Overview of this year's G7 agreement and its impacts on both Japan and Asian countries

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Climate policy in general (Leaders' para 18)

- We are steadfast in our commitment to the Paris agreement, keeping a limit of 1.5°C global temperature rise within reach through scaled up action **in this critical decade**,
- We … highlight the increased urgency to reduce global GHG emissions by around 43 percent by 2030 and **60 percent by 2035, relative to the 2019** level, in light of its latest findings.
- we **call on all Parties - especially major economies** - whose 2030 NDC targets or long term low GHG emission development Strategies (LTSs) are not yet aligned with a 1.5°C pathway and net zero by 2050 at the latest, to revisit and strengthen the 2030 NDC targets and **publish or update their LTSs** as soon as possible and well before UNFCCC-COP28, and **to commit to net zero by 2050 at the latest.**
- we **call on all Parties to commit at UNFCCC-COP28 to peak global GHG emissions immediately and by no later than 2025.**

- "this decade" was repeatedly emphasized in IPCC AR6 SYR.
- "60% by 2035" was also mentioned in IPCC AR6 SYR. Parties need to submit the next NDC with 2035 targets in 2025.
- "call on all Parties to publish LTSs to commit to net zero by 2050" rather than "around mid-century" as last year.
- "call on all Parties to commit to peak global GHG before 2025" is also new, which was not seen last year's G7 agreement.

Various pathways toward a common goal (Leaders' para 19 and 25)

- We will **engage with developing and emerging countries** to accelerate emission reduction, including by supporting their transitions to climate resilient, circular, and nature positive economies and net-zero GHG emissions **through various and practical pathways taking into account national circumstances.**
- While **acknowledging various pathways** according to each country's energy situation, industrial and social structures and geographical conditions, we highlight that these should **lead to our common goal** of net zero by 2050 at the latest in order to keep a limit of 1.5 °C within reach. In this regard, we **invite the IEA to make recommendations by the end of this year** on options how to diversify the supplies of energy and critical minerals as well as clean energy manufacturing.

- Probably this is the most fundamental principle that the GOJ wanted to put forward in this year's G7. Important in particular for the Global South.
- IEA to make recommendations, perhaps building upon its ETP published this January. This task-out to IEA was not included in Ministers' communique.

Phase-out of unabated fossil fuels (Leaders' para 26)

- We underline our commitment, **in the context of a global effort**, to accelerate the **phase-out of unabated fossil fuels** so as to achieve net zero in energy systems by 2050 at the latest in line with the trajectories required to limit global average temperatures to 1.5 °C above preindustrial levels, and **call on others to join us in taking the same action.**

- The "phase-out of fossil fuels" was what the EU tried to agree at COP27 in vain.
- The above text obviously targets major-emitting emerging economies such as China. To be discussed at G20 and COP28.
- It should be noted that it covers not only power generation but also energy in general.

Natural gas and LNG (Leaders' para 26)

