

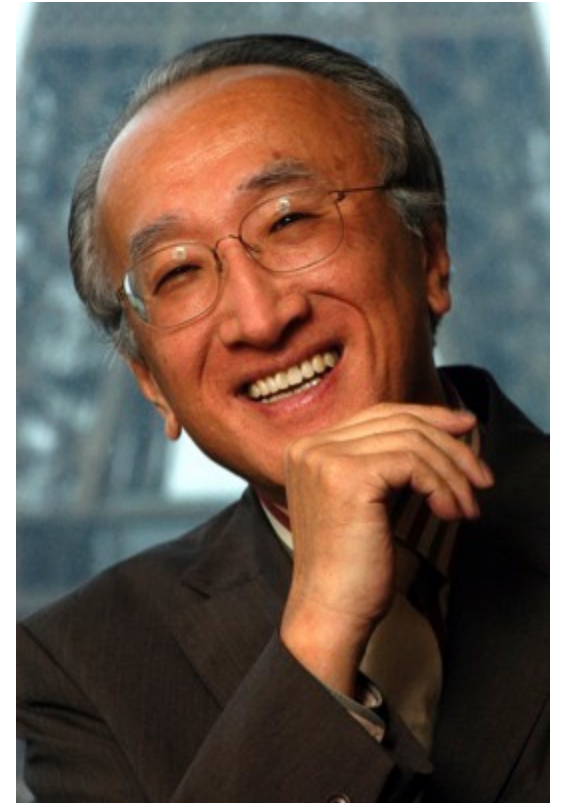
Global Energy & Climate Crises: Winners and Losers

How can Japan and Korea become winners together?

2024-5-22. H.eco Forum 2024

Nobuo TANAKA 田中伸男

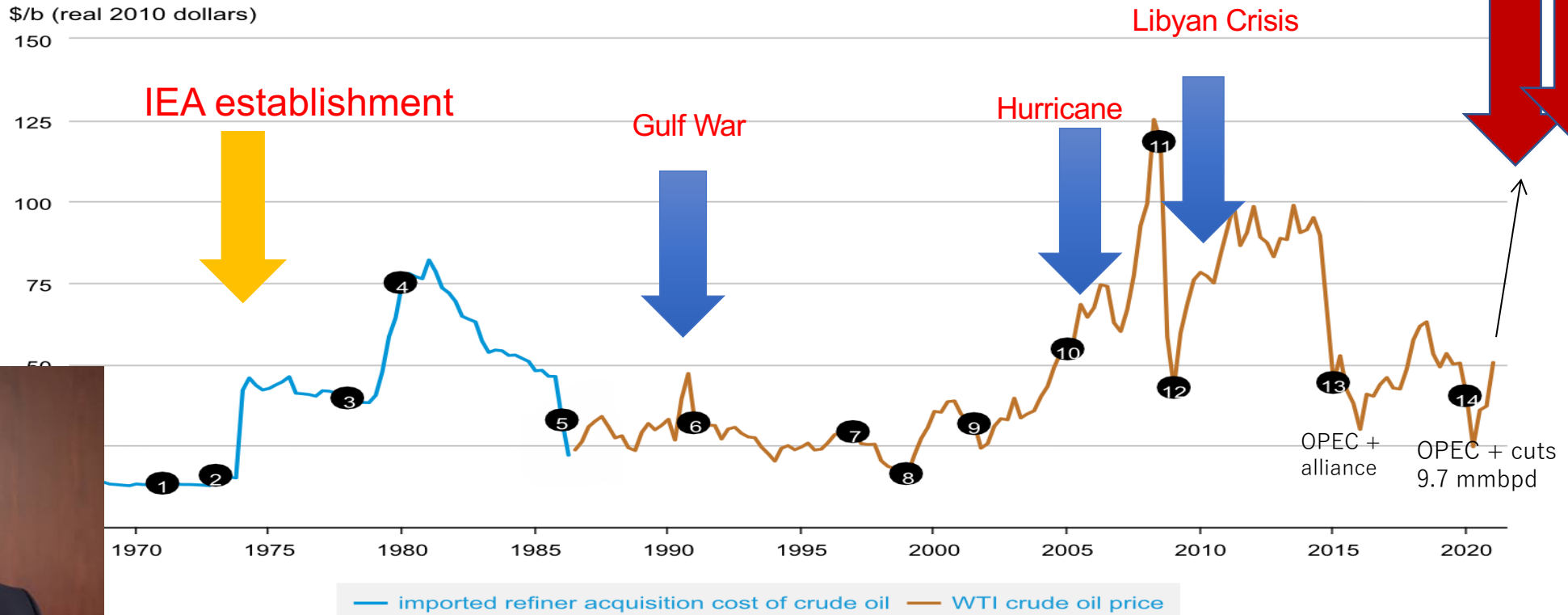
Executive Director Emeritus, International Energy Agency (IEA)
Chair, Steering committee of Innovation for Cool Earth Forum
(ICEF)



IEA was established for the 1973 Oil Shock

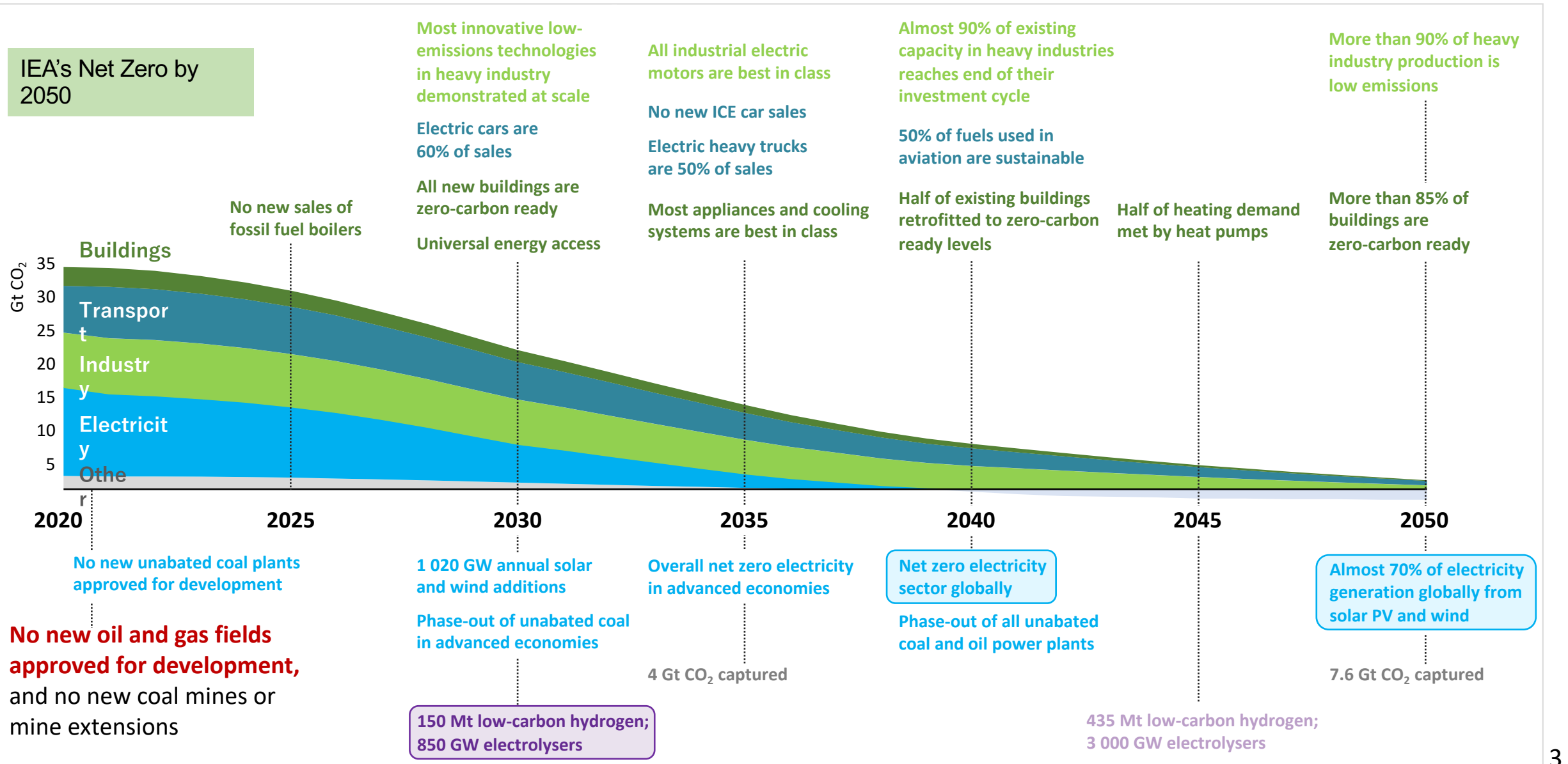
Ukraine I & II

IEA's mission is energy security : it released the Strategic Petroleum Reserve Five times.



