

Playing With Fire: Russia, Ukraine and the Geopolitics of Energy

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Greg Dalton: This is Climate One. I'm Greg Dalton. Russia's invasion of Ukraine has scrambled energy markets around the globe.

Amy Myers Jaffe: For those who were not on board with the speed and pace of change we needed from the climate emergency, many of those citizens are now understanding that this high dependence on Russian oil or oil from other countries that might be inimical to Western democracy, that this is a problem.

Greg Dalton: Here at home, high gas prices can present a political challenge to advancing renewable energy. We also have collective power to change the status quo.

Amy Myers Jaffe: You can make a donation to the Red Cross, but you could also get out of your car. And that would also contribute to helping Ukrainians.

Greg Dalton: Russia, Ukraine and the Geopolitics of Energy. Up next on Climate One.

Greg Dalton: This is Climate One, I'm Greg Dalton. The past several weeks have shaken the world order. It's been hard to process everything happening around us. The IPCC released its latest report the same day the US Supreme Court heard the most environmentally significant case in a decade, all while Russia's invasion of Ukraine is dominating headlines and policy agendas.

Ariana Brocious: Energy is deeply entwined with this war, whether we're talking about the cause or the global impacts of the conflict.

Greg Dalton: We know Russia's economy is heavily dependent on fossil fuels. Just last year, the EU was getting about 25% of its oil and nearly half of its natural gas from Russia. Since WWII, the dominant thinking has been that trade among nations promotes economic interdependence and reduces the chances of war. As we'll hear from energy expert Amy

Myers Jaffe later in the show, Russia's invasion of Ukraine is disproving that view.

Ariana Brocious: Europe is in a really tough position right now—how do they get away from Russian fossil fuels quickly, and what do they replace that with? Perhaps more US imports of liquified natural gas or renewables. European Commission President Ursula von der Leyen recently said, “The quicker we switch to renewables and hydrogen, combined with more energy efficiency, the quicker we will be truly independent and master our energy system.”

Greg Dalton: Since the invasion, Germany has accelerated some of its green energy goals. The question remains just how fast that transition can happen. In the short term, cutting ties to Russian fossil fuels may compel Europe to burn more coal.

Ariana Brocious: This news all comes in the wake of the latest IPCC report, which UN Secretary General Antonio Guterres put in these stark terms:

Antonio Guterres: I've seen many scientific reports in my time, but nothing like this. Today's IPCC report is an atlas of human suffering and a damning indictment of failed climate leadership. With fact upon fact, this report reveals our people and the planet are getting clobbered by climate change. Nearly half of humanity is living in the danger zone now.

Greg Dalton: The report says nations aren't doing nearly enough to protect people from the climate disruption we've already seen—like droughts, fires, rising sea levels—let alone from the greater hazards we expect as warming continues. If we don't decarbonize more quickly, we are likely to see changes faster than we can adapt to them.

Ariana Brocious: That report is really scary, and the invasion of Ukraine is absolutely horrifying in so many ways. We don't know what the climate impacts of this conflict will be. It could cause changes to the global energy system that last decades.

Greg Dalton: High oil prices bring us “drill, baby, drill.” High oil prices make tar sands economically viable. On the other hand, high oil prices also make EVs and switching buildings from gas to electricity relatively more economical.

Ariana Brocious: In the U.S. we've seen pressure on President Biden to ramp up domestic drilling, even though that would not solve our short-term high gas prices set by global markets. President Biden did release oil from the strategic reserve to help curb those prices. But he rejects the notion that the U.S. should relax environmental protections to boost drilling. He says we should instead accelerate the transition to more renewable energy sources. High gasoline prices will almost certainly cause additional pain for Democrats in the midterms, depending on how much blame can be put on Russia.

Greg Dalton: The international community came together relatively quickly to isolate Russia. That level of consensus is a stark contrast to lack of action on climate. I think back to an interview I did with reporter and activist George Marshall in 2014 when he said the “real challenge for climate change is that as a narrative, it does not have an enemy with the intention to cause harm.”

Ariana Brocious: Right, the Ukrainian story has clear heroes and villains - but it's not so cut and dried when it comes to climate, which has no clear enemy. We'll take a deep dive into

Russia, Ukraine, and the geopolitics of energy just a bit later in this show, but first, let's explore that Supreme Court case we mentioned at the start...

Greg Dalton: This case, *West Virginia versus EPA*, deals with the central ability of the US federal government to respond to carbon pollution. As we mentioned, oral arguments were heard the same day the IPCC issued its latest report. Erwin Chemerinsky is Dean of Berkeley Law.

