expect to see the Senate try to push forward on these measures. But without Democrats on either side pushing for this, I'm not sure there will be enough votes come next Congress to make something like that happen. We just have to wait and see who will get elected to these seats, what that entails, and how that shakes out.

On the Administration side, we've all seen the polling. It's a toss-up at the moment. If former President Donald Trump is reelected, the pause would be immediately lifted and we would be moving forward, I think, in a fast and furious way on LNG exports. If President Biden is reelected, consider this: Energy Secretary Granholm said at the CERAWeek energy conference, "By the time we meet here in this place next year, it's going to be long in the rearview mirror."[17] So, I think that regardless of who is elected, we will likely see the pause on LNG exports lifted within a year.

12. Letter from Attorneys General for Alabama, Alaska, Arkansas, Georgia, Idaho, Indiana, Kansas, Kentucky, Louisiana, Mississippi, Missouri, Montana, Nebraska, North Dakota, Ohio, Oklahoma, South Carolina, South Dakota, Tennessee, Texas, Utah, West Virginia, and Wyoming, to Joseph R. Biden, President, and Jennifer M. Granholm, Secretary, DOE, re: Objections to the Liquefied Natural Gas Export Pause (Feb. 6, 2024), https://www.alabamaag.gov/wp-content/uploads/2024/02/LNG-Letter-Final-02-06-2024.pdf.
13. FERC, *U.S. LNG Export Terminals—Existing, Approved Not Yet Built, and Proposed*, https://www.ferc.gov/media/us-lng-export-terminals-existing-approved-not-yet-built-and-proposed (last updated July 2, 2024).
14. 170 Cong. Rec. H649 (daily ed. Feb. 15, 2024).
15. 170 Cong. Rec. S309 (daily ed. Jan. 31, 2024).
16. Press Release, *supra* note 6.
17. Brian Dabbs, *Granholm Says LNG Pause Will End Within a Year*, E&E News (Mar. 18, 2024), https://www.eenews.net/articles/granholm-says-lng-pause-will-end-within-a-year/.

Moneen Nasmith: I'll start by saying that I work for Earthjustice, but any views that I present today are my own and I'm not expressing any views on behalf of any of our clients or the organization. I also want to highlight that many of the harms the LNG industry is causing domestically are being felt most acutely by frontline communities, particularly those located in the Gulf area. While I will certainly try to communicate as best as I can some of what those communities are facing, I am not here to speak on their behalf; they have a very important voice and perspective that I do not represent.

Stepping back, Liz did a good job of outlining how the NGA applies to LNG exports. In addition to the NGA, LNG export projects also must be reviewed under NEPA. Both FERC and DOE are responsible for complying with NEPA. And the way that has worked out, given the shift of responsibilities that Liz outlined, has been that FERC will start with an environmental review under NEPA of the terminal itself. Then DOE will have an opportunity to do a NEPA review of the environmental impacts of the exports.

That is kind of an odd division of labor that the U.S. Court of Appeals for the District of Columbia (D.C.) Circuit created in *Sierra Club v. Federal Energy Regulatory Commission*[18] (referred to most often as the Freeport decision) and subsequent cases. Even though the impacts of producing, shipping, and burning gas are indirect effects of building an LNG terminal, and the impacts of the terminal are indirect effects of authorizing exports, and NEPA requires that each federal agency assess the indirect effects of the action it is reviewing, the D.C. Circuit decided to bifurcate the NEPA responsibilities for LNG export projects so that FERC looks at just the impacts of the terminal and DOE looks at the upstream and downstream effects of LNG exports.

Starting with the direct effects of the terminal that FERC reviews, it is important to understand that LNG export terminals are massive industrial facilities. This is not a small thing FERC is considering—they are huge complexes that process enormous amounts of gas, that take up and burn enormous amounts of energy, and that have very real-world impacts on the communities in which they are located. It takes a huge amount of effort and energy to convert gaseous methane into a liquid form. It involves huge tankers and other kinds of facilities to actually get the gas cooled and compressed down to the point where you can put it in a ship and send it across the globe.

It is also important to understand that these facilities are primarily located in the Gulf Coast area. There are a couple that are located on the East Coast and one that is contemplated for Alaska, but by and large when we talk about the LNG buildout in this country, we're talking about the Gulf Coast of Texas and Louisiana. Not surprisingly, the specific areas in the Gulf Coast of Texas and Louisiana where these facilities are being sited are primarily in communities that are either low-income or communities of color or both. More often than not, those communities are already overburdened by existing sources of pollution or contain vulnerable populations, or both.

Principles of environmental justice would have us, among other things, seek to lessen the pollution burdens in these communities. These communities not only face burdens from the LNG export industry, but also are surrounded by other heavy industry like refineries and petrochemical facilities. And because they are often low-income communities, many are struggling with other adverse economic and social realities, including inadequate access to health care and other public health realities that heighten the community's vulnerability to more pollution.