Dr. Fatih Birol, Executive Director of IEA says that we are in the middle of the “first truly global energy crisis”.

“Net Zero by 2050” surprised OPEC and Oil Majors: The IEA Shock!



Net Zero by 2050 sets near-term milestones to get on track for long-term targets. (Back-casting)

It is the first **IEA shock**.

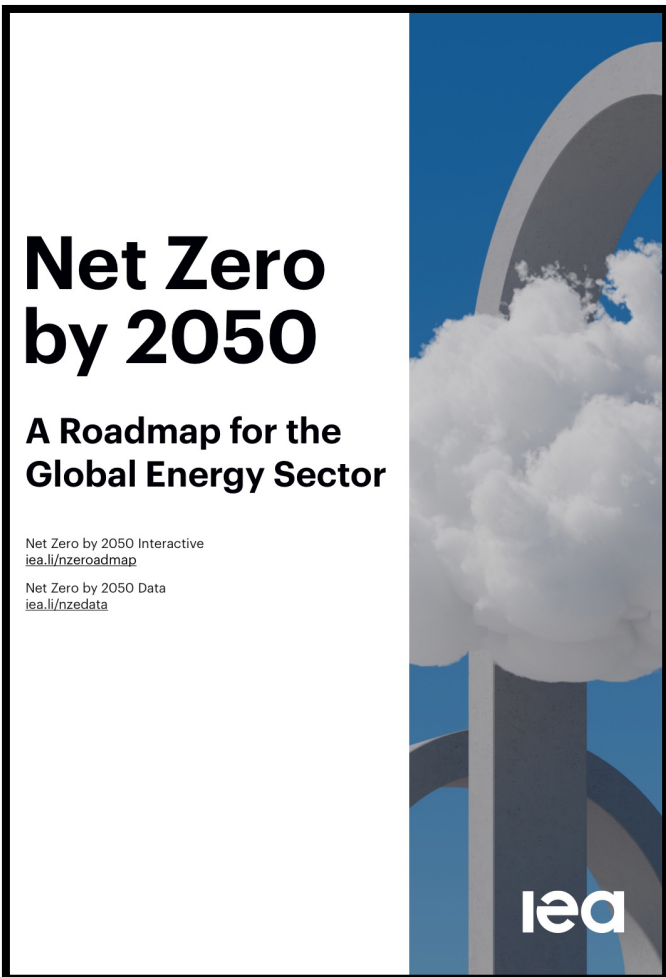
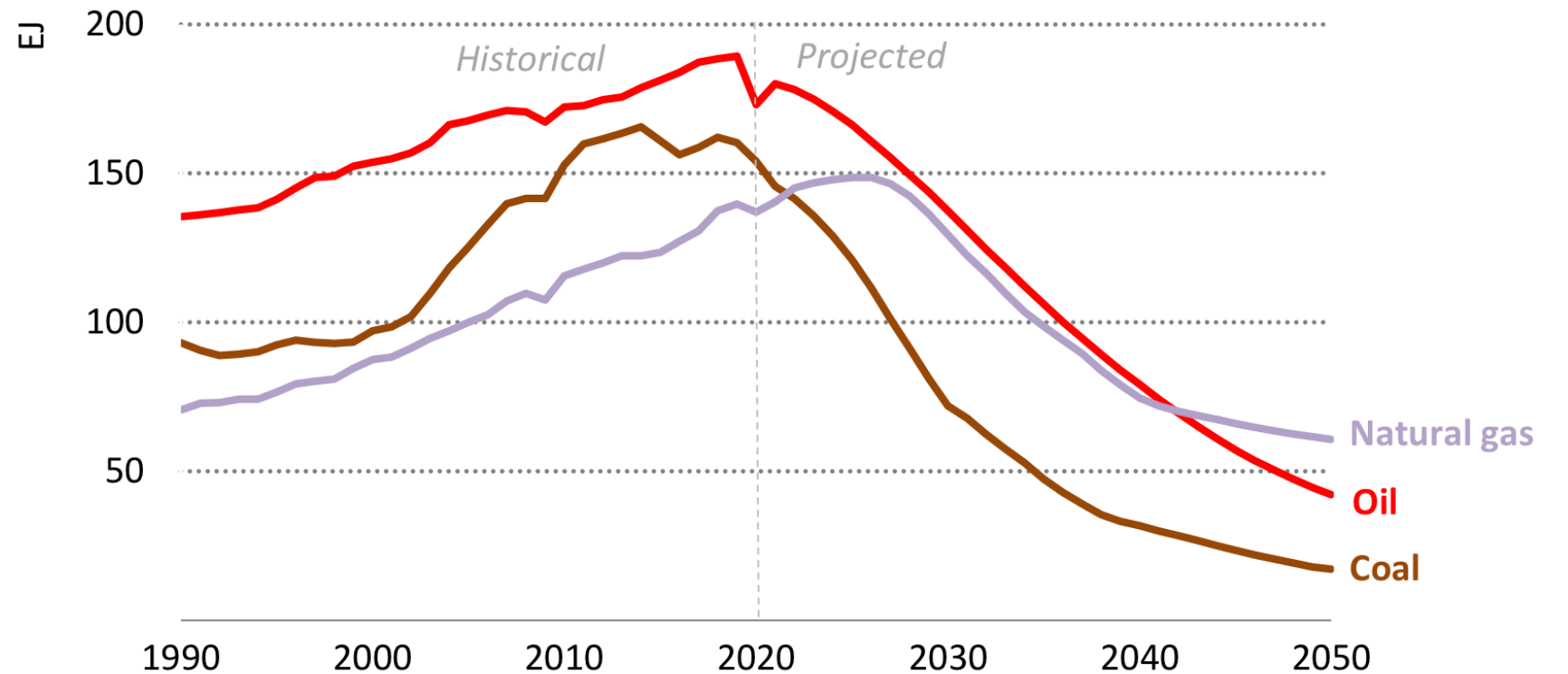


Figure 3.2 ▶ Coal, oil and natural gas production in the NZE



IEA. All rights reserved.

Between 2020 and 2050, demand for coal falls by 90%, oil by 75%, and natural gas by 55%

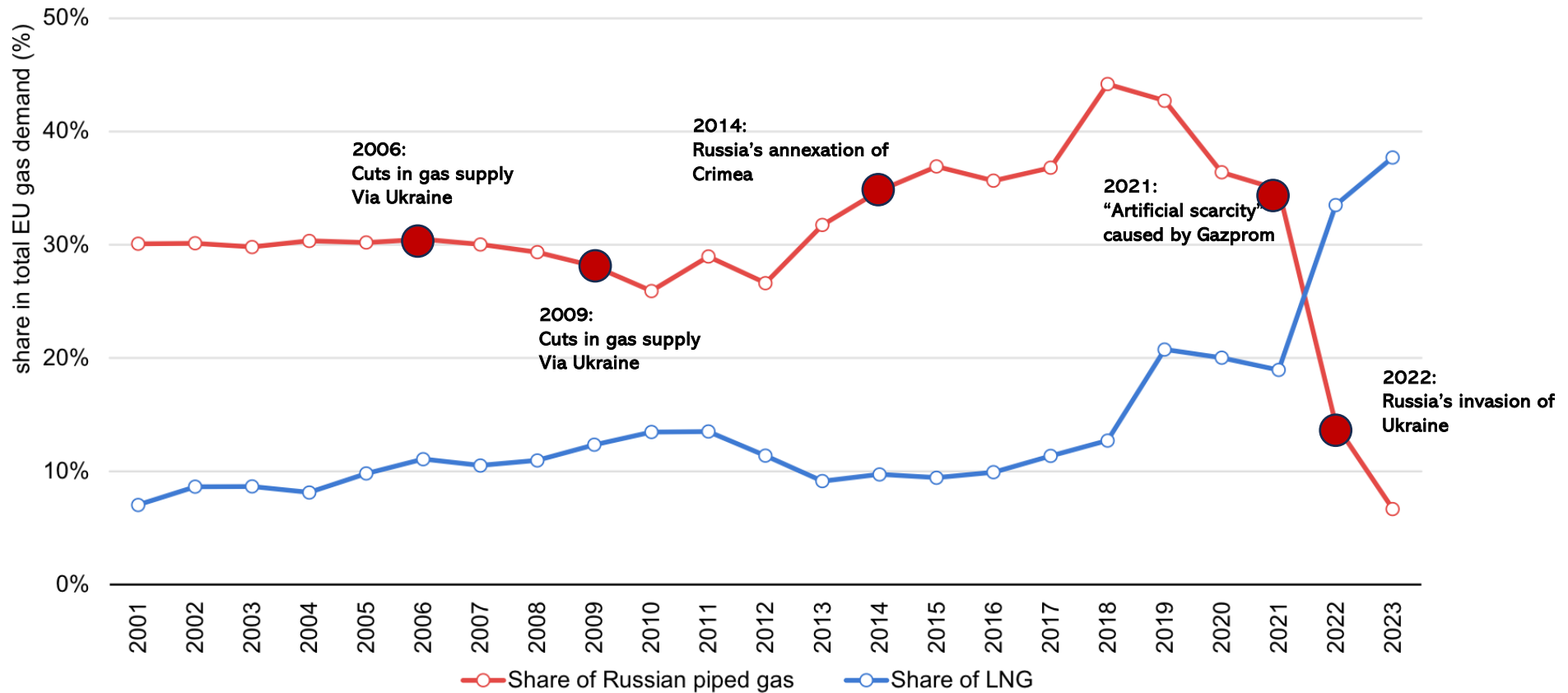
IEA's Faith BIROL said that Energy groups must stop all new oil and gas exploration projects from this year if NZ2050 should happen. The IEA was created by the Oil shock in 1974, but this publication triggered the first **IEA shock** to the Oil Producers!