Erwin Chemerinsky: The timing is coincidental. The Supreme Court scheduled oral arguments in *West Virginia versus EPA* months ago, but the juxtaposition is important. The report highlights the huge threat to the planet from climate change. And this is such an important Supreme Court case in terms of the powers of the Environmental Protection Agency to deal with climate change.

Greg Dalton: And in 2007, the Supreme Court had a five-four decision in *Massachusetts versus EPA* that gave the EPA authority to regulate greenhouse gas emissions. 2016, another five-four decision, the supreme court put Obama's Clean Power Plan on hold. Trump repealed the Clean Power Plan before it went into effect, the Biden plan hasn't been introduced. So what's being challenged here in this case, an actual regulation or a hypothetical future regulation?

Erwin Chemerinsky: That's a key issue dispute between the two sides. The Trump administration and its Affordable Clean Energy Plan rescinded the Obama administration plan and created its own much more relaxed standards. The United States Court of Appeals for the District of Columbia Circuit said that the Trump EPA didn't follow the law, and sent the matter back to the EPA. It's that ruling of the DC circuit that the Supreme Court is now reviewing. And *West Virginia* and the coal companies say that we need the Supreme Court to clarify the authority of the EPA, but the Biden administration said to the Supreme Court, there's no case or controversy. At this time there are no regulations with regard to carbon dioxide emissions from power plants. And the Biden administration says wait until we promulgate a regulation and then *West Virginia* and the coal companies can challenge it. No one is being injured by anything now. So no one has standing to sue.

Greg Dalton: It was interesting that Justice Gorsuch chimed in on that point saying the Biden administration "presented a strong argument that *West Virginia* has not been harmed by the lower court decision." So what did you make of Justice Gorsuch weighing in on that or posing that question or noting that?

Erwin Chemerinsky: I think Justice Gorsuch recognizing the lack of standing could be quite important. The court is divided six to three with conservative majority and three liberal justices. Obviously, if the liberal justices want to dismiss the case, they're going to need to pick up two conservatives. Justice Gorsuch at least acknowledged the problems with regard to standing. In order for someone to sue in federal court, they have to be injured, and it has to be an injury that could be solved, redressed by a favorable court decision. In this instance with the United States, says the supreme court, no one's being injured because there's no regulations. So there's nothing that a favorable federal court ruling could solve.

Greg Dalton: Some people think it's about undercutting or fencing in future EPA authority, their power in the future.

Erwin Chemerinsky: There is no doubt that West Virginia and the coal companies want to limit the authority of the EPA to adopt regulations with regard to coal power plants. And there is no doubt, if the Supreme Court rules in favor of West Virginia and the coal companies, it is going to limit the ability of the Biden EPA to adopt regulations as to coal fired power plants.

Greg Dalton: The Trump administration contended that EPA authority stops at the fence line of power plants and they can't apply industry wide regulations. What does that mean for an issue that is inherently global, climate change? You know, once the emissions, it doesn't matter where they emit, they have the same impact.

Erwin Chemerinsky: The Trump administration, and in this case, West Virginia, the coal companies say that all the EPA can do is regulate pollution coming from a single stationary source. And as you rightly say, their position is this means that the government can regulate only what goes on in the fence line of the power plant. It can't adopt overall regulations to decrease carbon dioxide emissions. The federal court of appeals disagreed, in this case, the federal court of appeals took the position of the Obama administration that the statute gives the EPA the authority necessary to deal with this problem.

Greg Dalton: So, what are the possible outcomes here? The courts can, sometimes they try to find a middle ground, particularly Justice Roberts tries to find some middle ground.

Erwin Chemerinsky: There's a huge range of possible outcomes. One is the court will dismiss the case as certiorari improvidently granted, realizing there's no regulation being challenged. So there's no need for a decision. Another possible outcome is the court could write an opinion saying that there's no standing at this point because West Virginia, the coal companies aren't injured. Or the Supreme Court could find there is standing to review the DC circuit decision. Chief Justice Roberts seemed to indicate he thinks so at the oral argument, and then the court would construe the EPA's authority. And if it does that, the question is, will they do so narrowly, as West Virginia and the coal companies want, saying that the EPA can regulate only within the fence line of the power plant, or would it take the position of the DC circuit and the Obama administration that the EPA has much broader authority to have the best reduction in emissions. The court could have even go further than that. There's briefs that were filed in this case, West Virginia argues in this case that the Supreme Court should find that the broad delegation of power to the environmental protection agency is unconstitutional. If the Supreme Court goes there, it could put in jeopardy countless federal statutes in the environmental and other areas. There's also a lot of discussion about the so-called major questions doctrine. What is a major question? What does it mean if it's a major question? When is it that only Congress can rule on major questions? So all of these are before the court and depending on what the court decides, it could be a relatively unimportant case or one of the most significant in our lifetime.