The list of direct impacts of export terminals that FERC is supposed to consider as part of its review under NEPA and then weigh in its ultimate determination under the NGA of whether each of these projects is in the public interest is lengthy. They include air quality impacts—LNG terminals, for example, emit huge amounts of ozone precursors and particulate matter. They also include safety risks—for example, we saw not that long ago that a massive fire occurred at the Freeport LNG terminal.[19]

Most of the safety rules that apply to LNG terminals are inadequate—right now, the Pipeline and Hazardous Materials Safety Administration is undergoing an update to the safety rules that apply to a lot of these facilities. And there is a lot of concern by first responders and communities that don't have adequate information about what is being stored at these facilities, how that might affect the local communities in the context of an emergency, or other basic things like the adequacy of evacuation routes. These very substantial concerns are often not adequately incorporated into FERC's review.

The facilities themselves often burn gas to generate their own power for the liquefaction process or draw power from fossil fuel-burning sources, so the terminals can be responsible for millions of tons of emissions per year alone over the life-span of these facilities, which tends to be at least a couple of decades. They are huge, huge "carbon bombs."

Additional impacts of the terminals include harm to wetlands and species. When you site these facilities on the shores of Texas and Louisiana, you are compounding the problem of having the wetlands there that have historically protected those areas from hurricanes and storms getting further fragmented, degraded, and eliminated. Some of these facilities, particularly the ones that are being sited in the southern portion of Texas right by the border, are in a little pocket of unspoiled area in the Gulf that is the last remaining habitat for a lot of species. Siting massive industrial facilities like this into their midst, therefore, poses a real threat.

And this is just a small sampling of the potential impacts from LNG terminals. In the limited time we have, I can't

18. Sierra Club v. Federal Energy Reg. Comm'n, 827 F.3d 36, 46 ELR 20117 (D.C. Cir. 2016).

19. IFO Group, Freeport LNG: Loss of Primary Containment Incident Investigation Report (2022), https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/2022-11/IFO-Group-RCFA-Report-final-redacted.pdf.

be completely comprehensive, and what I listed does not cover the effects of export that DOE should review.

Shaping how both FERC and DOE evaluate LNG export projects is litigation under NEPA and the NGA. Liz also emphasized that we've seen a lot of litigation around the approval of these terminals. The reason for this is that, from the perspective of environmental, community, and consumer advocates, the reviews of LNG exports and terminals are being done with insufficient attention being given to the harms inflicted by this industry.

One key problem is a failure to adequately evaluate and weigh the harms LNG terminals cause to environmental justice communities. The *Vecinos* case,[20] which involves the Rio Grande and Brownsville facilities, is a prominent example of this. This case originally was brought before the D.C. Circuit, which found that FERC had done an inadequate job assessing environmental justice impacts, among other things. The court faulted FERC for failing to identify the true number of environmental justice communities that were going to be affected by this facility and, as a result, sent the decision back down to FERC.

FERC then identified 367 additional impacted environmental justice communities, but gave those communities and the public in general the opportunity to comment on materials that the companies submitted to FERC. It never provided an opportunity for input and public comment on FERC's own analysis of the impacts to those additional communities or the new information the LNG companies submitted. Instead, FERC issued another order approving the project over a very vigorous dissent by one of the commissioners.[21] That is back up on appeal in front of the D.C. Circuit. We will definitely be watching closely to see what comes of that.

Another big issue is a general underestimation of air quality impacts. Many of these areas are technically in attainment under the Clean Air Act (CAA),[22] but that's not going to last for long. There's a tool that has been used by a lot of these facilities to go just under a threshold and not get any additional scrutiny and not ask, among other important questions, what cumulative impact these facilities have by themselves but also adding that into the aggregate of what else is going on in the airshed.

This is a problem of death by a thousand cuts. The individual cut might not be that big, but it might be that one cut that tips you over the edge. And that's not something FERC or the state air quality authorities are looking at in enough detail.

There was an argument just a few weeks ago in front of the D.C. Circuit on challenging FERC's failure to look at the cumulative impacts of air emissions in *Healthy Gulf v. Federal Energy Regulatory Commission*,[23] concerning the Commonwealth LNG project.

In addition, in all of these projects, FERC has been refusing to determine the significance of its climate change emissions. It claims it is unable to assess the significance of the climate change impacts of these facilities even where you have facilities that are, as I mentioned earlier, directly responsible for millions of tons of GHG emissions per year. And this is not unique to its consideration of LNG terminals under §3 of the NGA; it's been doing this in the §7 pipeline cases as well.

The problem with this is that FERC will do at least some of the climate math and arrive at a figure for total emissions, but refuse to explain under NEPA if that volume of emissions is a problem, how it fits into the context of larger efforts to not just stop increasing emissions but to actually reduce emissions, or whether and to what extent those emissions might be mitigated. The problem extends to FERC's weighing under the NGA, where FERC has so far failed to explain in its approvals of all these terminals how their harms to the climate factor into its determinations that approving the terminals are not inconsistent with the public interest.

The Evangeline Pass case is another case that was argued mid-September, and we are waiting for a decision from the D.C. Circuit any day now.[24]

In addition to the problem of FERC not adequately assessing the harms caused by the LNG terminals, there is the problem of DOE not adequately assessing the upstream and downstream impacts of LNG exports, especially as the United States undergoes the very big shift in reality that Liz described of going from being a net importer to a very huge exporter of gas. Those upstream harms include the increased gas production in the United States shale plays, as LNG exports drive additional development of gas, causing environmental and community harms in the various areas of the country where gas development occurs, as well as significant additional GHG emissions. Downstream harms include the climate harms from consumption of huge volumes of gas for decades to come.