Putin may have decided to invade Ukraine before Peak Demand of Gas and Oil would come.

LNG became a new baseload supply for the European market

Global Gas Security Review 2023. IEA

The share of LNG and Russian piped gas in the European Union's natural gas demand (2001-23)



IEA. CC BY 4.0.

Winners and Losers

| Country | Short term | Long Term |
|----------------|---|--|
| Russia | - - Lost EU market, less revenue, more war expenses | - - Loss of tech, investment, brain drain |
| EU | - Gas Shortage & high price. Risk of complacency. | +++ RE Power EU and CBAM H2 pipeline |
| US | + Shale gas boom, +IRA invites investment | +++ IRA for CCS, EV, H2, Megatech to lead RE100 |
| China India | + Cheap Russian gas & oil | +++ RE super power, - risk of supply chain + H2 super power |
| Saudi Arabia | +++ High Oil price, ? OPEC+ vs US | ? Blue H2 CCS, Green H2 solar, Mid East Geopolitics |
| Japan/ Korea | - High gas price. Russian retaliation? | ? Sustainable nuclear, Clean H2 supply chain |
| ASEAN | - High gas price | ? H2 supply chain, regional grid, JCM |

Sony warns it could move factories over Japanese energy policy

CEO pushes for renewable rules revamp to meet green manufacturing pledges of its client Apple



Sony's European sites already run entirely on renewables, while its facilities in China are set to make that transition by the end of March and by 2030 for those in North America © Bloomberg

By Kana Inagaki, Robin Harding and Leo Lewis 52
in Tokyo NOVEMBER 27 2020



Mercedes-Benz supply chain to become CO2 neutral by 2039

Mercedes-Benz announces its next milestone ambitions to make its supply chain carbon neutral by 2039

Georgia Wilson | Dec 8 | 10 min read



Not Supply side but Demand side driven and Finance push energy transformation has started.

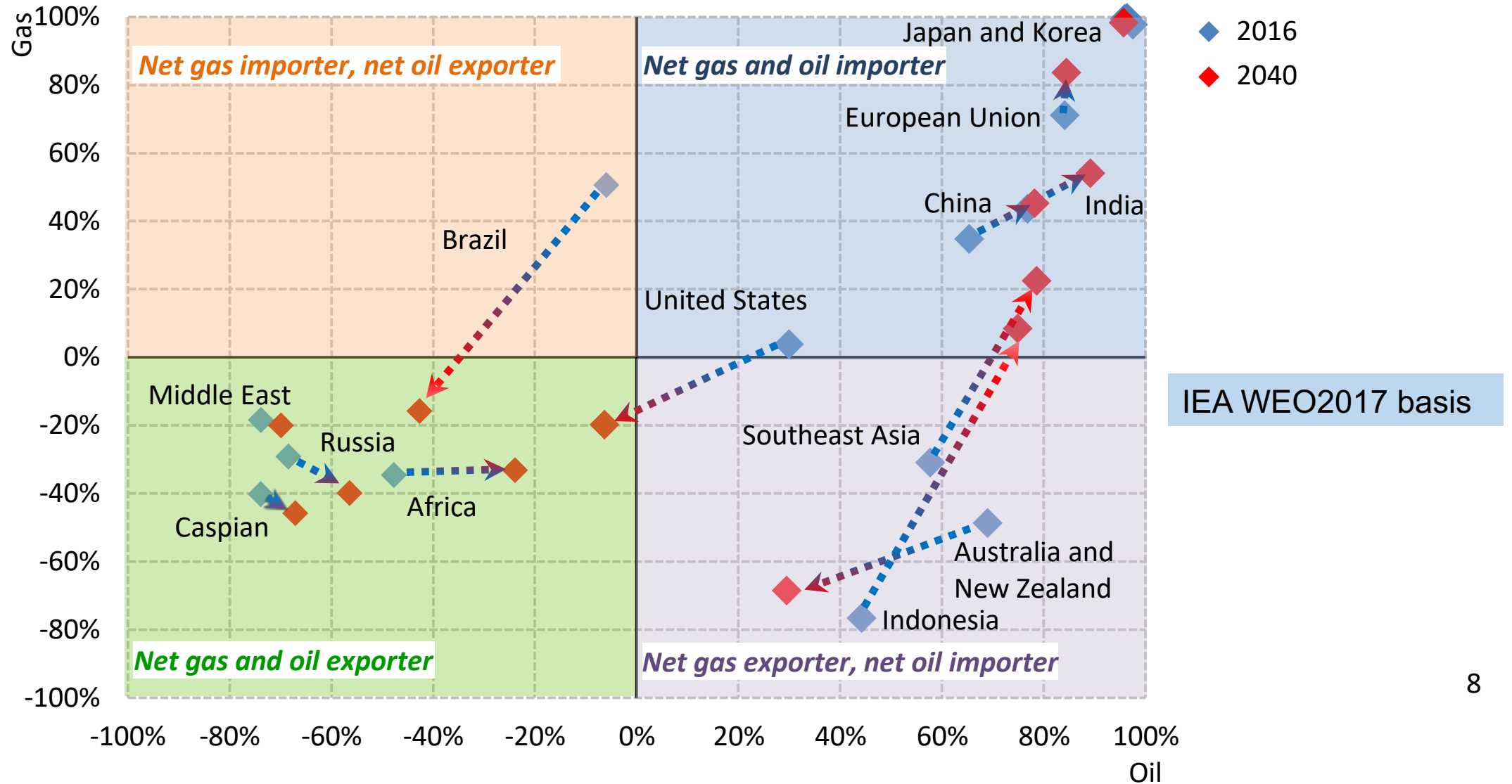
BlackRock pushes companies to adopt 2050 net zero emissions goal

World's largest asset manager warns it may drop climate laggards from active portfolios



BlackRock chief executive Larry Fink said a 'tectonic shift' in the investment landscape was happening faster than he expected © Bloomberg

Energy Independence: The US joins Russia and Saudi as Fossil fuel leaders while China and Europe aim at Renewable Energy Independence. How can Japan and Korea survive?



A Golden Age of Natural Gas

North America's Shale Gas revolution + Japan & Korea contribute by LNG trade.