Greg Dalton: And that significance being that if it really curtails the EPA's ability to address greenhouse gasses.

Erwin Chemerinsky: If the Supreme Court were to say that Congress can't give agencies broad authority to deal with problems, it would put the EPA's authority under the clean air act and other statutes in jeopardy, but it would put in jeopardy the authority of every federal agency. This isn't fanciful. There very well may now be a majority of justices on the court who want to say that Congress can't give agencies broad authority.

Greg Dalton: Right. One of the big battle lines between the conservative about the power of government. We should note that you issued an amicus brief in this case. And based on what you heard in the hearings, care to make a prediction on which way it will go?

Erwin Chemerinsky: I long ago learned that making predictions of Supreme Court arguments is like reading tea leaves and I've gotten it wrong in many instances, including in cases that I argued. But you're right. I did write a brief, it was on behalf of Senator Sheldon Whitehouse, and also senators Richard Blumenthal, Bernie Sanders, and Elizabeth Warren. And it made exactly the points we're talking about here. Why there's no case properly before the court and why the court needs to give the EPA the authority to deal with the urgent problem of climate change.

Greg Dalton: Well, other things happening at the court, of course, historic moment with the US Supreme Court. What is known about Judge Kanta Brown Jackson's views on climate, energy and the environment?

Erwin Chemerinsky: Well, she was a judge on the federal district court in DC. So that gives some indication, but the reality is you can't read too much into that because the district court judge she's following DC circuit and Supreme Court precedent. So I don't think we know very much. And it's worth mentioning. She was just on the DC circuit for a very short time.

Greg Dalton: If she is confirmed, one of the first cases she will hear is Sackett versus the EPA, a case that challenges again, EPA authority, this time over wetlands, which are important carbon sinks. I know that that's kind of a revisit of a 2006 case in which Justice Scalia wrote the lead opinion. What's at stake in that case? And what might her impact on the court be?

Erwin Chemerinsky: This is about the ability to use the water pollution control act to deal with the huge problems that exist in interstate waters. And the biosphere is inherently interconnected. There's no such thing as an interstate water that doesn't have consequences for all waters in the United States and even the globe. And the question is how narrowly is the Supreme court going to interpret the EPA has authority to deal with wetlands. In terms of her impact on the court, keep in mind, she's replacing a moderate liberal. That there's still six conservative justices, whether it's Breyer or Jackson, that's on the court along with Sotomayor and Kagan. So obviously any justice can make a difference in any particular case, but we can't ignore there are six conservative justices, even when she comes onto the bench.

Greg Dalton: Erwin Chemerinsky is Dean of Berkeley Law. Dean, thanks for coming on Climate One today.

Erwin Chemerinsky: Thank you for having me, such a pleasure.

Greg Dalton: You're listening to Climate One. If you missed a previous episode, or want to hear more of Climate One's empowering conversations, subscribe to our podcast wherever you get your pods. Coming up, an energy expert digs in to the politics of high gas prices:

Amy Myers Jaffe: We have to be focused on our climate goals. And we have to be putting in place a transition, but we also do need to do things like use the strategic petroleum reserve. And we might actually need to help oil companies drill for a period of time because we cannot have it that Americans can't use their vehicles.

Greg Dalton: That's up next, when Climate One continues.

Greg Dalton: This is Climate One. I'm Greg Dalton. Amy Myers Jaffe is managing director of the Climate Policy Lab at Tufts University Fletcher School of Law and Diplomacy. I asked her to walk us through the recent history of Russia's use of energy as a geopolitical tool, starting from the end of the Soviet Union, when Boris Yeltsin was elected First President of the Russian Federation and appointed Vladimir Putin as prime minister.

Amy Myers Jaffe: Well, you know, it's been a journey, Greg, and it started out somewhat positively. After September 11, Vladimir Putin approached the United States and said that Russia could be the secure sea of energy for the west. He came to the United States. We saw our American oil companies go and help Russia revive its industry, which had just crumbled from mismanagement and lack of capital. And it looked like we were all on track to have Russia sort of "be part of Europe." But then over time things deteriorated. We saw Russia use energy as a geopolitical weapon. First in 2006 against the Ukraine then in 2009, in a way that affected heating in Germany for two weeks. And we've been sort of on this trajectory of concern for the level of Russian supply in Europe since then.

