English Summary drafted by the Center for Strategic and International Studies (CSIS) Economics Program

Disrupted Global Order: Implications for U.S.-Japan Cooperation

Dr. John Hamre, CSIS President and CEO, and Mr. Masakazu Toyoda, Japan Economic Foundation (JEF) Chairman and CEO each provided opening remarks for the forum. Dr. Hamre noted that this past year was the most tumultuous one in global economics. He stated that we are still living through the aftershocks of Covid-19 and are seeing a profound reconfiguration of supply chains. Dr. Hamre said this was a timely discussion, especially on the topics discussing the impact of the Ukraine crisis on policy, strategy, and global economics and having the United States and Japan work together to identify solutions.

Mr. Toyoda gave a brief background on the JEF, saying it was established more than forty years ago as a way to enhance the communication between Japan, Europe, Asia, and the United States. Toyoda said that the conference was a chance to learn and discuss how the United States and Japan can navigate and work together with the challenges ahead. The biggest challenge right now in the world is U.S.-China decoupling. Further risks to supply chains and other areas may lead to climate change challenges.

Panel 1: Geopolitical Implications and Economic Responses to the Ukraine Crisis

The first panel was moderated by Ms. Erin Murphy (Senior Fellow and Deputy Director, CSIS) and included Mr. Gerard DiPippo (Senior Fellow, CSIS), Mr. Bonji Ohara (Senior Fellow, The Sasakawa Peace Foundation) and Dr. Kori Schake (Director of Foreign and Defense Policy Studies, American Enterprise Institute) as panelists.

Ms. Murphy welcomed the audience and mentioned that this session was a timely topic—the geopolitical implications and economic responses to the Ukraine crisis. This crisis is nearly a year old, and the panelists were to discuss how allies (including the United States and Japan) could combat growing authoritarianism, including in the Indo-Pacific. This was also an opportunity to draw lessons from the Ukraine-Russia case and apply them to the Indo-Pacific, especially with strategic competition from China, and Xi Jinping and Vladimir Putin's "Friendship Without Limits." The panelists discussed what China might learn from the Ukraine crisis.

Mr. DiPippo started his remarks talking about the sanctions and economic sphere. This is an unprecedented degree and scale of sanctions, as well as multilateral coordination in this crisis. The natural questions are: Are they working? Are they effective? By what metrics? These sanctions have three goals—deterrence of Russian invasion (which failed), economic destabilization of Russia (precipitating a financial crisis and somehow forcing oligarchs to push against Putin), and degradation of the Russian economy. There were four buckets of sanctions imposed on Russia: (1) those on the Russian central bank, (2) cutting off Russia from The

Society for Worldwide Interbank Financial Telecommunications (SWIFT), (3) export controls on industrial imports and inputs, and (4) G7 price caps on Russian oil.

The initial financial shock in Russia has since stabilized. Russia is still earning an enormous amount of money from its exports. Russia's current account surplus has more than doubled since the crisis—it is currently running a $226 billion current account surplus, a big part of that a result of the decline of imports to Russia. In the longer term, the idea behind the sanctions imposition is to slowly bleed the Russian economy—export controls are particularly important for that. The brain drain out of Russia is also contributing to this effect. The macro impact overall, however, is less than originally forecasted (initial estimates were a ten percent contraction of GDP, but in reality, it has been closer to four percent). It is difficult to model shocks and estimate an economy's ability to respond to them. Russia appears to be at a roughly two percent GDP deficit in 2022. Russia's "Fortress Russia" strategy to build up reserves, maintain low debt levels, and decrease reliance on foreign energy prepared the economy well for this crisis, though military production has suffered in the process. 2023 will likely be worse for Russia, given falling energy revenues and the continued effect of export controls. What is the theory of victory for sanctions? It is to put fiscal pressure on Russia and degrade weapons capability.

On a China-Russia analogy, Russia is the most major economy the United States has sanctioned since World War II (WWII), but dealing with China would be far bigger. Before the war, China's economy was ten times the size of Russia's; China's banks had thirty times the amount of assets. Russia was eight percent of energy exports. China accounts for twenty percent manufacturing in the world. The Chinese government is aware of the risks, like foreign technology and commodities dependencies.