DOE is currently undergoing an overhaul of the data and modeling it relies on to evaluate the environmental, community, and economic effects of LNG exports under NEPA and the NGA, including taking a closer look at what exporting increasing volumes of gas means for domestic consumers. Liz mentioned the economic impacts of LNG exports and, to date, one of the big problems on the economic side has been that DOE has not looked at the distributional effects of allowing more and more exports.

20. Vecinos Para el Bienstar v. Federal Energy Reg. Comm'n, No. 20-1045, 51 ELR 20150 (D.C. Cir. Aug. 3, 2021).
21. Rio Grande LNG, LLC Rio Bravo Pipeline Co., LLC, 185 FERC ¶ 61080 (2023).
22. 42 U.S.C. §§7401-7671q, ELR Stat. CAA §§101-618.
23. On July 16, 2024, the D.C. Circuit held that FERC violated NEPA by "inadequately explain[ing] its failure to determine the environmental significance of the project's greenhouse gas emissions, and [by] fail[ing] to adequately assess the cumulative effects of the project's nitrogen dioxide emissions." Healthy Gulf v. Federal Energy Reg. Comm'n, No. 23-1069, 54 ELR 20107 (D.C. Cir. July 16, 2024).
24. On April 30, 2024, the D.C. Circuit denied the petitions for review and held that FERC's assessment of the terminal was reasonable. Alabama Mun. Distribs. Grp. v. Federal Energy Reg. Comm'n, No. 22-1101, 54 ELR 20068 (D.C. Cir. Apr. 30, 2024).

Its previous analysis essentially assumed that more LNG exports would be a good thing for all consumers, based on the assumption that all domestic consumers would experience a benefit from LNG companies increasing their profits. However, this ignores that most domestic consumers are not holders of stock in LNG companies and that the increased domestic prices that will come from more LNG exports will most adversely affect consumers who are the least likely to own LNG company stock.

I'll talk a bit about what we're hoping to see from DOE's revision and updating of the analysis it relies on to weigh whether to approve more exports. But first, I should note one additional procedural wrinkle that has and may affect how DOE reviews LNG export applications. The Trump Administration's DOE adopted a "categorical exclusion" for LNG exports, formalizing that Administration's view that no NEPA review of any LNG export authorization is necessary. A categorical exclusion is a tool under NEPA that is supposed to apply to types of activities that are environmentally benign or beneficial and so can be categorically excluded from NEPA review.

Early on, the Biden Administration identified this DOE categorical exclusion as a regulatory item it wished to revisit and said it is not going to use it. We have been told multiple times that it's supposed to revisit it, but it has still not taken it off the books. The continued existence of this categorical exclusion is very much at odds with DOE's announcement that it needs to reevaluate the full scope of LNG exports' environmental harms and at odds with its practice in cases like the one involving Alaska LNG, where it ordered a supplemental environmental review to assess the upstream and downstream impacts of that project's exports.[25]

As currently drafted, the studies DOE has relied upon and is updating on the climate impacts of LNG exports are extremely flawed. The study contains many baked-in assumptions that are not reflective of the true nature of the climate harms caused by LNG exports. For example, the study assumes, at least in part, that shipping LNG to other parts of the world often prevents the use of higher-carbon fuels like coal or oil. But there is little hard data to back that up—and certainly would not hold true in places like Europe, where there are aggressive carbon reduction mandates—and the assumption ignores that LNG exports also can offset renewables. That part of the equation is not something DOE has looked at, although we are hopeful that will happen as DOE updates its analysis.

DOE also has a lot of room to improve its analysis of upstream impacts and stop its practice of making unsupported assumptions to minimize the nature and extent of those impacts. For example, in the relatively recent Alaska LNG project, which, full disclosure, I am part of the litigation team challenging this decision, DOE examined how exports from that facility would facilitate the development of gas in the North Slope in Alaska, and found that increased production there would have significant adverse effects on Indigenous hunters. Instead of meaningfully grappling with those harms, DOE assumed that the hunters would just go elsewhere. This is indicative of the work DOE needs to do to take true account of the upstream harms caused by increased LNG exports. Additional fracking has a whole host of very environmentally damaging consequences that DOE has not fully accounted for.

Finally, a critical part of DOE's analysis that needs to change is the failure to incorporate environmental and energy justice considerations, including economic impacts to environmental justice communities, into its review of LNG exports. It needs to start by ensuring that the voices of frontline groups are heard loud and clear as it updates its analysis.