Greg Dalton: Right. And going into this winter, European energy demand was rising faster than supply coming out of the economic slump. Russian companies cut back methane gas supplies to Europe around 25% as prices surged, not in their own financial interests, leaving profits on the table. How did Russia weaponize its energy exports in advance of the invasion of Ukraine?

Amy Myers Jaffe: Well, you know, we had, we had some momentum that looked less frightening. I mean, as we were leading up to the Glasgow Summit, You saw OPEC plus, which is sort of OPEC plus Russia and some other countries, uh, actually say they were not going to put more oil on the market, even though markets were tightening. And a lot of us interpreted that as a belief that high energy prices, especially in Europe, would discourage global leaders from tackling climate change in a strong way. But luckily, when we got to Glasgow, the United States, the EU, China, you know, even India, to some extent, really, you know, sort of stepped up to the plate and talked about raising ambition. And, we kind of had not as much momentum as we needed in Glasgow, but certainly we did not see the high energy prices dissuade countries from action. And in fact, good diplomacy on the part of the United States and other countries led to some of the producers in the middle east, like the United Arab Emirates and Saudi Arabia committing to net zero. So we looked like we were over that hump. And then we started hearing this saber rattling about Ukraine. And to remind your listeners because at the time it first happened, it didn't raise the alarm bells that of course then later came to be, but last July, so July, 2021, Vladimir Putin wrote a treatise. And in his treatise, he explained about his revisionist views of the history of the Russian people. He mentioned that Ukraine was part of Russia and he even blamed Poland for the start of World War II. So we were already kind of like lurching on a pathway of trying to understand what was going through the Kremlin's mind. Even as early as last summer.

Greg Dalton: And it sounds like yeah Russia was on a different path from other countries, oil suppliers who kind of came together in Glasgow, that very important climate summit. You know Germany was seduced by cheap Russian gas and about a third of its crude oil and half of its coal comes from Russia So as the strongest economy in Europe how much leverage does that give Putin over Germany?

Amy Myers Jaffe: Well it gave him a lot of leverage. You know the thesis all over the years on Germany was well, we're going to have double-edged sword. That means that Russia can't act extreme because they need the revenue from Germany and Germany, we're showing our willingness to work cooperatively because we're willing to buy a lot of Russian energy and support the economy of Russia. And of course that entire philosophy has now been entirely discredited in German politics but the German government sadly committed a lot of on goals. They did a lot of things wrong. Not only this high dependence on Russia which of course the United States has been bugging them about since Ronald Reagan. Donald Trump went and said we'd like to help you finance an LNG receiving terminal, liquified natural gas, so you can receive natural gas from the United States back when he was first president. They had some fanfare and then didn't do it. They have excellent resources of offshore wind but there was political opposition to bringing a high transmission wire from Northern Germany down to Southern Germany to meet that demand. Germany has its own domestic natural gas resources, they decided that they would not drill their own natural gas. They would prefer to have the pollution be in other countries. And then you got the decision to close down nuclear which one can understand but you would wonder like does it make sense to close nuclear ahead of the winter instead of after the winter when you're only talking about a few months. And then finally the worst mistake I think that could have been totally predictable is that Germany allowed Gazprom, the Russian state natural gas exporter that does supply its supply, to buy its inventory storage, the physical storage tanks that there are in Germany. Some of them now are owned by Gazprom and in the lead up to the winter this year, guess what? Gazprom left those tanks empty.

Greg Dalton: Wow. So lots there to unpack you know you talk about liquid national gas exports to Europe. A lot of people in the U.S. would like to say, hey well we can replace Russian gas with U.S. gas, happy to export that to Europe. Will that happen? Could the U.S. supply enough methane gas to replace Russian gas in Europe and wean them off this Russia dependence?

Amy Myers Jaffe: So we increased those exports to Europe over this past October November and into this winter; it's helped a lot. Things would be even worse, believe it or not. But to export the gas requires special facilities that take the gas and turn it into cryogenically into a liquid. And so we have a limit on how much we can do that. So that raises a question which is a really very challenging question. Do we add more facilities, do companies invest, because it costs billions of dollars, or will that create sort of path dependent infrastructure that will then become stranded as Europe moves more to renewables and away from natural gas over time? And that leaves us sort of in a bind between the immediate emergency and the how do we plan out, not what we do over the next couple of months, but what do we do in the one, two, and three-year timeframe as opposed to the 10 year timeframe, where Germany has already announced it will shoot for a hundred percent renewables.