Mr. Bonji Ohara presented next and noted that the invasion of Ukraine has created effects both west and east of Russia, as close as Hokkaido in Japan. The security issues in this situation are not strictly traditional—it is a situation involving hybrid warfare, which includes the use of economic tools such as sanctions and blockade operations. The Ukraine crisis has changed Japan's mindset regarding security issues. All domains, including economic security, must be included in the concept of security. China's main purpose in this operation is divide the United States and its allies.

Dr. Kori Schake presented next and provided an outline on the lessons from the Ukraine war for Japan and the United States, as well as the lessons that China is learning.

Lessons for the United States and Japan:

> *Lesson 1*: **There are serious challenges to the international liberal order**. Russia has collapsed the post-WWII expectation that borders can only change by negotiated consensusin Europe of all places.
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> *Lesson* 2: **You cannot tell how a good military is until you fight it**. Russia's military was considered the second best in the world, but it is not even the second best among former Soviet states. Nobody expected Russia's underperformance, including the U.S. government.

Lesson 3: **The common assumption was that economic sanctions were going to revolutionize warfare**. The Biden administration wanted to rebalance U.S. tools of influence (less military, more economic and diplomatic). However, the ability for markets and institutions to adapt is unpredictable and difficult to control.

Lesson 4: **Nuclear deterrence is back on the table**. China is building up its nuclear stockpile and this is something to worry about, especially considering the Russia-People's Republic of China (PRC) “Treaty of Unlimited Friendship.”

Lesson 5: **Similar to the assumption on economic sanctions, the same is true for the assumption of the prevalence of cyberattacks.** Cyber warfare has not been utilized as much as presumed because it is easier and more cost effective to take power plants offline and deactivate hospital servers by brute force (i.e., “blowing them up”) than using cyberattacks.

Lesson 6: **Civil society in free countries can effectively mobilize outside of government encouragement**, **embodying the vibrancy of freedom**. From this, we should not lose faith in upholding a liberal international order.

Lesson 7: After the Biden administration’s abandonment of Afghanistan, it is encouraging to see that, **when the United States actually cares, it can take measures to defend the liberal international order**. Free societies are slow to mobilize but enduring in their commitment to values.

Lessons for China:

Lesson 1: If you act fast, you may be able to outrun liberal societies.

Lesson 2: Nuclear deterrence actually works. The United States is not risking its own troops to defend the international liberal order.

Lesson 3: China is so influential in supply chains and has been the engine of economic growth for the past ten years, therefore the United States and allies will not take any harsh economic measures in the event of Chinese actions vis-à-vis Taiwan, South China Sea, etc.

Lesson 4: If China gives businesses and civil society groups in free countries time to adapt, the United States and allies will be able to make themselves more self-reliant.

Despite the Chinese government’s ardent support for Russia, its banks are not bankrolling this undertaking in order to avoid the risk of sanctions. Russia is going to North Korea for artillery shells and Iran for drones, despite the “Friendship Without Limits.”

At the end of the day, cooperation among free countries built this order and has the strength to sustain it.

Ms. Murphy then began a question-and-answer session with the panelists. The first question was directed to Mr. DiPippo and was about lessons learned from the Russian case on using sanctions as a deterrent.

Mr. DiPippo responded that deterrents need to be clear and credible. There was a scramble on the part of the European Union to respond with sanctions only after the invasion. Therefore, there needs to be more coordination before the fact. Economic sanctions are never going to be a substitute for military deterrence—they might supplement it, but they cannot replace it. *The Financial Times* published a piece in December stating that Putin's economic advisors told him how bad the fallout from an invasion of Ukraine would be, but he did not care—he believed it was going to be quick. Putin's logic was sound in the sense that he did not think it would be a bad situation in the long term, but his assumption about it being a quick military operation was incorrect.

Ms. Murphy then asked Mr. Ohara for his reaction about Japan's announcement on an increase in defense spending to two percent of GDP.

Mr. Ohara noted that two percent was still not enough to fill the gap. Japan sought to show its effort in deterring autocratic countries' behaviors by doing this. Two percent carries this meaning but unfortunately the Japanese administration has been unable to explain well to the public why Japan needs this policy.