Tade Oyewunmi: The previous speakers already touched on several important issues that arise when considering the regulatory and policy implications for developing LNG export projects, including the environmental and local impacts. My discussion will focus on the implications for the international gas market and energy security, and review some of the key questions or relevant issues. Energy security is not just about having uninterrupted access to energy resources like gas, wind, or nuclear. Rather, it is more about securing the supply of adequate sources of energy at an affordable price and under conditions in which the risks of major disruptions are eliminated or effectively mitigated.[26]

Note that long-term energy security requires timely investments in production and supply networks alongside the infrastructure needed to meet projected energy demand, while short-term energy security implies the ability of the energy system or market to react promptly to sudden changes in the balancing of supply and demand. Both short- and long-term energy security concerns have become critical aspects of enabling a robust energy policy framework in the era of decarbonization. In this era, the essential need to curb energy-related GHG emissions by introducing cleaner sources into the energy mix would also need to be balanced by measures that promote affordability and resiliency in the public interest.[27]

EIA recently projected that total LNG export project capacity in North America—i.e., Mexico, Canada, and the United States—will likely double between now and 2027-2030.[28] By the end of 2027, EIA estimates that LNG export capacity will grow by 1.1 billion cubic feet per day (Bcf/d) in Mexico, 2.1 Bcf/d in Canada, and 9.7 Bcf/d in

25. The sufficiency of DOE's supplemental review is the subject of ongoing litigation, and Moneen Nasmith is one of the attorneys representing petitioners. Center for Biological Diversity v. United States Dep't of Energy, Nos. 20-1503 and 23-1214 (D.C. Cir., filed Aug. 11, 2023).

26. International Energy Agency (IEA), *World Energy Outlook 2022*, at 184 (2022), https://iea.blob.core.windows.net/assets/830fe099-5530-48f2-a7c1-11f35d510983/WorldEnergyOutlook2022.pdf.

27. Tade Oyewunmi, *Resilience, Reliability and Gas to Power Systems in the USA: An Energy Policy Outlook in the Era of Decarbonization*, 14 J. World Energy L. & Bus. 257 (2021); European Commission Directorate-General for Energy, *In Focus: EU Energy Security and Gas Supplies* (Feb. 15, 2024), https://energy.ec.europa.eu/news/focus-eu-energy-security-and-gas-supplies-2024-02-15_en.

28. EIA, *LNG Export Capacity From North America Is Likely to More Than Double Through 2027* (Nov. 13, 2023), https://www.eia.gov/todayinenergy/detail.php?id=60944.

the United States from a total of 10 new projects across the three countries.[29]

Despite the projected growth in export capacity, note that there is a difference between capacity and actually supplying and being able to produce or even complete the construction of the project. Useable capacity arises after the project has been approved and completed. Then there is a possibility of exporting based on contracts (typically long-term supply and purchase agreements) that have been signed.[30] Before projects are approved, DOE considers the contracts signed between project developers and potential buyers. All that ties into the question, will and should U.S. LNG export capacity increase between now and 2030, for example, or 2027, based on those projections, especially following DOE's ongoing review and after the pause?

To answer that question, it's important to consider the underlying energy policy dynamics that are at play. The rationale behind approving or considering the project is to ensure that there is an adequate supply of affordable and reliable energy to end-users in a sustainable manner. In this context, LNG is being produced to be exported and to supply gas to the international market (primarily the European and Asian markets). The typical developer plans to supply energy in an affordable and competitive manner, and to also supply reliable energy that meets the objective security of supply (confirmed by long-term offtake agreements), but in an environmentally sound and sustainable way as required under the governing legal and regulatory framework. That also speaks to the need to consider things like climate impacts, environmental impacts, and environmental justice considerations that Moneen talked about earlier.

To have a comprehensive approach to energy planning and investment—whether an investment should be made in a particular energy infrastructure because really there's no energy infrastructure or any large-scale infrastructure that will not have one impact or the other—the key question is, what is the impact and what is the trade off between the impact and the benefits? What is the benefit of the project in itself?

In an energy context, you want to be sure that the proposed supply projects are developed to meet demand while meeting the requirements of affordability in a reliable, secure, and environmentally friendly or sustainable manner.[31] Those are the key considerations in all the issues that have been coming up with the Texas LNG projects being considered.

Section 3(a) of the NGA requires all parties seeking to enter into natural gas transactions with foreign buyers to obtain export authorization from DOE. DOE has the role of determining whether authorizing the export project is in the "public interest."[32] The public interest evaluation would ordinarily include a consideration of the domestic need for natural gas (i.e., local U.S. energy security), economic impacts, national security interests, and environmental impacts.[33] Based on §3(e) of the NGA, FERC is responsible for authorizing the siting, construction, expansion, or operation of an LNG export terminal, onshore or in state waters. Accordingly, relevant aspects of project siting, construction, and operation would be subject to requirements established in federal, state, and local law. Thus, both DOE and FERC authorizations are subject to environmental review under NEPA and other laws applicable to federal agency actions.

The role of DOE and FERC and all the institutions involved in reviewing and approving the projects is to strike a balance between the relevant policy objectives. It's a very delicate and complex endeavor, but there are ways that this can be resolved, and through which that balance can be effective. For example, during the review process, some requests can be made by the reviewing agency to the project developer to deal with a particular issue like capturing emissions or curtailing emissions or installing a particular process that will address all those concerns.

There are mainly two ways of depicting energy security as the uninterrupted availability of energy supply and energy resources at an affordable price. First is long-term security, which means that the industry and the stakeholders are making timely investments in developing and supplying energy resources. It could be solar, it could be wind, it could be natural gas. But we are focused on natural gas in this discussion. Hence, what are the key factors to consider in making an investment decision to supply energy and meet projected demand in an affordable and reliable way, in the long term, while considering the economic and environmental issues?