Greg Dalton: Right, and there's be a lot of certainly environmental and local opposition to those big natural gas export terminals. Those things don't come on quickly. You said that we're entering an era of abundant methane gas because liquified natural gas can be put on ships, yet there's a lot of research coming out on fugitive methane which is a huge problem. Methane is 80 times more damaging to the atmosphere than carbon dioxide in the near term. The carbon math is that we need to reduce methane, not increase it. So where does that leave us?

Amy Myers Jaffe: Well it does leave us in a problem. Now there are some bridges. The state of California has been sort of proactive in looking at renewable natural gas. So I'm making the

methane from bio materials and waste. Problem with that of course is once I put it in a facility it's methane and I still have to be leakage proof. But I can add CCS to it which makes it a negative emissions which is something we need to go to for net zero. So you're seeing more conversation in the United States and Europe about going to this more renewable form of natural gas. And you do have more producers here in the United States, Pennsylvania for example, making sure that their new wells are methane leakage free. And you're saying more activity and proactive maintenance in the pipeline industry in the United States to reduce emissions. And then you see some states being very proactive like Colorado which has tight regulations that doesn't allow for the leakage of methane from production facilities.

Greg Dalton: And CCS being the carbon capture and sequestration. So you mentioned that Germany's announced going to a hundred percent renewable. Looking at Europe broadly, what alternatives do they have? Back to nuclear, pump up renewables, accelerate the European green deal. How is this changing the energy politics and dynamics in Europe?

Amy Myers Jaffe: So Europe had a great plan as it was. You know we all said not fast enough but you know as your listeners probably understand we have this path dependency of our existing infrastructure. So it was hard to go from today's infrastructure to the new infrastructure you know in a year. It takes some time to do the building and retiring. But different countries in Europe have different plans. Italy is moving forward to be a green hydrogen hub taking solar energy also from Southern Europe but possibly even from north Africa and becoming a trading area for hydrogen which is a made from renewables can be sort of a storage. So in other words it's hard to store the sun or the wind, it's windy usually at night, it's sunny during the day, but hydrogen is sort of a bridge fuel where we can produce hydrogen from the renewables when they're available and then use the hydrogen later. So Italy is sort of pioneering that in Northwest Europe, tremendous amount of offshore wind that's being produced and and new projects being fast-forwarded and some of those projects in Denmark and other places again trying to connect to hydrogen. And then we have this other sort of lesser known opportunity. We all know about batteries as a storage device for electricity here in California, but there's a mechanism called virtual power plant where we add batteries to extensive rooftop solar in everybody's home. So instead of having some industrial batteries out in a wind farm like they have in Australia or having batteries with solar like we do around Los Angeles, you would have every person or business have sort of a small battery, you know like a washing machine size battery in their garage or in their building. And then those batteries would aggregate together. So you would give your utility the opportunity to pull some of that storage solar energy into the grid during times of peak demand or an unusual burst of need like a heat wave. And you can aggregate that across many different buildings and households. It's a pretty powerful tool and they've used it in Western Australia successfully to reduce brownouts. And it's a sort of untapped opportunity and something that can be installed relatively quickly. Putting in a new LNG receiving terminal could take two years, putting in a new nuclear plant, again, extensive time, many many years. But putting in one of these virtual power plant systems, we're talking about weeks or months depending on the scale at which you were going to do it. So that leads us to this other question as we look at Russia which is, will this Russia disruption make metals hard to come by? And we would need those metals to do batteries and solar panels. There's there's sort of this broader issue about supply chains that need to be resolved but I think it's easier to resolve probably metals than it is to come up with new sources of oil.

Greg Dalton: Right. So we have a range of options there from years to weeks or months yet Russian tanks are moving in now, hospitals are being bombed, millions of people on the move. What are the fastest actions that could be taken that have not been taken? We see the

U.S. banning Russian oil imports. What other energy cards are there to play here that are on the timescale of the tanks moving toward Kiev?