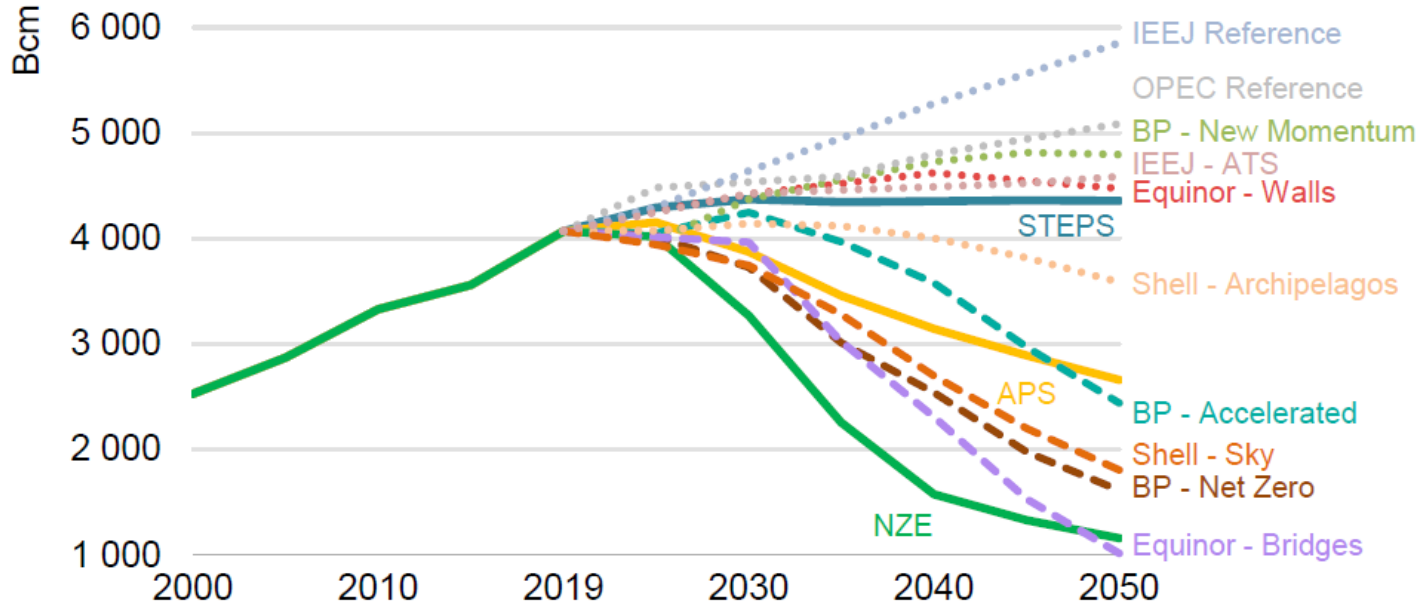
- It is necessary to accelerate the phase out of our dependency on Russian energy, including through energy savings and gas demand reduction, in a manner consistent with our Paris commitments, and address the **global impact of Russia's war on energy supplies, gas prices and inflation, and people's lives**, recognizing the primary need to accelerate the clean energy transition. **In this context**, we stress the important role that increased deliveries of LNG can play, and acknowledge that **investment in the sector can be appropriate** in response to the current crisis and to **address potential gas market shortfalls provoked by the crisis.**

- Elmau last year also agreed a similar language on investment in the gas sector. But this time around, the "context" is different; last year's context was phase-out of dependency on Russia, whereas this year "global impact" as well.
- Also investment can be appropriate to address not only the current crisis but also the future gas market shortfalls.
- The IEA report to G7, "Outlooks for gas markets and investment" contributed to this agreement.

Outlooks for gas markets and investment ①
IEA's report to G7 (with IEEJ's cooperation)