To Dr. Schake, Ms. Murphy followed up on points made during Dr. Schake's presentation on the surprises from the Ukraine conflict, including the power of civil society. She inquired whether North Atlantic Treaty Organization (NATO) was meeting the moment, or were they overreacting militarily.

Dr. Schake said that NATO does not have a lot of the tools to levy economic sanctions, but it was significant that leaders from Japan, South Korea, and Australia were invited to a NATO summit. This indicates an alliance of like-minded countries. An alliance of thirty countries is an unwieldy organization, but its members have held the line on sanctions and common action. Sweden and Finland—who have historically been neutral—have signaled their interest in common defense. When countries are scared or worried about others' behaviors, it feels much safer to stand shoulder-to-shoulder with friends.

Ms. Murphy then opened the session to questions from the audience.

The first question was directed to Dr. Schake about the lessons that China has learned from the Russia-Ukraine case make it more cautious or bolder with regards to Taiwan.

Dr. Schake responded that the speed and breadth of intelligence sharing leading up to the Ukraine war could make China more cautious in an invasion or blockade scenario. China should be worried about whether its military can actually sustain itself in a fight. Countries that have not fought wars in a long time ought to be doubtful whether they have it. However, the Chinese government is arrogant enough to think they will be enough. We have seen in Chinese moves over the last ten years is that they are incredibly aggressive, but they tend to go in small increments. So, we need to increase the clarity and credibility of our deterrence signals.

Another audience member noted that one of the surprises from the Ukraine crisis is how United States and allies all see it as "one theater." In other words, it does not seem to be the case that they are ignoring what is going on in Asia. Do panelists see this as surprising? Nobody is talking about pivoting to Asia—it's all one problem.

Dr. Schake said that dominant powers do not have the luxury of pivoting from one theater to another. The United States is already engaged in Asia, and the idea of a "pivot" created the anxiety of U.S. abandonment among allies in the region. Russia's invasion of Ukraine shocked us into seriousness and served as a reminder that U.S. adversaries, though beneficiaries of the international order, are seeking to use it to create beneficial outcomes for themselves. This why the United States and Japan have appropriated so much funding in responding to the crisis.

Another audience member said that China has indicated its nuclear arsenal is for defensive purposes. How does China's idea of nuclear deterrence differ from that of Russia's?

Dr. Schake said that nuclear deterrence is the product of perception. She did not think we should give any credence to China's policy of No First Use (NFU). If China is committed to it, why are they building hypersonic missiles? Pledges of NFU feels nice, but when they are inconsistent with force structure, they have little credibility.

Panel 2: Strengthening the Rules-based International Economic System

The second panel was moderated by Mr. Naoyuki Haraoka (Executive Managing Director, JEF) and included Mr. Kiyotaka Morita (Deputy Director of the International Affairs Bureau, Keidanren Japan Business Federation), Mr. Matthew Goodman (Senior Vice President for Economics and Simon Chair in Political Economy, CSIS), and Dr. Mary Lovely (Anthony M. Solomon Senior Fellow, Peterson Institute for International Economics), as panelists.

Mr. Haraoka began the session by noting that globalization has achieved so many good things—prosperity, peace, stability. JEF recently published a report on the rules-based international economic system. It will be truly important to have an interdisciplinary approach to this whole issue. Politics and economics are related and cannot be separated from each other. Economists have a narrow understanding of security—how is this relevant to the current situation?

Mr. Morita began by discussing the Trans-Pacific Partnership (TPP). TPP negotiations began in March 2010. Three years later, Japan participated in these negotiations. Finally, in February 2016, TPP was finally signed. However, a year later, the United States withdrew from TPP. Japan wants the United States to join the Comprehensive and Progressive Agreement for Trans Pacific Partnership (CPTPP) and does not think the Indo-Pacific Economic Framework for Prosperity (IPEF) can substitute for CPTPP, as IPEF does not include market access. So, what can we do? The United States is unlikely to come back to CPTPP in the near future, but it is possible that a similar framework among G7 countries could be established.

For Japan, trade relations with China are very important. China is by far Japan's largest trading partner. On the other hand, this creates economic security issues. Japan must be careful in giving away critical technologies. The Regional Comprehensive Economic Partnership (RCEP) will contribute both to free trade and economic security—for example, it contains prohibitions on forced technology transfer and data localization requirements.