Amy Myers Jaffe: Well really the the main tool we have and the president has already used it some but he would be able to work with our allies to continue that path is to use strategic national stock. So we have our strategic petroleum reserve. The Europeans have strategic reserves. Japan, South Korea have strategic reserves and actually China has been cooperating and also has been releasing oil from its strategic reserves. India has some strategic reserves. So that's our first line defense against a major disruption that would would damage the global economy. And I need to make this point because I think for our listeners, people feel very conflicted. But we have to remember that social justice is very important and many of us could go with using less fuel. We could telecommute instead of driving to work, we can limit our shopping and not need our car as much. We can cancel or postpone a holiday. But if you're a person in the United States who need your car to get to work otherwise you won't be able to earn a living, and the price of gasoline is California I mean we're getting towards \$7 a gallon, the president needs to address that and that's an important issue, an immediate issue. And so we have to be focused on our climate goals and we have to be putting in place a transition. But we also do need to do things like use the strategic petroleum reserve. And we might actually need to help oil companies drill for a period of time because we cannot have it that Americans can't use their vehicles.

Greg Dalton: This is Climate One. Coming up, the difficulties of transitioning to renewables quickly:

Amy Myers Jaffe: We understand the importance of supply chains to our economic well being, but also our physical well being. And that just takes a certain amount of oil-based fuel. That's just the reality of how we live right now.

Greg Dalton: That's up next, when Climate One continues.

Greg Dalton: This is Climate One. I'm Greg Dalton. Today we're talking about energy geopolitics in light of Russia's invasion of Ukraine with Amy Myers Jaffe, managing director of the Climate Policy Lab at Tufts University. BP and Shell have pulled out of joint ventures with Russia giants Gazprom and Rosneft. I asked Jaffe how branded oil companies are being affected by the sudden turmoil.

Amy Myers Jaffe: Gasoline is such a fungible retail product that it's not really about the brand. I mean BP walked away from billions of dollars in assets, which for which they're not likely to ever get compensation. I really do think that their chairman, who has already indicated he's trying to go on the path of net zero, was moved by its position in Europe. And I think for the American companies they're going to come around to the fact that this war is not a limited regional war. This war is about democracy in Europe and it's going to be important for all corporations to support the efforts of Europe and the United States going forward. I think the oil companies are understanding that and they've acted surprisingly fast for them when it comes to removing themselves from Russia. And Exxon's decision to leave is already leading to oil wells in the Russian far east being shut down.

Greg Dalton: And what does that mean? Does that mean that okay, they can't get out of the ground, can the Russian oil be sold to other buyers in Asia and Africa? This is a very liquid global market. If the U.S. companies and European companies are not there producing, how

does that affect Russia? Does that mean they can just sell it somewhere else? Get it out themselves?

Amy Myers Jaffe: Well there's some element of that, I mean we're seeing barrels get reshifted, India bought a bunch of cargoes a few weeks ago in a tender. But there's some limits in the sense that you know every oil in the world has its own fingerprint and the Russian oil has some impurities that not every refinery can manage. So China is a really really big buyer. And the question is going to be, will China step up to the plate and take more Russian oil or not? And I think it's not a given because China themselves like to have a very diversified supply. They don't want to have to worry about supply security just like we here in the United States and Europe. So it's really unclear how it's going to play out. Theoretically, the oil market's very fungible and you know I tell people it's like a swimming pool. You can take a barrel out of the deep end and you pour it in the shallow end and the water level in the whole pool stays the same. But we're already seeing this sort of cancel culture that applies to Russian non-contracted oil. So a lot of the oil that Russia sells they would just put a cargo out and people would bid to buy it. And what we're seeing is we're already down 1.6 million barrels a day of lost Russian production because those cargoes can't be sold. And I think that volume is probably going to go up over time. So as each company or country makes its own decisions it could be a bigger and bigger disruption and then it becomes what do you do? Are we going to release more strategic stocks? Would we give incentives to US companies to drill more? I mean the Biden administration has been flying around the world with its diplomats trying to get different countries to provide more oil and that's not going well. You know there's the controversial question about whether or not we quickly finalized the Iran nuclear deal and put it back in place so that we can get that extra million barrels a day from Iran. So it's a very challenging time for the White House to balance its long-term policy with the sort of exigencies of war.

Greg Dalton: Right. New York Times reporter Lisa Friedman was in the CERA week in Houston recently, the annual gathering of energy executives. And she said about U.S. oil companies, the vibe is you know "you thought you were done with us but as recent events have shown, we're still quite important." The title of the piece was "Suddenly oil companies are upbeat again." So how does this play into the oil companies in the United States? On the one hand the Biden administration's trying to decarbonize, move away from oil production. And yet now they're in this situation where the energy and national security and political agendas have merged in the U.S. and Europe and you've said maybe we need them to produce more in the U.S.?