The other aspect is short-term security of supply, which is simply the ability of the energy system as it is, not necessarily as it ought to be but as it is right now, to meet demand by end-users. For example, in Europe, there is a system that for more than 20 or 30 years has relied a lot on Russian gas and the use of a lot of coal.[34] Over the past decade, coal use has reduced significantly, while gas use has increased, because the gas market has been reformed and restructured in a way to facilitate competitiveness and affordability.[35] Gas trading hubs, such as the

29. *Id.*
30. *See* EIA, *LNG Sale and Purchase Agreements Signed in 2023 Support U.S. LNG Projects* (Feb. 7, 2024), www.eia.gov/todayinenergy/detail.php?id=61384.
31. For a discussion of how these policy issues play out in the U.S. context, see David B. Spence, *Paradoxes of "Decarbonization,"* 82 Brook. L. Rev. 447 (2017). For a discussion of the transnational contexts, see Decarbonisation and the Energy Industry: Law, Policy and Regulation in Low-Carbon Energy Markets (Tade Oyewunmi et al. eds., Bloomsbury 2022).
32. Lexie Ryan, Congressional Research Service, R47468, U.S. Measures to Provide Liquefied Natural Gas for the European Union 18-19 (Mar. 6, 2023).
33. *Id.*
34. *See* Eurostat Statistics Explained, *Energy Statistics—An Overview*, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_statistics_-_an_overview (last visited Aug. 6, 2024); David Buchan, Oxford Institute for Energy Studies, Europe's Energy Security—Caught Between Short-Term Needs and Long-Term Goals (2014), https://www.oxfordenergy.org/publications/europes-energy-security-caught-between-short-term-needs-and-long-term-goals/.
35. Tade Oyewunmi, Regulating Gas Supply to Power Markets: Transnational Approaches to Competitiveness and Security of Supply 179-234 (Wolters Kluwer International 2018); Kim Talus, *Decades of EU Energy Policy: Towards Politically Driven Markets*, 10 J. World Energy L. & Bus. 380 (2017); IEA, European Union 2020: Energy Policy

Title Transfer Facility (TTF) in the Netherlands, have emerged over time.

The TTF is reported to be the most liquid pricing location in Europe, and therefore often serves as a pricing proxy for the overall European LNG import market.[36] Such market-based systems help to promote affordability and support the security of supply, which also indirectly depends on reliable imports of gas to the market via LNG or pipelines. In addition, there is the growing introduction of renewable energy technologies, like solar and wind, and a discussion about hydrogen for the wider European internal energy market.

Another question that would come up in determining how secure the energy system is would be the ability to respond to sudden changes. For example, due to a rapid post-COVID economic recovery in 2021 and the fact that most producers had curtailed investments, while Russia began withholding gas supplies to Europe in 2021 ahead of its invasion of Ukraine, energy prices began to rise due to tightness in supplies. Russia's attack on Ukraine greatly exacerbated the situation as many European countries declared their intention to phase out Russian gas imports completely and Russia has increasingly curtailed or even turned off its export pipelines.[37]

In response, the European Union (EU) introduced gas storage obligations, coordinated gas import/purchase measures, and agreed on voluntary targets to cut gas and electricity demand by 15% during the winter through efficiency measures, greater use of renewables, and support for efficiency improvements. These led, among other things, to fast-tracking the approval of regasification facilities to support the importation of natural gas via LNG from suppliers in the United States, Qatar, Algeria, and so on.

The alternative, considering the EU's energy policy objective of decarbonization and promoting clean energy systems and renewable energy targets, and so on, would have been to start using coal or some other more carbon-intensive conventional energy systems to meet end-user demand while the geopolitical implications of the war between Russia and Ukraine rage on. Alternative, cleaner sources such as solar and wind have their systemic or reliability constraints, such as the need for adequate storage and negative pricing effects on the energy market. In the short to medium term, the market and energy mix must be balanced or else it's going to be very challenging to achieve a secure system that works for everyone.

Upstream activities are very interconnected with midstream and downstream activities. For example, in the United States, most of the gas resources are found together with oil (i.e., associated gas fields), especially in the main production areas such as the Permian Basin. Thus, more flaring is likely to arise while producing the oil, if there is no reasonable way to evacuate or monetize or bring the gas to market either through pipelines or commercialization projects like LNG.[38]

The environmental impacts of flaring are worse than having to process the gas, gather the gas, and sell it to a market that will probably be burning coal, even though the processes of liquefaction and regasification also have their own challenges. Those are things that need to be considered and identified in all these issues because you need regasification units to import. Currently, the Germans and Europeans are building a lot of regasification capacity.

The British Petroleum (BP) Statistical Review of World Energy 2022 provides a chart highlighting the trade movements of gas by LNG and pipelines in the international context as of 2021.[39] All the pipeline supply from Russia, for example, has reduced drastically since 2021. Thus, all that energy that would have been supplied would need to be met in a secure and reliable way going forward or else there's going to be a lot of economic and social impacts.