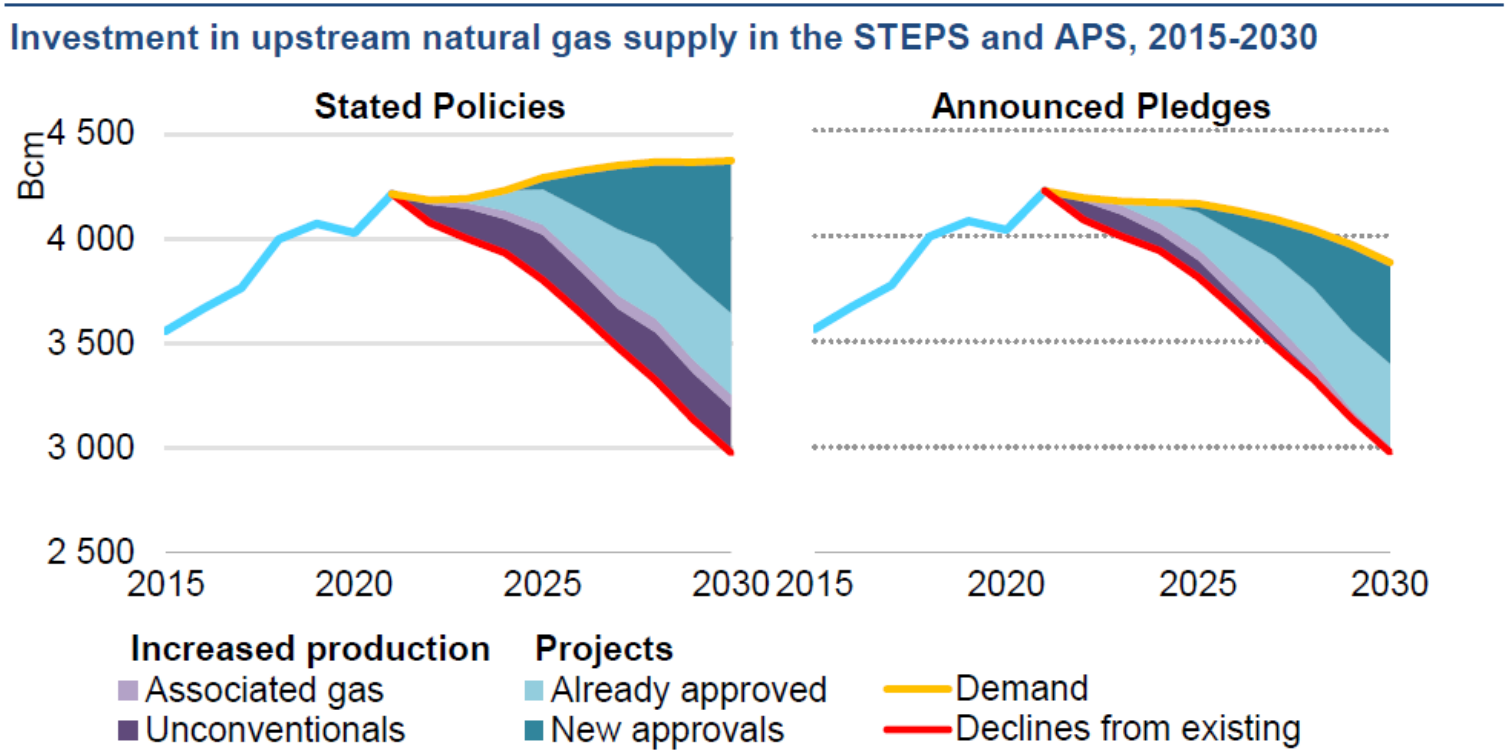
- "**Large variations in the supply and demand outlook in different scenarios** and different modelling frameworks **highlight the uncertainties** affecting natural gas and LNG markets."
- Backcast (NZE and most of APS, large dotted lines) vs. Forecast (STEPS, small dotted lines)

Natural gas demand in the World Energy Outlook 2022 compared to other scenario-based assessments



Outlooks for gas markets and investment ②
IEA's report to G7 (with IEEJ's cooperation)

- "in the STEPS and APS, **new investments in upstream gas supply remain necessary**.....
- "in emerging and developing economies.....**investment in new LNG infrastructure is needed in these scenarios,"**



Power system and coal power generation (Leaders' para 25)

- We reaffirm our commitment to achieving a **fully or predominantly decarbonized power sector by 2035**, and prioritizing concrete and timely steps towards the goal of accelerating the **phase-out of domestic unabated coal power generation** in a manner consistent with keeping a limit of 1.5°C temperature rise within reach and urge others to join us.
- We will **work towards ending the construction of new unabated coal fired power generation** as identified in the IEA's Coal in Net Zero Transitions report in 2022 as one of the primary actions to be taken in line with the IEA net zero by 2050 scenario. We **call on and will work with other countries to end new unabated coal-fired power generation** projects globally as soon as possible to accelerate the clean energy transition in a just manner.