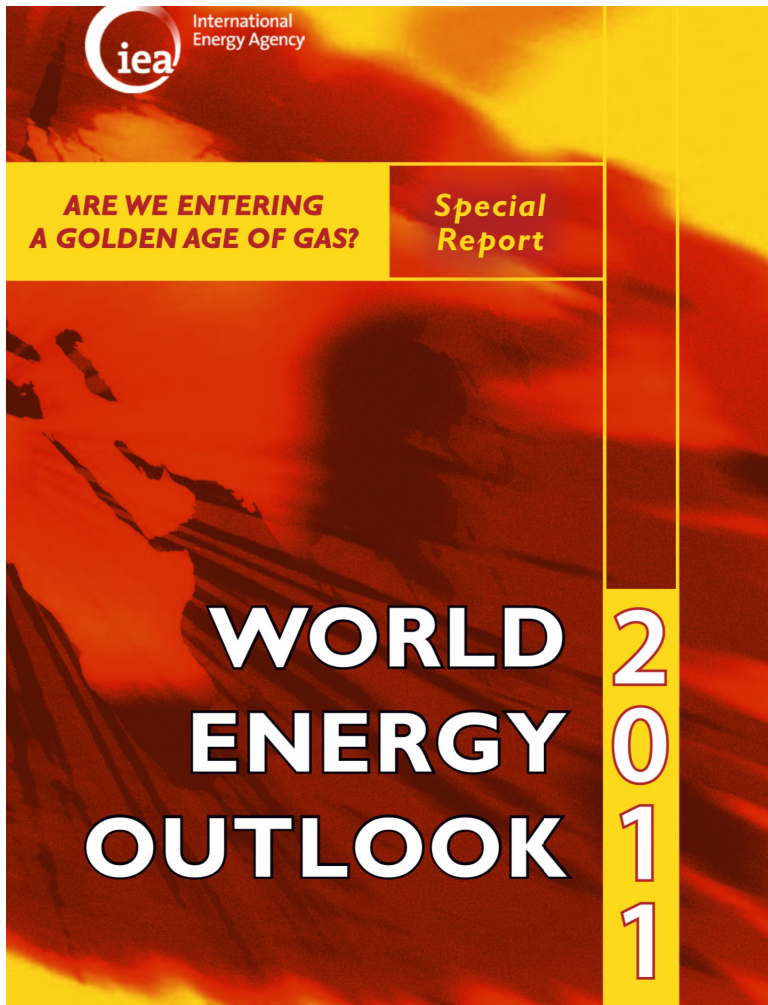
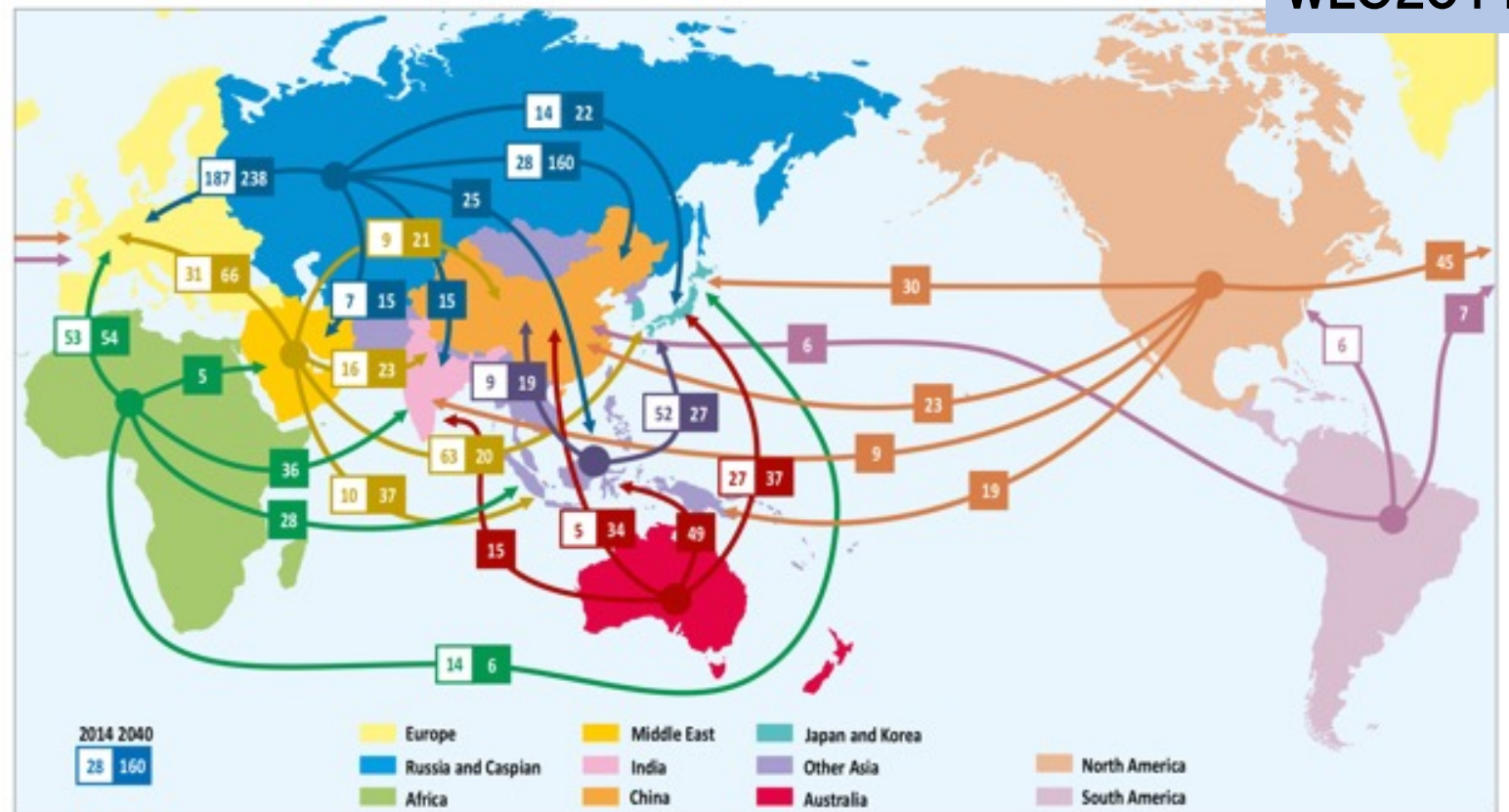


Figure 4.17 Selected global gas trade flows in the New Policies Scenario (bcm)

WEO2011



This map is without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

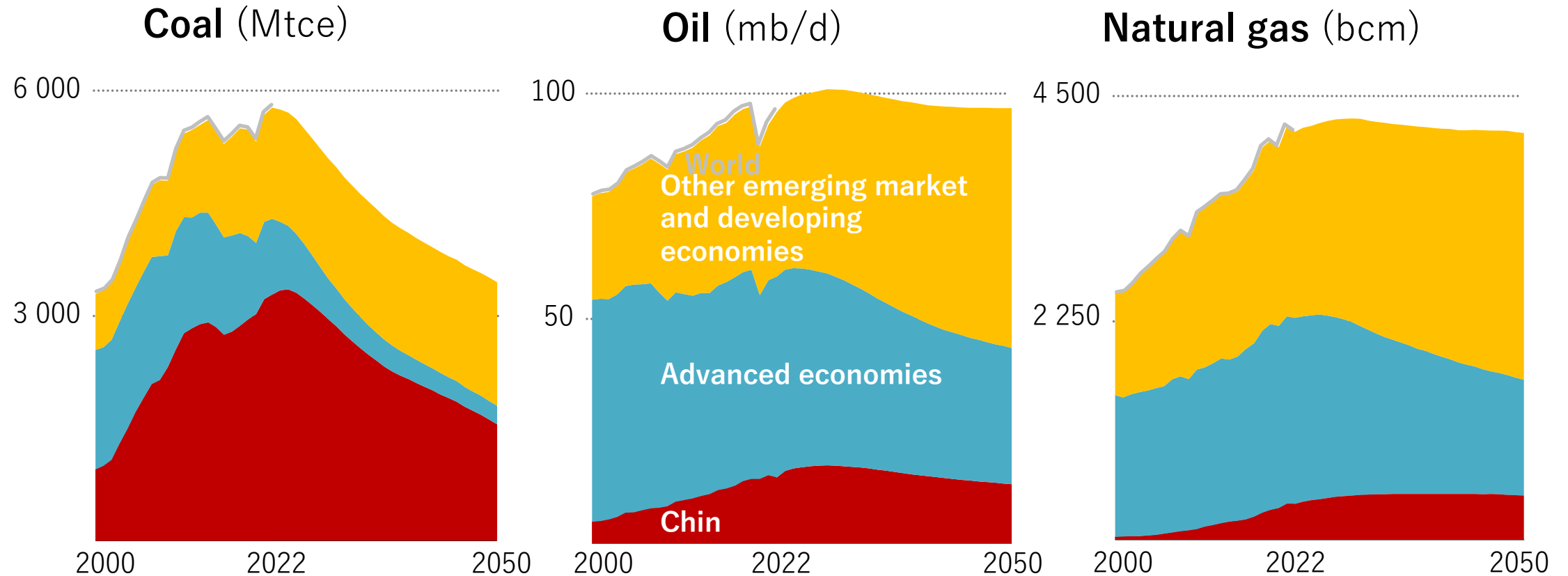
The strong import growth in Asia underpins a fundamental shift in trade flows away from the Atlantic basin to the Asia-Pacific region