Regarding relations with China on human rights issues, Xinjiang is a place of concern for Japan and the United States. Global Magnitsky sanctions can be effective in responding to this issue.

The World Trade Organization (WTO) plays a key role in providing a multilateral rule-based trade system.

Dr. Lovely began her presentation by saying **s**ome observers view IPEF as a partial solution to the situation of the rules-based trade system being eroded.

Immediate WTO reform is unlikely to come any time soon and is overshadowed by U.S.-China bilateral tensions. A divided world of regional trade blocs is not a substitute for the WTO. Regional agreements have long been consistent with countries' commitments to the WTO. Today, however, new agreements and alliances have challenged WTO rules and norms, especially non-discrimination. The United States has made clear its intention to reduce China's role in the global supply chain.

Perhaps the clearest attempt to bifurcate global supply chains is IPEF—in a way, it is an invitation to other countries to alter the content of regional supply chains and to replace China in service of the U.S. market. In short, the United States' plan is to build discrimination into the DNA of IPEF. As United States Trade Representative (USTR) Katherine Tai has made clear, IPEF is not a traditional trade agreement, but rather viewed as an economic agreement. The United States is encouraging "friendshoring," not by trade liberalization, but by constraints on trade. How deep into global value chains will United States' efforts for friendshoring go? How will IPEF countries respond to U.S. demands, given that many are also in RCEP (which includes China)? China and the Association of Southeast Asian Nations (ASEAN) are beginning a new round of trade negotiations—can ASEAN countries run two separate supply chains? How will Europe react?

Japan is the most important U.S. ally in the region. How can Japan work with IPEF while defending its commitment to a rules-based trade order? U.S. ambitions in this area are very broad and undefined, which raises a lot of uncertainty for global businesses. Japan's role can be best understood as moderating U.S. demands.

Mr. Goodman proceeded with his remarks saying that there are three key disruptive countries in the world today: Russia, China, and the United States.

On Russia, although it has disrupted the global economy via food supplies and the overall order, it is not a major player in the global economic order.

China, obviously, is a disruptor, but there are different types of disruption that it has caused, divided into three historical stages. The first was *positive disruption* when China was pursuing a policy of economic opening and reform beginning in the late 1970s. Then, there was *negative disruption* in the 2000s and 2010s when China entered the WTO. Since 2010, we are in a third phase of continued *negative, but policy-led disruption;* this predates Xi and is rooted in indigenous innovation, Made in China 2025, intellectual property (IP) theft, economic coercion, establishing alternative institutions (while not strictly disruptive, still raise the question of what benefits they provide for the world).

As for the United States, even before the Trump administration, the United States was raising questions about the WTO's dispute settlement mechanism. The past seven years have differed greatly from the previous 70 years, when the United States was building these same institutions. U.S. citizens increasingly felt like the rules they wrote were not benefitting them in the same way that they had before. Now the United States is actively promoting forms of decoupling and deglobalization (to a point). Some of this disruption is appropriate based on changing realities. We are going to continue hedging against risks associated with China and selectively decoupling from China to reconfigure supply chains. However, Mr. Goodman sees some corrections as soon as this year.

Three tensions in the Biden approach:

1. The tension between our priority in investing in ourselves and our desire to work with allies and partners in promoting joint economic security;

2. The tension between the impulse to confront China and the need or stated desire to engage on some level with China;

3. The biggest tension of all is the lack of a U.S. trade policy—that means we are not giving our partners what they really want (i.e., market access). Traditional trade policy requires the approval of Congress, but the administration has made clear that it will not do this for IPEF. The problem with this is that Congress controls the purse and decides market access. Additionally, if Congress approves of a trade policy, it becomes law. IPEF without Congress will not be as durable.

Three policy proposals:

1. Think from a perspective of openness and engagement; while risky, economic engagement is good for us. Be more positive and confident.

2. The United States needs to reengage with a traditional, but updated trade policy.

3. The United States needs to work more closely with allies, including Japan. Japan is a stabilizing force, not a disruptive one. Japan needs to nudge the United States back to being a force that upholds and maintains, rather than disrupts, the global economic order.