What are the main supply drivers for a typical LNG export project? How do parties and stakeholders maintain the security of supply and agree on prices that will work for everyone? Usually, there are long-term take or pay agreements. And nowadays, you have energy markets and trading, and so on. Most of the projects that will be impacted by the pause and the review that is currently going on have signed 20-year, 25-year long-term take or pay agreements.

Considering the importance of the European market where most of the gas is going to, including the Southeast Asian market, there are decarbonization policies in place that have set, for example, a target to reduce gas drastically after 2040 or 2030. Hence, there is a need for a balancing and identification of how the contracted gas supplies and possible changes in demand are going to play out. I think the market and contracts have an important role to play in helping to strike that balance that the institutions need to make.

Other factors that impact the export of gas via LNG projects include the shipping terms, the potential for a material change of law during the life-span of the project, and force majeure events or winter weather conditions influencing demand. In the EU, for example, the warmer winter that took place in 2023 led to more reductions in energy demand. It had a good impact in that there wasn't a lot of stress or tightness in the supply market, although the gas storage reserves were still available to support the short-term energy security needs. That, in effect, reduced the price of the supplies coming in.

Review 25-29 (2021), https://iea.blob.core.windows.net/assets/ec7cc7e5-f638-431b-ab6e-86f62aa5752b/European_Union_2020_Energy_Policy_Review.pdf.

36. *See* Patrick Heather, *European Traded Gas Hubs: The Markets Have Rebalanced* (Oxford Institute for Energy Studies Paper NG 192, 2024), https://www.oxfordenergy.org/wpcms/wp-content/uploads/2024/07/European-Traded-Gas-Hubs-the-markets-have-rebalanced-NG192.pdf.
37. IEA, *Global Energy Crisis*, https://www.iea.org/topics/global-energy-crisis (last visited Aug. 6, 2024).
38. Tade Oyewunmi, *Transnational Approaches to Controlling Methane Emissions From Oil and Gas Operations*, *in* Reducing Emissions of Short-Lived Climate Pollutants: Perspectives on Law and Governance 364 (Yulia Yamineva et al. eds., Brill 2023).
39. BP, BP Statistical Review of World Energy 2022, at 37 (2022), https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2022-full-report.pdf.

According to the EIA data, the United States accounted for 27%, or 2.4 Bcf/d, of total European LNG imports in 2021, which increased to 44% (6.5 Bcf/d) in 2022 and 48% (7.1 Bcf/d) in 2023. Europe's LNG import and regasification capacity is also projected to expand to 29.3 Bcf/d in 2024. Clearly, this is a major energy market where some of these energy policy dynamics are playing out.

For Europe, maintaining energy security is essential, and that requires diversifying sources of energy supply. The EU also has ambitious targets to integrate renewable energy and decarbonization of the internal energy market. For instance, the REPowerEU Plan includes an objective of renewables accounting for 45% of energy in the EU mix by 2030. Therefore, striking that balance in energy and climate policy goals is a very interesting one that is playing out in Europe at the moment.

For the U.S. LNG projects currently being considered, one of the critical considerations is which markets are those projects designed to supply. There are markets in countries where the United States already has an FTA and those in countries that do not have an FTA with the United States. Applications to export LNG to countries with which the United States has an FTA are deemed automatically in the public interest. There are several reasons for that, and it usually leads to a better outcome at the end of the day, after considering all the other factors like environmental impacts.

Applications to export LNG to the EU and non-FTA countries should be granted unless DOE finds that the proposed exports will not be consistent with the public interest, or where trade is explicitly prohibited by law or policy. Twenty countries have FTAs with the United States. Panama is the most recent one.[40] An FTA is an agreement between two or more countries where the countries agree on certain obligations that affect trade in goods and services, and protections for investors and intellectual property rights, among other topics. For the United States, the main goal of trade agreements is to reduce barriers to U.S. exports, protect U.S. interests competing abroad, and enhance the rule of law in the FTA partner countries.

One of the principles applicable to international business transactions, such as LNG import and export between countries with FTAs, is national treatment. That means treating one another's companies and investors the same way. There will be no discrimination and no unlawful expropriation, and legitimate interests will be protected, and so on. Contracting countries will endeavor to remove hidden trade barriers by ensuring that imported products are treated no less favorably than domestically produced goods.

Then also, there usually is going to be a free trade zone where investors from both countries can develop, transact, and trade, and facilitate investments. FTAs and investment protection agreements usually have a bespoke dispute resolution mechanism stipulated in the investment or trading agreement or the treaty framework itself. So, it makes sense to presume that whatever investment is going into that country or within that framework is in the public interest.

The other countries will need to justify what is the public interest involved. Elizabeth already discussed the public interest determination issue and Moneen already discussed the environmental implications aspect, and I believe Elizabeth hinted at the national security side as well. These are important factors and elements to be considered, and time will tell.

In terms of North American capacity, the approved capacity between now and 2027 is projected to double. But in terms of U.S. capacity, should those projects being proposed be approved, then the capacity for the United States would increase. If they are not approved, then one can assume supplies will emerge within the international gas market from other sources apart from the United States as long as there is a demand and willing buyers and sellers. There's a market system in most places. And once there is demand, then it's probably going to be met by other sources of supply like Mexico, Canada, or Qatar.