On track for a peak in all fossil fuels before 2030

WEO2023

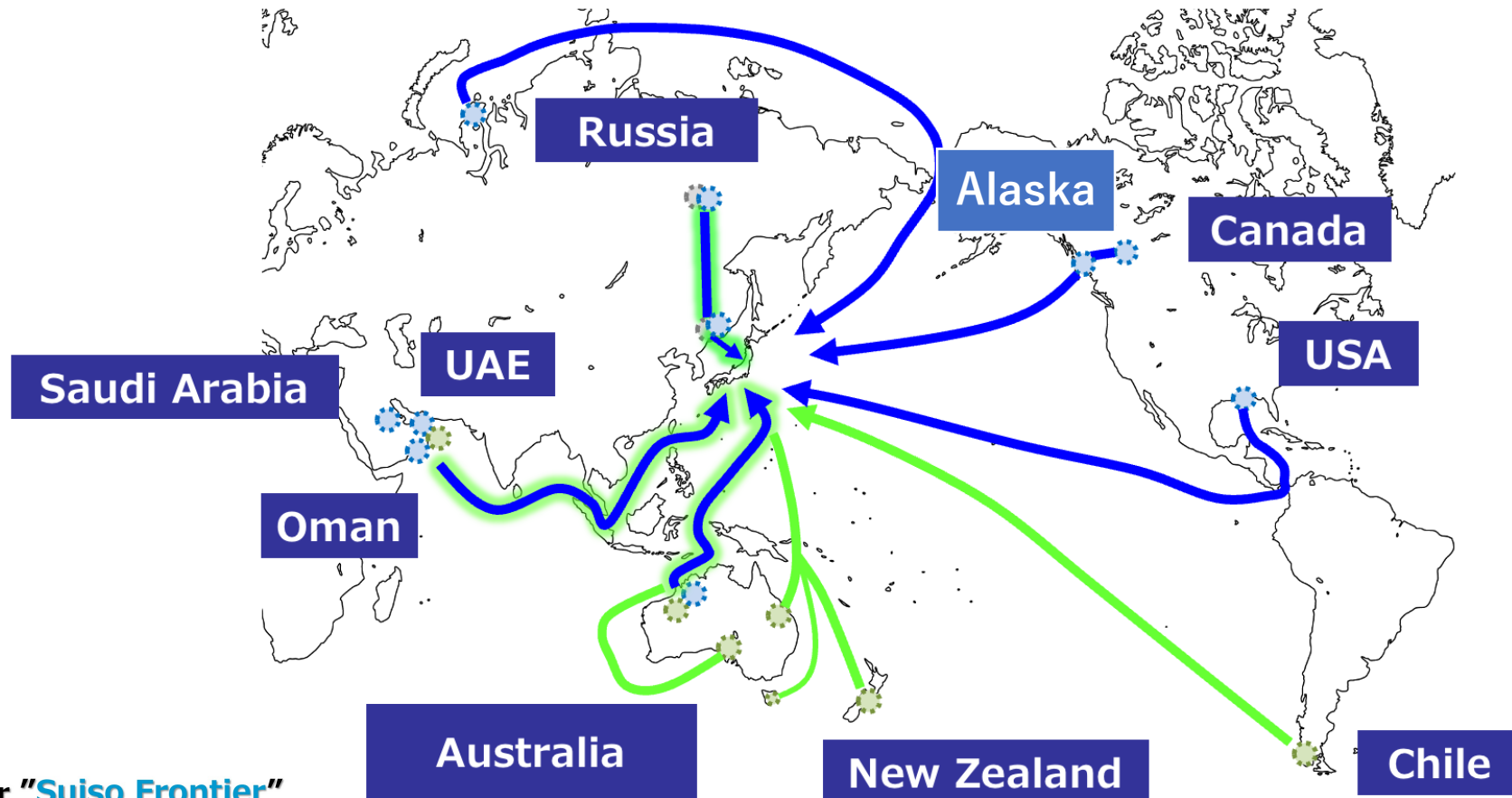


Fossil fuel demand in the Stated Policies Scenario (STEPS)



Golden Age of Natural Gas is closing but Golden Age of LNG may continue.

A Golden Age of Hydrogen is coming?



➡ Natural Gas (Blue)

➡ Renewables (Green)

CLEAN FUEL AMMONIA ASSOCIATION

Liquefied Hydrogen Carrier "Suiso Frontier"

Launch ceremony (11 December 2019) at KHI Kobe Shipyard



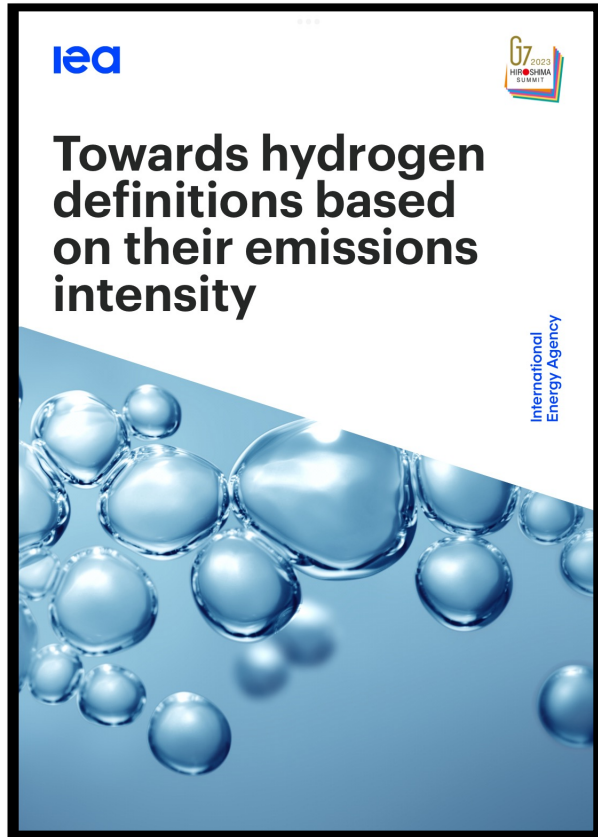
Cargo Tank Installation (7 March 2020) at KHI Harima Works



AHEAD ADVANCED HYDROGEN ENERGY CHAIN ASSOCIATION FOR TECHNOLOGY DEVELOPMENT



Green or Blue Hydrogen? Which is Cleaner?

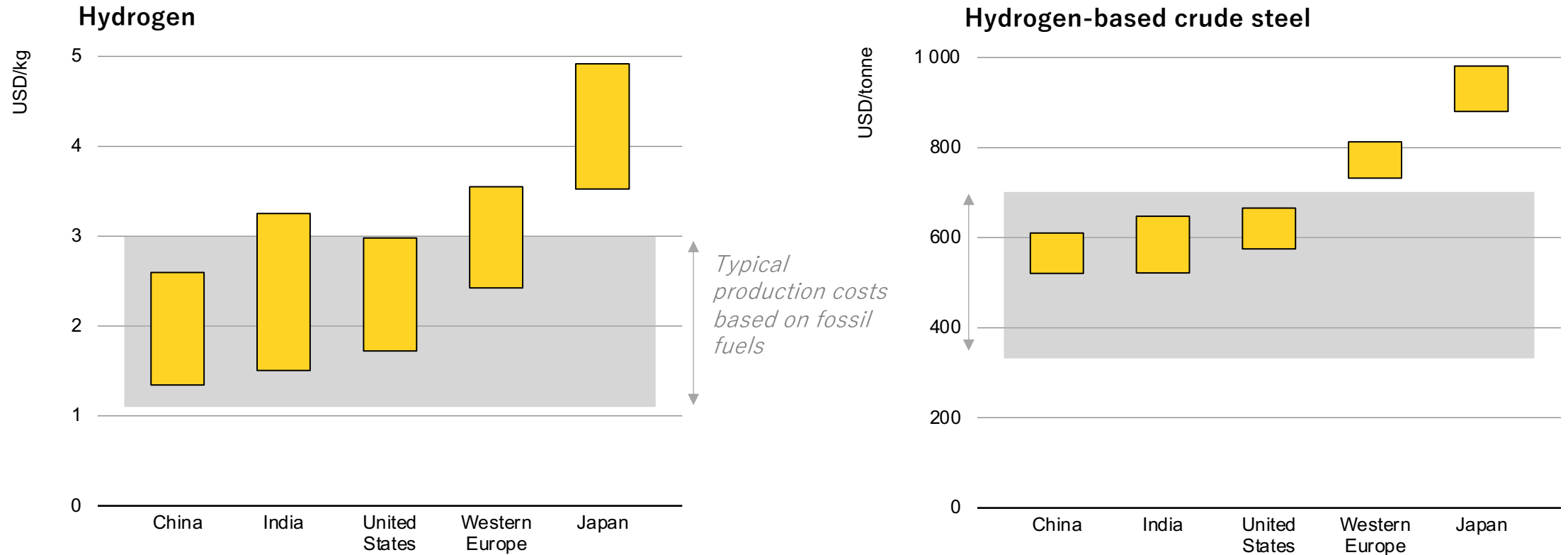


- Global hydrogen production is today almost completely based on the use of unabated fossil fuels, resulting in an emissions intensity of 12-13 kg CO₂-eq/kg H₂.
- In the Announced Pledges Scenario (APS), the global average emissions intensity falls below 3 kg CO₂-eq/kg H₂ by 2050,
- while in the Net Zero by 2050 Scenario the intensity reaches levels of under 1 kg CO₂-eq/kg H₂ by 2050.
- Japan picks up 3.4 kg-CO₂e/kg-H₂g as low carbon H₂

We must be color blind. Low carbon Hydrogen should be judged by carbon intensity.