Following Mr. Goodman's remarks, Mr. Haraoka asked Mr. Morita about the idea of combining the Japan-EU Free Trade Agreement (FTA) with CPTPP and/or RCEP.

Mr. Morita said it was possible but unlikely. There is a need to explore other options. Japan wants the United States in CPTPP, but is unlikely to be the case. There is a U.S.-Japan trade agreement. For the most part, tariffs are eliminated except for the automobile sector. Both agreements can offer a basis for formulating a new scheme incorporating the United States, European Union, and Japan. On the digital sector, there is a U.S.-Japan digital trade agreement in which data flows have been liberalized. We can build a new trade scheme upon this foundation. A new kind of scheme must be open to all countries which are ready to meet high standards.

Mr. Haraoka posed to Dr. Lovely that she emphasized aspects of political alliances in FTAs, rather than the pure economic aspects. Economists still consider the economic benefits of free trade. If IPEF included market access provisions, it would be greatly appreciated by Asian countries. He asked her thoughts about these points.

Dr. Lovely said that as an economist, she would agree that, until most recently, the United States values the economic benefits of free trade. We are in a world where some consider trade to be zero-sum. IPEF is fundamentally about diverting trade and creating new configurations for supply chains. Why do they not exist already? Because creating new configurations is expensive. Subsidizing the construction of new fabs, for example, illustrates the cost of economic security. In creating new trade barriers on products like chips and solar cells, many are willing to accept this cost. What about other goods?

Mr. Haraoka asked Mr. Goodman about his observations about U.S. politics leaning towards accepting liberalization.

Mr. Goodman said there have been some "straws in the wind," such as Sec. Yellen's recent mention of comparative advantage—which is "a risky thing to do" these days—while also mentioning the benefits of "friendshoring." There are two reasons why politics maybe be leaning towards liberalization:

1. Two-thirds of U.S. Citizens, mostly Democrats, favor more trade. The new chair of the U.S. House of Representatives Ways and Means Committee has raised the prospect of renewing trade promotion authority.

2. Many political analysts point out that when a president loses one or both houses of Congress in the midterm, they will shift focus towards foreign policy as they lose sway over domestic policy. As President Biden goes out in the world, he will hear that people want the United States "back in the game" on trade.

Mr. Haraoka turned to the audience for questions. The first questions focused on the idea expressed about a G7 free trade and investment club. There have been some meetings involving G7 members already taking place (e.g.,the U.S.-Japan 2+2 meeting and Biden-Kishida bilateral meeting). Is the expectation that this proposal will figure heavily into these meetings? Is there any prospect for its advancement? Mr. Morita said that Japan's government will be proposing this idea at this year's G7 Summit in Hiroshima.

Mr. Goodman said that the 2+2 meeting that occurred in early January suggests that it will be a security-focused week, but economic security may be featured. Prime Minister Kishida may also privately raise some of the issues discussed at today's panel.

The next audience question asked if it was possible that Japan and the European Union could incentivize China to play by the rules. Dr. Lovely said the United States i**s** already seeing a movement away from a "Wolf Warrior" policy towards a charm offensive. The Chinese government has apparently realized it overreached in areas in like Zero-Covid and the tech and finance regulatory spheres. However, the United States is more concerned about China's long-term ambitions and certain Chinese industrial policies and barriers to U.S. exports. The Europeans have definitely changed their view on China over time, and a lot remains to be revealed.

Mr. Goodman added that the European Union and Japan want to figure out how to continue to engage with China while taking actions to mitigate risk—they are perhaps more inclined than the United States to find ways to engage. Nobody wants to walk away from China but everyone has some concern—we are all struggling with the same balance.

Panel 3: Impact of the Ukraine Crisis on Energy and Climate Change Policies

The third panel was moderated by Ms. Jane Nakano (Senior Fellow, CSIS) and featured Dr. Naoko Doi (Group Manager and Senior Economist, The Institute of Energy Economics, Japan), Mr. Ben Cahill (Senior Fellow, CSIS), and Dr. Jennifer Gordon (Director, Nuclear Energy Policy Initiative, Atlantic Council) as speakers.

Ms. Nakano opened the session by giving an overview that the panel will look at how the Russian war-induced energy crisis is affecting various sectors and climate change issues.