It is essential to realize the delicate balance between energy security, public interests, and environmental concerns when all these projects are being considered. Agreements like community benefit agreements or environmental justice agreements will need to be developed when reviewing these projects. Such agreements between project developers and host communities can help lay out the terms under which projects can proceed and provide a framework for addressing the legitimate concerns of the host communities.

Anna Mikulska: We have time for discussion and a couple of questions. It occurred to me that our speakers underscored the issues with natural gas and LNG exports—the push and pull of different aspects. On the one hand, there are the environmental effects related to climate change and burning of fossil fuels; on the other hand, there are the issues of energy security. Both issues impact people's lives in a significant way and could cause harm if not taken seriously.

The other thing I heard was a distinction between domestic and international effects in terms of energy security. Do we have enough energy resources in the United States? Do we have too much of them in the United States? Also, does the world have enough fuel for energy security? And is the access to fuel more or less carbon dioxide-intensive? This is where the environmental aspects come in—if the United States cuts LNG exports, does it cut carbon dioxide emissions globally? Or if the United States doesn't cut exports, does it negatively impact U.S. pledges in terms of the environment and climate?

It seems like none of the U.S. administrations have been able to figure it out in a way that is acceptable to all. Mostly, it's different people pointing to different issues—that it's at the top of their mind or at the top of the mind of their constituencies. But what I did not hear and would love to hear from you about is the real impacts of the pause on LNG permits. Pretty much everybody underscored that we have quite a lot permitted, but not all of it will be built.

40. *See* Office of the U.S. Trade Representative, *supra* note 11.

Now, actually, more of what is permitted could be built because there will be less competition from the non-permitted projects. In that sense, is there really going to be an impact in terms of U.S. LNG exports? And what are other potential impacts that the pause would have?

Elizabeth Craddock: Maybe it's just being in D.C. for as long as I have been, but in election years, things happen. You could make the case on both sides of the political spectrum. I think that you'll have Republicans here in D.C. who will certainly say that it does matter from investment decisions. It's really hard for these multimillion dollar facilities to move forward without having regulatory certainty, and this sort of upends that. You're definitely seeing that with a particular project in Louisiana, Venture Global's Calcasieu Pass 2. I think its FERC approval may be coming soon, and having a pause on DOE could jeopardize the project.

On the opposite side, we clearly have a president who wants to play to his base. The progressives really want to see reduced fossil fuel production in this country. LNG exports is a way that natural gas production continues to ramp up here in the United States, and stopping it from moving forward certainly plays into the progressives' playbook. The pause can help get some support behind the current president as he moves into this election cycle.

Whether the pause has an impact, I think, depends on where you are, frankly. You can make the case on both sides, but these DOE export approvals do take time. From my understanding, there probably wasn't going to be another one approved before the election. If that's the case, then does it really have an impact? But as far as giving companies the regulatory certainty that they need to move forward, it certainly doesn't help that.

Moneen Nasmith: I disagree on the regulatory certainty. I think that stems from the litigation that we were talking about. We have to keep our eye on the ball as to why DOE paused its review of projects while it updated out-of-date and incomplete data and recognize that the projects subject to this temporary measure are ones that would not be in operation for many years to come. We're talking about another whole wave beyond what's already been approved. There may not even be a market for those projects at that point, let alone a guarantee they will go forward.

More importantly, we have seen so much litigation and it's only going to ramp up if DOE continues to rely on faulty data. So, to the extent DOE is sitting there with studies it says are stale and lack coverage of important issues, including, to your point, Anna, that there hasn't been a comprehensive look at what this industry means for our climate commitments, it makes no sense for DOE to be forced to make decisions before it has completed its revision process. These climate commitments, for example, are commitments to try to keep this planet from warming above 1.5 degrees Celsius. We've already seen the incredibly adverse effects of climate change in this country and beyond, and it makes total sense for DOE to factor that in before approving even more LNG exports.

What we are hoping is that DOE is taking a look at both the changed nature of the LNG export volumes already approved and what we know about climate change compared to when it did its last review in 2018 and 2019,[41] and come out with a science and data-based conclusion that more accurately reflects the true costs of this industry. To move forward while it admits that its own data isn't up to date with processing applications doesn't create regulatory certainty.

What has happened at FERC in recent years is a great example of how not to proceed. FERC claims that it doesn't know how to assess climate significance and is working on it, but in the meantime, it's still going to approve projects without that determination. That has opened the door to litigation after litigation. And FERC has lost some of those cases on these grounds, which creates huge amounts of uncertainty for the companies whose project authorizations get upended. It also creates a whole laundry list of problems for investors, construction schedules, and so on, especially if the project is partially built or in operation. In short, it's a mess.

So, for DOE to say that it's taking a temporary timeout to get its ducks in a row, and to go do a better analysis so that when it turns back to these projects, whatever it decides, it is more defensible in court, I think that is a very rational way to proceed, and it creates a lot more regulatory certainty than the alternative.

Tade Oyewunmi: Although this is a very dicey situation, note that the gas industry is not a new industry. Most operators understand the impacts that arise and how to resolve and address the issues. Likewise, DOE is familiar with the industry from a technical and regulatory standpoint, and the industry is familiar with what DOE requires from an operational standpoint.