- The first bullet point is basically the same as Elmau last year. No target year for phasing out domestic unabated coal power generation.
- The second bullet point, ending construction, is new. Slightly strengthened from "recognize the need" of Ministers to "work towards" as above.

Hydrogen and its derivatives such as ammonia
(Leaders' para 25)

- We recognize that **low-carbon and renewable hydrogen and its derivatives such as ammonia** should be developed and used, if this can be aligned with a 1.5 °C pathway, where they are impactful as **effective emission reduction tools** to advance decarbonization **across sectors and industries, notably in hard-to-abate sectors in industry and transportation**, while avoiding N2O as a GHG and NOx as air pollutant.
- We also note that **some countries** are exploring the use of low-carbon and renewable hydrogen and its derivatives in the **power sector to work towards zero-emission thermal power generation** if this can be aligned with a 1.5°C pathway and our collective goal for a fully or predominantly decarbonized power sector by 2035.
- We affirm the importance of developing **international standards and certification** including for a GHG calculation methodology for hydrogen production and mutual recognition mechanism for **carbon intensity-based** tradability, transparency, trustworthiness and sustainability.

- For the first time in the history, ammonia was mentioned in the Leaders' communiques.
- Effective not only for hard-to-abate industry and transportation but also for power sector.
- Clean hydrogen definition based upon not color but figures, i.e. carbon intensity.

Renewable and nuclear (Leaders' para 25 & 26)

- 【**Renewable**】The G7 contributes to expanding renewable energy globally and bringing down costs by strengthening capacity including through a **collective increase in offshore windcapacity of 150GW by 2030** based on each country's existing targets and a **collective increase of solar PV to more than 1TW by 2030** …..
- 【**Nuclear**】Those **G7 countries that opt to use nuclear energy** recognize its potential to provide **affordable low-carbon energy** that can reduce dependence on fossil fuels, to address the climate crisis and to ensure global energy security as a source of baseload energy and grid flexibility. They commit to **maximizing the use of existing reactors** safely, securely, and efficiently, including by advancing their safe long-term operation, in addressing the current energy crisis. They also commit, domestically as well as in partner countries, to **supporting the development and construction of nuclear reactors, such as small modular and other advanced reactors** with advanced safety systems, ….

- G7 renewable targets for the first time, but seem to be summing up each country's target.
- Much more strong language on nuclear than Elmau, such as those highlighted above and reference to Fukushima Daiichi.

Road sector (Leaders' para 19)

- Considering the findings of the International Energy Agency (IEA)'s Energy Technology Perspective 2023, we **also note the opportunity to collectively reduce by at least 50 percent CO2 emissions from G7 vehicle stock by 2035 or earlier relative to the level in 2000** as a halfway point to achieving net zero and to track the progress on a yearly basis.

- Ministers negotiated this text until the last minute.
- Japan's road sector has to accelerate decarbonization to realize this opportunity.

	FY2000 (MtCO2)	FY2020 (MtCO2)	Reduction 2000 to 2020	CAGR 2000 to 2020	2035 (MtCO2)	Required CAGR 2020 to 2035
LDV	130	89	-32%	**-1.9%**	65	**-2.1%**
HDV	96	72	-25%	**-1.4%**	48	**-2.7%**
Total	226	161	-29%	**-1.7%**	113	**-2.3%**

- "Various actions" were highlighted, including Japan's approach and synthetic fuels.

Industrial Decarbonization Agenda (IDA) (Leaders' para 19)

- We also encourage and promote private entities' work to foster innovation contributing to the **emission reduction of other entities** through decarbonization solutions.
- We welcome the progress of the Industrial Decarbonization Agenda (IDA) that decided to start working on implementation of the new **Global Data Collection Framework for steel** production and product emissions.