Competitiveness is a key consideration for industrial strategies

Production costs using electrolysis and variable renewables under announced climate pledges, 2030

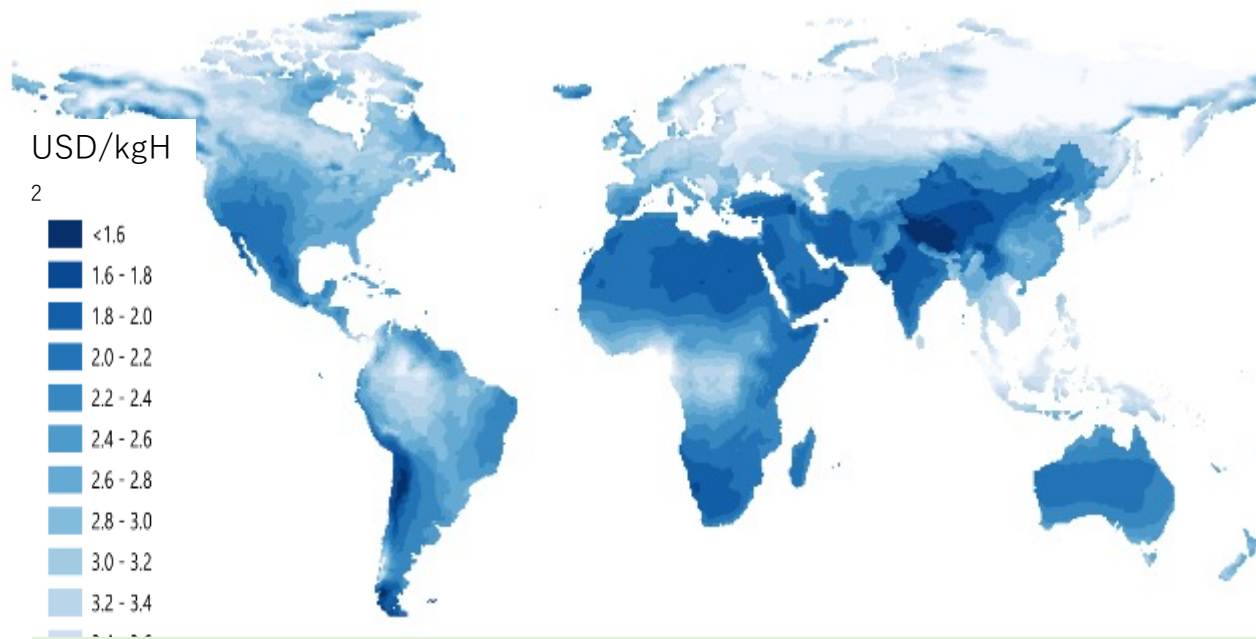


Climate goals and innovation policy are driving new project announcements for energy intensive commodities, but persistent cost competitiveness gaps indicate the need for strategic partnerships and international collaboration.

Relocation of industries for Renewables and Low Carbon Hydrogen

Green H2 from Renewable electricity and Electrolysis of Water

Long-term hydrogen production costs from solar & wind systems



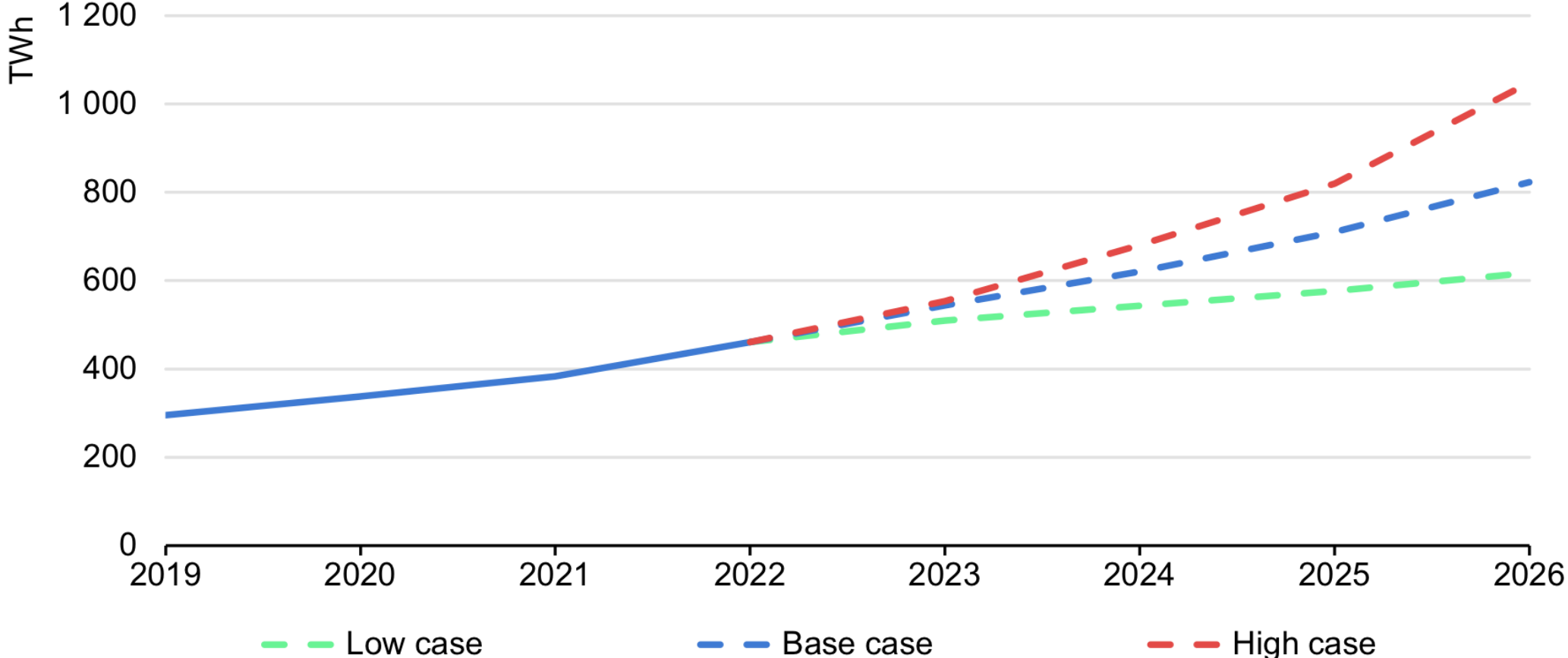
Blue H2 from SMR of fossil fuels with CCS

3.0 The Status of CCS 2020
3.1 Global CCS Facilities Update and Trends



Future investment in energy-intensive industries is likely to favour regions with outstanding clean electricity and CCUS potential in particular. (WEO2022)

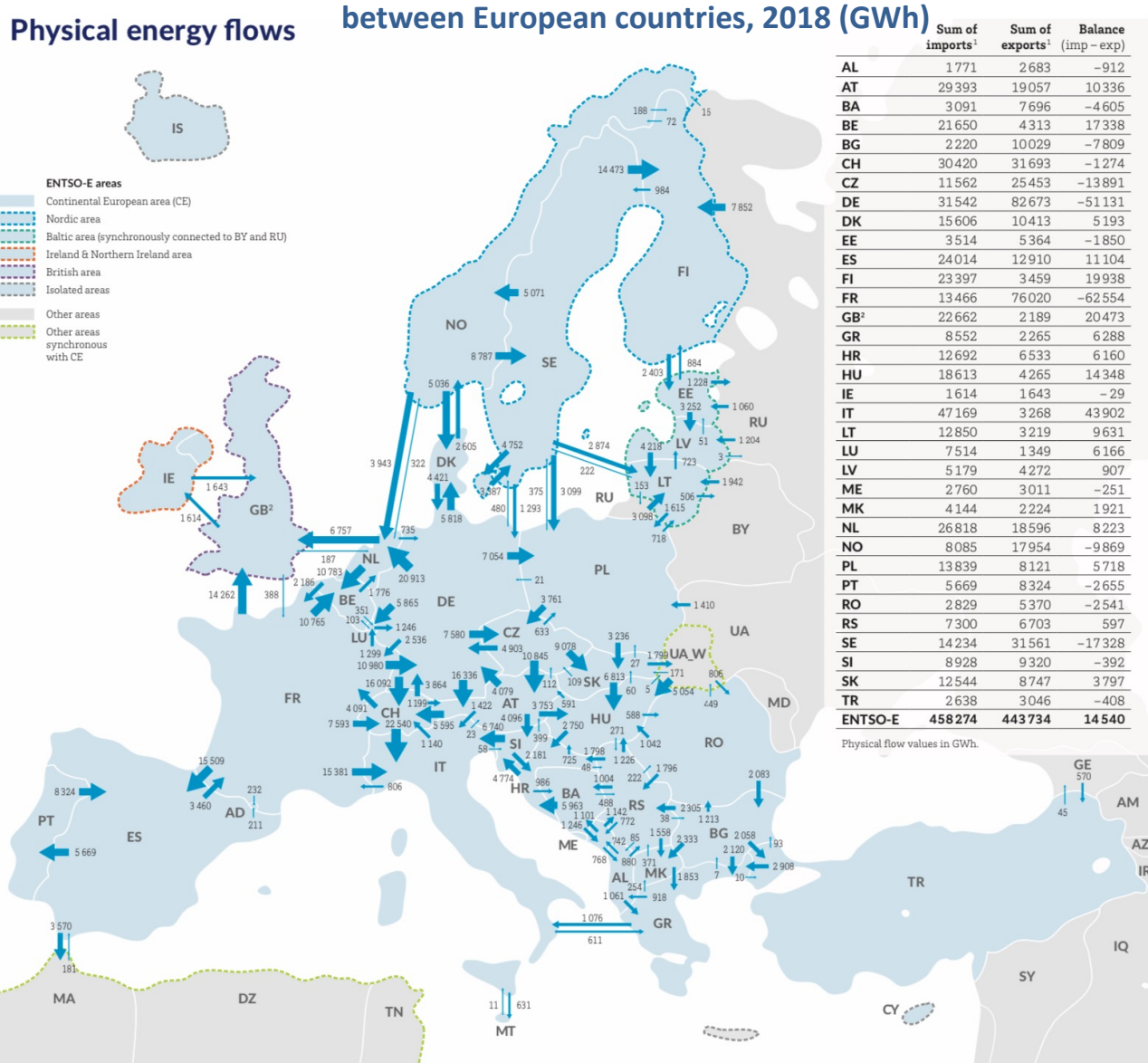
Global electricity demand from data centres, AI, and cryptocurrencies, 2019-2026