It's good to take a pause, but only as long as there is a justifiable and clear goal as to what exactly the pause is about. The pause is to check whether there is new data or information that will influence investment decisions and so on, review the impact the projects will have, and develop solutions for addressing or mitigating the impacts, for instance by creating a platform for protecting and engaging the host communities while the projects are operational.

Generally, there are two kinds of impacts: domestic market impacts and international market impacts. The domestic impacts mostly arise due to the environmental and economic issues we've talked about. The major international impacts include energy security, geopolitical implications, and energy decarbonization goals of import-

41. NERA Economic Consulting, Macroeconomic Outcomes of Market Determined Levels of U.S. LNG Exports (2018), https://www.energy.gov/sites/prod/files/2018/06/f52/Macroeconomic%20LNG%20Export%20Study%202018.pdf; Selina Roman-White et al., National Energy Technology Laboratory, Life Cycle Greenhouse Gas Perspective on Exporting Liquefied Natural Gas From The United States: 2019 Update (2019) (DOE/NETL-2019/2041), https://www.energy.gov/sites/prod/files/2019/09/f66/2019%20NETL%20LCA-GHG%20Report.pdf.

ing markets. Although these are complex issues, they are not strange.

Looking at the way the contracts have evolved over the years, for example, a lot of long-term supply contracts would not be signed unless there was a creditworthy buyer or unless there was a demand for the gas. And even if the market changes—for example, a contract is signed for 25 years and at year seven, suddenly there's a lot more hydrogen in the system in that particular destination—there are clauses in the typical contracts that allow for "destination flexibility" and moving shipments to other markets if necessary.

So, operators or suppliers can go to where the demand is highest. There is an international gas market; this is not America alone. There are other countries and issues involved—it's Bangladesh, it's India, it's China, it's geopolitics. It's not just one issue. The policymakers will need to consider all of these factors carefully.

For example, despite its risks, nuclear energy is one of the most reliable sources of energy we have. But the Indian Point Nuclear Plant, which was one of New York's 10 largest electricity generators that produced over 270 terawatt hours of carbon-free electricity, was shut down recently.[42] Following the shutdown, three natural gas-fired power plants were introduced to help provide the same level of reliable service and energy supply needed by New York City. Therefore, in considering the broader policy dynamics while approving or pausing the development of gas projects, there are systemic issues that need to be identified from an energy policy perspective.

I was in Europe between 2013 and 2017. There was talk about more renewables and targets for 30% renewables by 2030. But the interplay between the Emissions Trading System, not setting an appropriate carbon price, and shutting down nuclear power plants, which are actually cleaner than gas and every other system, led to more pollution—the use of more coal. And then came the Russia effect.

There is nothing wrong in pausing to review the process when necessary, but the pause should not affect certainty and needed investments, thus energy security. Also, the environmental impact needs to be considered and dealt with appropriately. There are ways of dealing with this. There are good, useful experiences from countries like Norway, the United Kingdom, and Australia. The industry is not a new industry.

Anna Mikulska: The panelists are talking about data, well-designed studies, and transparency that could generate more public trust, and foster the ability to respond to public interest or environmental justice. That's what's important; otherwise, we have no knowledge about how and who gets impacted. We cannot design energy exports in a way that could be less problematic from the perspective of methane emissions, for example, that could emit less methane. There needs to be a global perspective.

There are two questions about the U.S. methane pledge and the Global Methane Pledge Ministerial of the 28th Conference of the Parties versus U.S. LNG exports. As Moneen was saying, LNG export terminals will not be here immediately. It takes about four years from approval to build an LNG terminal. During this time, a lot can change, within the United States and globally.

The one question I want to address is that, to my knowledge, almost no FERC or DOE LNG permitting applications have ever been denied. What would be a successful legal challenge around the public interest that could deny an LNG application from either agency?

Moneen Nasmith: Even if you want to concede that some of these projects should go forward—which I would not—they currently are all being approved with little to no evaluation of the impacts to environmental justice communities. If analysis of those impacts alone were done accurately, FERC or DOE would have ample grounds to deny project applications, or at the very least, insist on significant mitigation measures that might fundamentally change the financial viability of projects. To date, however, neither FERC nor DOE has come close to assessing this one fundamentally critical part of the LNG export problem.

The extent to which FERC especially has failed to adhere to its statutory obligations to evaluate how LNG terminals impact environmental justice communities is evident in successful legal challenges like *Vecinos*. But even where the D.C. Circuit sent the approval back to FERC, because it said the approval was not legally sound and had to be done again, FERC is refusing to meaningfully evaluate environmental justice harms. How that case turns out remains to be seen, and there will be more to come.

Elizabeth Craddock: I think that the 10 criteria are meant to give the agency wiggle room at the end of the day. So, until Congress acts to make this more permanent or gives more definition to what the public interest really is, I don't know if we're going to see any changes on that. I think it will be resolved in the courts frankly.

42. *See* EIA, *New York's Indian Point Nuclear Power Plant Closes After 59 Years of Operation* (Apr. 30, 2021), https://www.eia.gov/todayinenergy/detail.php?id=47776.