Mr. Cahill kicked off remarks by saying that it is hard to encapsulate everything that has happened this year in energy and climate. Energy security has come back in a big way – it was a topic that was neglected for many years. The last year has shown that its critical to think in the long term and prepare for the worst-case scenario when dealing with energy security issues. The silver lining is that the situation has forced policymakers to have a conversation. Energy security is not just about price. In the energy sector, there is a trilemma between availability, affordability, and sustainability. Achieving all three will only get harder.

We have also learned that the skies are not falling—markets adjust. Before the Russia-Ukraine war, Europe depended on Russia for much of its crude oil and gas. Today, Germany imports virtually no gas from Russia. And yet, European oil inventories remain 84 percent full, and natural gas prices remain stable. In addition to the United States' release of resources from the strategic petroleum reserve, we have also seen a high degree of multilateral coordination on energy, including sanctions and price caps. These are all new tools for policymakers working together. Still, we cannot be too confident—oil and natural gas prices are low right now, but this is more due to happy circumstance. Several factors, like China's slow economic recovery or changes away from a warm winter in Europe (a condition which has led to lower energy usage), may affect this.

In Japan, there is a deep concern over energy security. It feels vulnerable in its supply of natural gas and oil. There is also a growing acceptance of nuclear energy.

Dr. Gordon noted that thinking back to this time last year, many were coming off of the high of the 2021 UN Climate Change Conference (COP26) which carried into the start of 2022. This meeting focused on decarbonization with a look towards future meetings. Russia's invasion of Ukraine changed this conversation dramatically on a geopolitical level and catapulted energy security to the forefront. Nuclear energy tells us that the choice between energy security and decarbonization is a false one. Countries in central and eastern Europe, given their familiarity with Soviet-era nuclear infrastructure, represent new opportunities for the U.S. nuclear industry. One of the key questions in this panel is how the United States and our allies can cooperate, be greater than the sum of our parts, and outmatch Russia's global energy influence in world markets.

Dr. Doi noted that developed countries' governments have been strengthening the efforts for mitigating the impacts on current energy crisis, through the provisions of mechanisms/subsidies for moderating the energy price increases. The international race for subsidy provision for green growth has intensified. "How" and "to what extent" governments offer support for the path for green growth have become the watershed toward attracting private investment. There is a move toward "environmental protectionism," but at the same time when bottom-up actions for international cooperation on climate change begin to be formulated. Leadership from G7 governments should be taken in a concerted manner to bottom-up the international efforts for climate change.

A common trend in Japan and across the world is that governments are providing assurances for private actors to invest in clean energy solutions. Compared to other large economies, the U.S. government spends very little of its clean energy funds on energy affordability. There exists both international cooperation and competition on clean energy transition: the G7 Climate Club, for example, serves to share best practices among member countries. Several competing organizations for the energy transition exist between regions.

Ms. Nakano asked Mr. Cahill how prices affected U.S. policymaker and industry priorities. Mr. Cahill stated that the Ukraine crisis has forced countries' governments to take a position between (a) fossil fuels being the answer and (b) the necessity to reduce dependence on them. Developed countries need to develop a mixed approach that does not pick only one of the two options.

One of the themes at COP26 was a gap between developing and developed countries – developing countries felt that developed countries were not doing enough to invest in developing countries' energy transition, while at the same time developed countries criticized developing countries' continued use of fossil fuels and lack of progress on the transition.

Ms. Nakano turned to Dr. Gordon and noted that **n**uclear energy has long been a part of U.S.-Japan cooperation. How does the Russian war-induced energy crisis affect the scope and variety within this cooperation? Dr. Gordon said that in the past year, this cooperation has only intensified. One example is the October 2022 U.S.-Japan agreement to employ Advanced Small Modular Reactors (SMRs) in Ghana. Moving into third countries is a great example of us outperforming Russia and ensuring that we hold a significant market share.

Ms. Nakano asked Dr. Doi about providing some specifics about the plan, implementation, benchmarks of Japan's green transformation plan. Dr. Doi said that the key is comprehensive approach will be taken to strengthen regulation, and government offer economic incentives amounting to 20 trillion yen for the coming 10 years, as a kind of seed money to attract private investment. It is aiming to mobilize 150 trillion yen of both public and private investment for green transformation. To recover the public bond issuance at 20 trillion yen, emissions trading will be implemented in industries such as energy utilities and also energy surcharge will be introduced for energy importers.