Electricity 2024 IEA

Notes: Includes traditional data centres, dedicated AI data centres, and cryptocurrency consumption; excludes demand from data transmission networks. The base case scenario has been used in the overall forecast in this report. Low and high case scenarios reflect the uncertainties in the pace of deployment and efficiency gains amid future technological developments.

Grid Connectivity: European Energy Security & Sustainability



¹ Consolidated yearly values might differ from detailed flow data from the ENTSO-E database due to export consolidation taking into account national statistical resources.

² All data with the country code GB represents monthly statistical data as sum of England, Northern Ireland, Scotland and Wales.

Connecting MENA and Europe: "Desertec" as visionary "Energy for Peace"



EU's the European Hydrogen Backbone (Pipeline)

2040 A European hydrogen highway

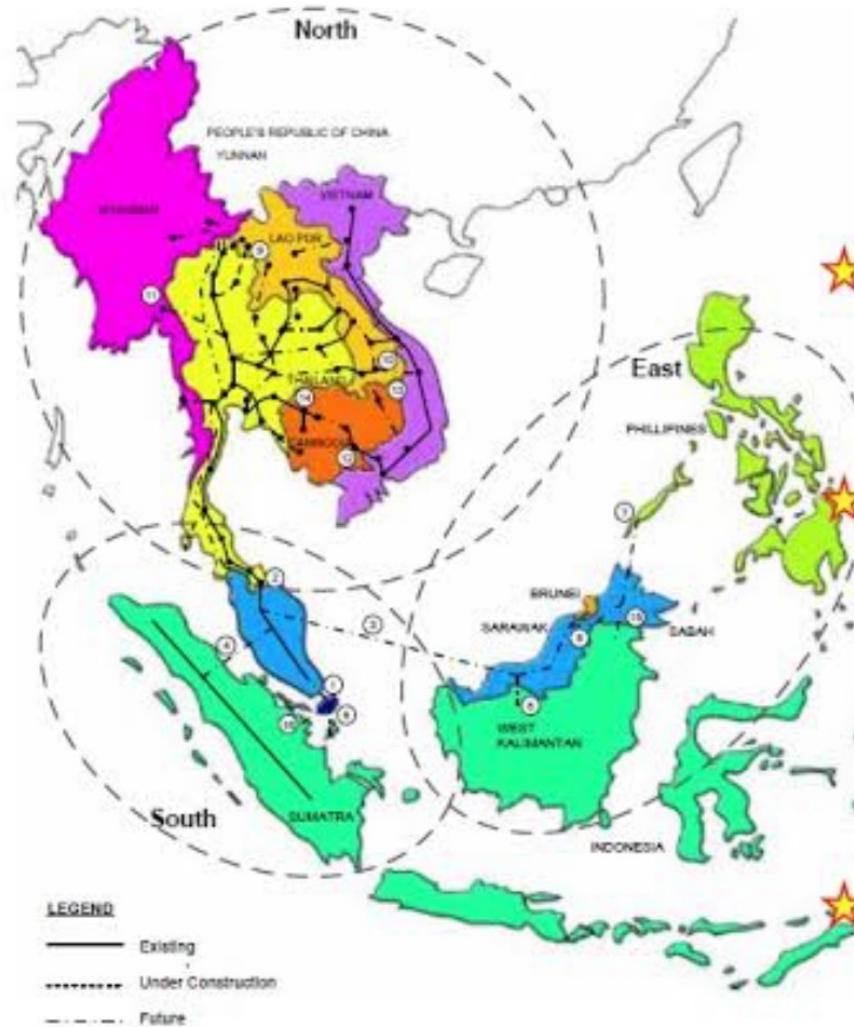
A pan-EU backbone stretching into all directions, with a length of almost 23,000 km



Important developments and corridors

- 1 A core, pan-EU hydrogen infrastructure of almost 23,000 km, with large corridors connecting most of Western Europe with valuable extensions into Central and Eastern Europe.
- 2 The backbone will consist of 75% retrofitted pipelines, with diameters ranging from 24-48 inch, providing 3-13 GW_{LHV} transport capacity per pipeline. Combined with a fit-for-purpose compression system, the backbone should be able to meet currently expected annual hydrogen flows in Europe by 2040.¹
- 3 The EHB enables connection to global hydrogen flows, including North Africa, the North Sea (UK and Norway), possibly Ukraine and Russia
- 4 The 2040 backbone can be considered as a critical milestone, but not a final product. It represents a foundational network upon which further developments can be built beyond 2040