- In their communique's separate annex, Ministers also agreed that there is value in acknowledging "**avoided emissions"**". Ministers recommended "**A shared, international standard for measuring avoided emissions**".
- Building upon the OECD and IEA reports on **steel decarbonization**, Ministers also agreed the following:
  - ✓ Recognizing the five existing methodologies,
  - ✓ Recognizing the "net zero emissions measurement principles",
  - ✓ Begin implementing a Global Data Collection Framework for steel,
  - ✓ Working with relevant forums such as IEA's WPID, and
  - ✓ Extending beyond G7.

Transition finance (Leaders' para 21)

- We highlight the **need for corporates to implement their net-zero transitions** in line with the temperature goal of the Paris Agreement based on credible corporate climate transition plans. We also highlight that **transition finance**, in line with keeping a limit of 1.5°C temperature rise within reach, avoiding carbon lock-ins and based on effective emissions reduction, **has a significant role in advancing the decarbonization of the economy as a whole.**

- For the first time, transition finance was mentioned by G7.
- The latter sentence, which was taken from Finance Ministers' communique, was even strengthened than that of Climate, Energy and Environment Ministers.

G7 Clean Energy Economy Action Plan (Leaders' para 27 and separate statement)

I. Moving Forward United
- ✓ **Climate Club**, addressing carbon leakage

II. Maximizing the Impact of Incentives
- ✓ Transparency and coordination on G7 policies

III. Reducing Emissions Through Trade Policy
- ✓ Spurring markets to account for embedded emissions in traded goods
- ✓ Request **OECD** to explore approaches for computing carbon intensity of goods and services

IV. Establishing Resilient Global Supply Chains
- ✓ **IEA's** report of its progress on clean energy supply chain by COP28
- ✓ Ask **IEA** to produce a clean energy manufacturing roadmap leading up to a high-level international workshop in 2023

V. Promoting Clean Energy Technologies
- ✓ Develop international standards for critical mineral markets through **ISO**
- ✓ Invite **IEA** to convene an international forum

VI. Promoting Trade and Investment in Clean Energy Goods and Services
- ✓ Work at **WTO** to promote a circular economy for clean energy goods and services
- ✓ Incentivize reducing embedded emissions in clean energy goods and services

VII. Support for Global Partners

Critical minerals (Leaders' para 29)

- We reaffirm the growing importance of critical minerals in various fields, especially for the global clean energy transition, and the need to manage **economic and security risks caused by vulnerable supply chains**.

- Ministers agreed the following "Five-Point Plan for Critical Mineral Security", which was welcomed by Leaders.

Point 1: Forecast Long-term Supply and Demand

- ✓ Request IEA to establish a task force and undertake analysis

Point 2: Develop Resources and Supply Chains Responsibly

- ✓ Currently $13 billion fiscal support across G7

Point 3: Recycle More and Share Capabilities

- ✓ Facilitate environmentally sound management of e-Waste and recycle among developing countries and like-minded countries

Point 4: Save with Innovation

- ✓ Innovation in resource-saving and substitute technologies

Point 5: Prepare for Supply Disruptions

- ✓ Support IEA's "Voluntary Critical Mineral Security Program"

Summary on Climate and Energy

- **PM Kishida** at Hiroshima: "We commit to **holistically addressing energy security, the climate crisis, and geopolitical risks**. We aim at a **common goal** of net zero under **various pathways** depending on national circumstances. Japan will support energy transition of regional partner countries through **AZEC**."

- **Minister Nishimura** at Sapporo: "We, G7, could agree on the three points; 1) aiming at **a common goal under various pathways**, 2) working with **Global South,** and 3) managing **geopolitical risks**."

- Behind the success, there were:
  - ✓ A large number of workshops, evidence-based discussions among G7 experts
  - ✓ Coordination with IEA, etc.
    - IEA reports to G7: gas (with IEEJ's cooperation), steel, hydrogen, renewable, energy efficiency, CN pathways for ASEAN (with IEEJ's cooperation)
    - OECD (steel), IRENA (offshore wind)

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