Ms. Nakano asked Mr. Cahill about what are some of the effects that the energy crisis has had on major suppliers of oil and gas. Mr. Cahill said that the United States is still growing into its role as an energy exporter of crude oil and petroleum products. We still have an energy policy and mentality rooted in the 1970s, when the focus was on preventing and mitigating exposure to energy shocks. How do we insulate ourselves from shocks as a net exporter? What is the future of natural gas, as prices have soared in the past year? Can it play a role as a transition fuel in developing countries with such high prices?

Ms. Nakano noted to Dr. Gordon that nuclear energy can be one of the few sources serving decarbonization and energy security objectives. She asked about the challenges Dr. Gordon sees in the U.S. and Japanese nuclear industries. Dr. Gordon said the most obvious challenge is public opinion and effectively explaining to the broader public that nuclear provides both of those benefits. Finance is an opportunity, not a challenge: co-financing and the selling of reactors in third countries is an opportunity for us to work together.

Ms. Nakano asked Dr. Doi about the economy-wide effects that energy security concerns have created in or beyond Japan. In referring to the case of Germany, she noted that German industrial factories prefer to transfer cost to the consumers firstly, followed by the investment in energy efficiency, production cuts, and introduction of alternative energy sources. Dr. Doi noted that there is a great concern in Germany over the relocation of plant to the United States, where industries can enjoy stable supply of natural gas, as well as economic incentives from Inflation Reduction Act. Dr. Doi said that public opinion on nuclear energy is also crucial in Japan. The industry is seeking improvements in efficiency and production.

To Mr. Cahill, Ms. Nakano asked for his views on the energy issues that he would like to see Washington press forward at this year's G7 Summit in Japan. Mr. Cahill said his preferences included:

1. Support for green energy in developing countries—it's obvious after COP27 that there is still work to be done.

2. Support for a just transition—this has already received focus in India, South Africa, Vietnam; international institutions have a role to play here.

3. Reduce greenhouse gases from fossil fuels, particularly natural gas. Japan has an important role to play here as a major gas buyer.

4. Energy efficiency—there is a lot that Japan can teach the rest of the world here. How do we drive down energy demand while increasing efficiency?

Ms. Nakano asked Dr. Gordon her views on energy policy priorities she would like to see the United States and Japan focus on. Dr. Gordon highlighted that the two most important things when thinking about climate change are (1) keeping nuclear reactors online and (2) building more reactors worldwide, specifically the next generation of advanced reactors in developing countries.

Dr. Doi was asked about identifying concerns and opportunities as the dynamic of competition versus cooperation in international clean energy institutions continues. She said that the G7's Climate Club could open the door for a larger G20 institution. She has a hope that this regional cooperation could provide some sort of solution to achieving carbon neutrality.

Ms. Nakano turned to the audience for questions. One audience member asked if nuclear power was viable in developing countries, especially given security concerns. The audience member also asked if hydrogen technology more of an research and development (R&D) concept or if it was a viable technology in the short term.

Dr. Doi said that green hydrogen is an option but countries should support demand for electrification in regions like Southeast Asia with the use of renewable energies. Hydrogen would come later. Also, Southeast Asia is fossil fuel-based economy; therefore, grey or blue hydrogen should come earlier than green hydrogen.

Ms. Nakano said it is important to keep in mind the development of carbon capture technology; without carbon capture, hydrogen may face opposition. Hydrogen is another area with potential for good collaboration.

Dr. Gordon noted that on integration of nuclear into energy systems, we may not see nuclear-powered cars, but we may see electric vehicles (EVs) powered by electricity generated by nuclear (as opposed to coal, which will not leave us much better off despite using EVs).

Ms. Nakano closed the discussion by saying that reliance on a single country as a source of energy that has different norms in trade practice presents problems, which explains why the United States in recent administrations has been focused on restructuring clean energy supply chains.

Concluding remarks

Mr. Toyoda closed by saying that there are many answers to the issues raised today, for example maintaining a rule-based economic system, managing the environment and helping developing countries in their energy transitions, with potential for future discussion.