Amy Myers Jaffe: Well we do, but there's a flip side to that. And the flip side is now that we understand, I mean many of us understood the climate emergency but for those who were not on board with the speed and pace of change we needed from the climate emergency, many of those citizens are now understanding that this high dependence on Russian oil or oil from other countries that might be inimical to Western democracy, that this is a problem. And of course the big solution to that problem is the move off of fossil fuels and to other sources of energy that are domestically produced like solar and wind. So we know where we want to go. It's just a question of the speed at which we can do it. And like I said, the president has to consider the social justice issues, not only from the climate perspective, but from today's sort of COVID experience where we now understand what it means to be "an essential worker." We understand the importance of supply chains to our economic well being, but also our physical well being. And that just takes a certain amount of oil-based fuel. That's just the reality of how we live right now. And, you know, we have to make this distinction, which is very uncomfortable between what our best trajectory is, which is the switch to domestically

clean energy as fast as possible and get electric cars on the road as fast as possible. And the fact that we have 350 million liquid fuel fossil based cars on the road today.

Greg Dalton: There is a notion that this transition to renewable energy will get away from the power of petro states and avert wars for oil and reduce the power, reshift the power. Yet there is a supply chain for renewables. There's a lot of lithium in Ukraine. There are certain metals that are needed, cobalt and others that are needed for electrification to move away from liquid transportation fuels to move from oil to electricity. So how is that supply chain and will it be as harmonious as some of the people claim it to be. Could we trade one vulnerability for another?

Amy Myers Jaffe: Well, let me just say the following thing. Oil is what I call a flow resource. The second you use it, you need more. So if I buy an electric car and it has a lithium battery, you know, I don't need more lithium until I'm not using that car anymore, which in the United States could be 10 years, could be 14 years. So the trajectory for the leverage is different. I mean, for gearing up, of course we need a lot of material, but once I have it in place, once I put in battery storage in Los Angeles, it's not like I have to. I mean, I bet those batteries will be in place for several years until I need to upgrade them and replace them. Once you put gasoline in your tank, you can't recycle that gasoline. So from my perspective, it's a totally different issue. And then also we have chemists and others at work and in companies and our national labs, Tesla, you know, coming up with a cobalt-less battery, or coming up with a new material that's not lithium for batteries. So I mean, we're going to get there. And if some producer of a particular metal thinks they're going to gain political or geopolitical leverage over a supply chain, or they're going to cause a war over this metal, I think that's not going to stand. I mean, it'll slow us down a little bit on the transition, but there are going to be other technological solutions and other kinds of metals that can be substituted out. So I don't think it's a long-term problem. I think that in the end, renewable energy will be easier to promote and move us away from geopolitical conflict.

Greg Dalton: U.S. oil production declined from 1990 to 2010 and has more than doubled in the last decade. Is the country in a stronger and more independent position now than it would have been a decade ago. Does this prove that energy independence is a valid national strategy?

Amy Myers Jaffe: It does and it doesn't feel like that. I know it doesn't feel like that, but the way you have to think about it is multiple ways. Number one, when oil prices go up, maybe in California, it's not a popular statement, but at least it's people in Pennsylvania and New Mexico and Texas who are putting that revenue into the U.S. economy and creating US jobs and wealth and not people in countries far away. So we're not having a terrible problem with our trade account balances because we're a major exporter of oil. We're a major exporter of natural gas. And so our economy is much more shielded from the effects of price shocks than it was back in 1990. This is an important change. And it's part of the reason why even with inflation, you don't see people on television night after night talking about the recession that's coming, because we're in a better situation than Europe in the sense that a lot of the energy we use is made here in the United States. And we have revenue from the refined products and the crude oil and the natural gas that we export from this country. So that's number one. Number two: Because of the important policies like for climate, for the state of California and other states around the United States, we have many states that have a hundred percent renewable targets. That means that our economy is less oil intensive. And what do I mean by oil intensive? That's sort of an economist term. So two minute economics lesson here. How much oil do we use to generate a unit of gross domestic product? Right. So

it takes 92% less oil to make a unit of GDP than it did in 1972. This is a good thing. It's a good thing for our economy needing less oil to operate. And it's a good thing for the climate. And it's a trajectory we're moving forward with to continue to lower our oil intensity, this an important thing to think about. And one of the big achievements is that we no longer use oil to generate electricity in the United States. So that's really helpful. And as we move to using less natural gas to generate electricity in the United States, all the better. So we really are in a better situation than 1990 in that regard as, as an economic impact, but the difference is in 1990, there was a glut of oil on the market. And so when we lost 5 million barrels a day of Iraqi and Kuwaiti crude, because of the war, we could make that up easily. We didn't even have to release, we did a little bit, but we didn't really, really need the strategic petroleum reserve because, Saudi Arabia had a lot of oil to sell and United Arab Emirates had a lot of oil to sell and the Nigerians, they were just countries that had more oil to sell and they could just replace those barrels. But today we're very maxed out. And there's very little oil that's sort of sitting around the new oil field, ready to go. The Canadians kindly announced that they think there's 400,000 barrels a day of crude oil that they could add to the U.S., we don't really need it, but we do in the following way: if the Canadians send more oil to the United States and they say they have pipeline and rail capacity to do that, then that 400,000 barrels a day could be exported by the United States back to Europe, right? Either in the form of refined products cause we refine more or we could literally shift some crude oil out export terminals down in Texas and Louisiana. So every barrel counts today. It's going to be very hard to replace the Russian oil and gas. A lot of diplomacy going on about how to do that. And, you know, it's just going to remain a challenge and Americans are going to have to consider high energy prices and the option of conservation as their contribution to what Ukraine is doing to fight for its right to be a democratic country.

Greg Dalton: And there's quite a debate often about whether high gas prices are good or bad for that transition, right? High gas prices means that, you know, the electric cars are a lot more economical. As Bill McKibben tweeted recently, the sun appears to be providing energy at the same price as last week. So EVs are now more price competitive compared to that \$7 gas. On the other hand, when gas prices are high, voters are cranky. Midterms are coming and politicians are very wary and want to get that price down and it makes them very, perhaps more reluctant to make changes in how we run our economy. So how does the high gas play out?

Amy Myers Jaffe: So, listen, I think we're in a totally different situation. What you're describing, Greg, has been sort of the debate over the last 20 years, but I think the way we need to think about this is totally different. We're in a war. We can feel like that war is far away and doesn't involve us, but because we're participating through financial sanctions in supporting our allies in Europe, that means that we are involved in the transaction of trying to stop the further military activities of Russia. And that involvement means we need to reduce how much oil is used in the world. And we need to come up with replacement supplies for the oil we cannot reduce in the short term and, and those things are not inconsistent. We should move forward and accelerate anything we can do to get electric cars on the road. If that means the Congress needs to pass additional legislation beyond the infrastructure bill, they should be doing that. The state of California, other states could take state action.

Greg Dalton: And certainly, certainly during World War II, people rallied around the rationing of gas. People bonded, felt patriotic, that common sense of purpose. And I think that you're right, were we're horrified by what we're seeing, these bombings and Ukraine. I'm not sure it's, it's felt come yet to that, that level of it -

Amy Myers Jaffe: Yeah it hasn't sunk in yet that you can make a donation to the Red Cross, but you could also get out of your car. And that would also contribute to helping Ukrainians and the whole process. I mean, why are you waiting for BP to take action for you when you can take action yourself by thinking about your own movements and your own use of oil, when indeed you should be doing that anyway because of climate change. I mean, when you think about the climate emergency and you think about wanting to support democracy in Europe, the action is the same. You need to use less fuel. You need to not use oil when you can. You need to think about ways to reduce your carbon footprint, which are also ways that are going to reduce the amount of money going to Russia. All of those things are the same. We're waiting for someone to do it outside, or we could do it ourselves. Listen, Vladimir Putin is counting on the fact that people will refuse to get out of their cars and people will refuse to put their thermostat down one degree. He is counting on that for the money to fund his war machine. And if we can't take that on board, then he's going to be right and that's going to be a tragedy and it's a tragedy for the climate.

Greg Dalton: On this Climate One... We've been talking about the geopolitics of Russia's invasion of Ukraine with Amy Myers Jaffe, managing director of the Climate Policy Lab at Tufts University. Climate One's empowering conversations connect all aspects of the climate emergency. To hear more, subscribe to our podcast on Apple or wherever you get your pods. Talking about climate can be hard-- but it's critical to address the climate emergency. Please help us get people talking more about climate by giving us a rating or review. It really does help advance the climate conversation. Brad Marshland is our senior producer; our producers and audio editors are Ariana Brocius and Austin Colón. Our audio engineer is Arnav Gupta. Our team also includes Steve Fox and Tyler Reed. Our theme music was composed by George Young (and arranged by Matt Willcox). Gloria Duffy is CEO of The Commonwealth Club of California, the nonprofit and nonpartisan forum where our program originates. I'm Greg Dalton.