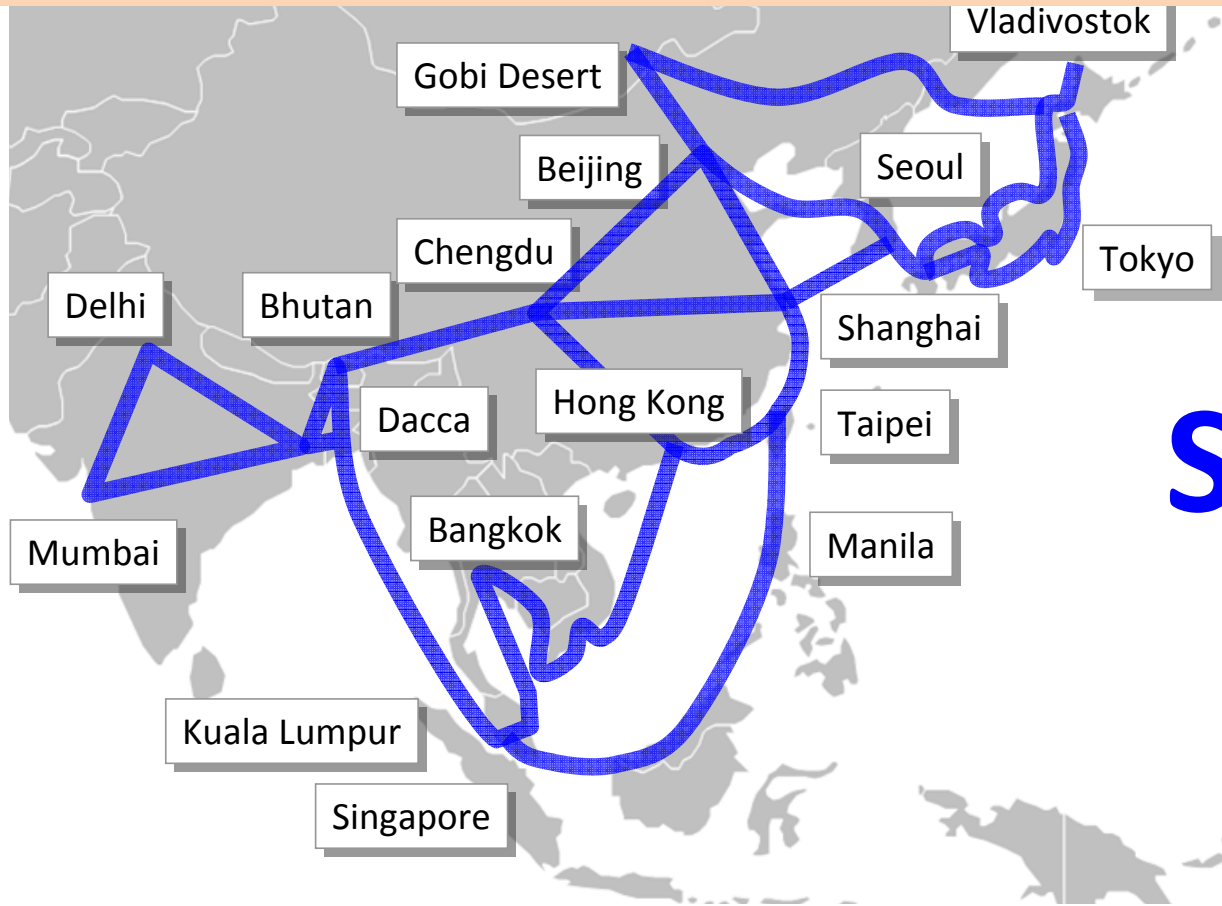
ASEAN Power Grid



- | | Earliest COD |
|--|--------------|
| 1) P.Malaysia - Singapore (New) | post 2020 |
| 2) Thailand - P.Malaysia | |
| • Sadao - Bukit Keteri | Existing |
| • Khlong Ngae - Gurun | Existing |
| • Su Ngai Kolok - Rantau Panjang | TBC |
| • Khlong Ngae - Gurun (2 nd Phase, 300MW) | TBC |
| 3) Sarawak - P. Malaysia | 2025 |
| 4) P.Malaysia - Sumatra | 2020 |
| 5) Batam - Singapore | 2020 |
| 6) Sarawak - West Kalimantan | 2015 |
| 7) Philippines - Sabah | 2020 |
| 8) Sarawak - Sabah - Brunei | |
| • Sarawak - Sabah | 2020 |
| • Sabah - Brunei | Not Selected |
| • Sarawak - Brunei | 2018 |
| 9) Thailand - Lao PDR | |
| • Roi Et 2 - Nam Theun 2 | Existing |
| • Sakon Nakhon 2 - Thakhek - Then Hinboun (Exp.) | Existing |
| • Mae Moh 3 - Nan - Hong Sa | 2015 |
| • Udon Thani 3 - Nabong (converted to 500KV) | 2019 |
| • Ubon Ratchathani 3 - Pakse - Xe Pian Xe Namnoy | 2019 |
| • Khon Kaen 4 - Loei 2 - Xayaburi | 2019 |
| • Nakhon Phanom - Thakhek | 2015 |
| • Thailand - Lao PDR (New) | 2019-2023 |
| 10) Lao PDR - Vietnam | 2016-TBC |
| 11) Thailand - Myanmar | 2018-2026 |
| 12) Vietnam - Cambodia (New) | TBC |
| 13) Lao PDR - Cambodia | 2017 |
| 14) Thailand - Cambodia (New) | post 2020 |
| 15) East Sabah - East Kalimantan | post 2020 |
| 16) Singapore - Sumatra | post 2020 |
- ★ Priority Projects



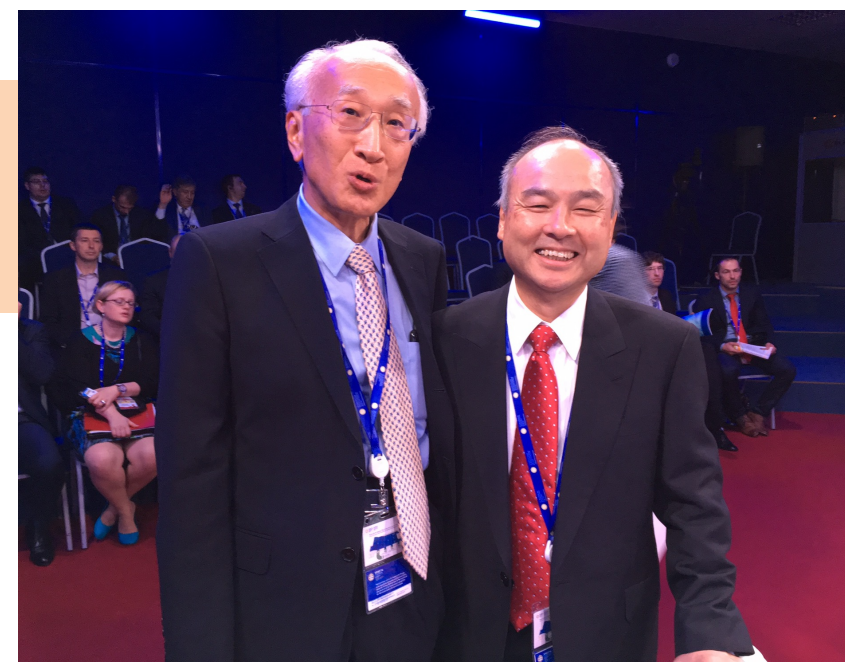
“Energy for Peace in Asia” New Vision by Masayoshi SON of SoftBank



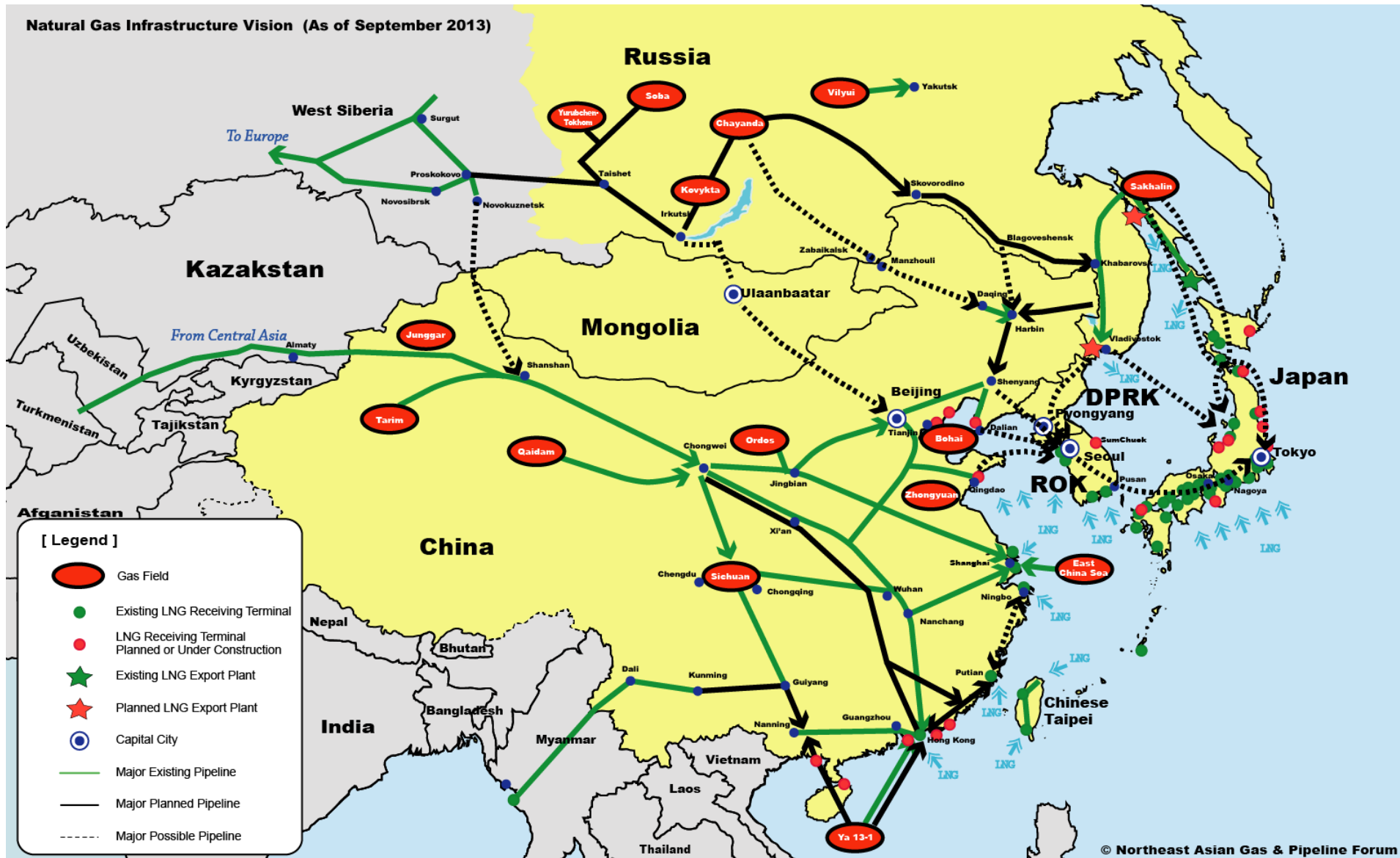
Phase 3

Asia Super Grid

Total 36,000km

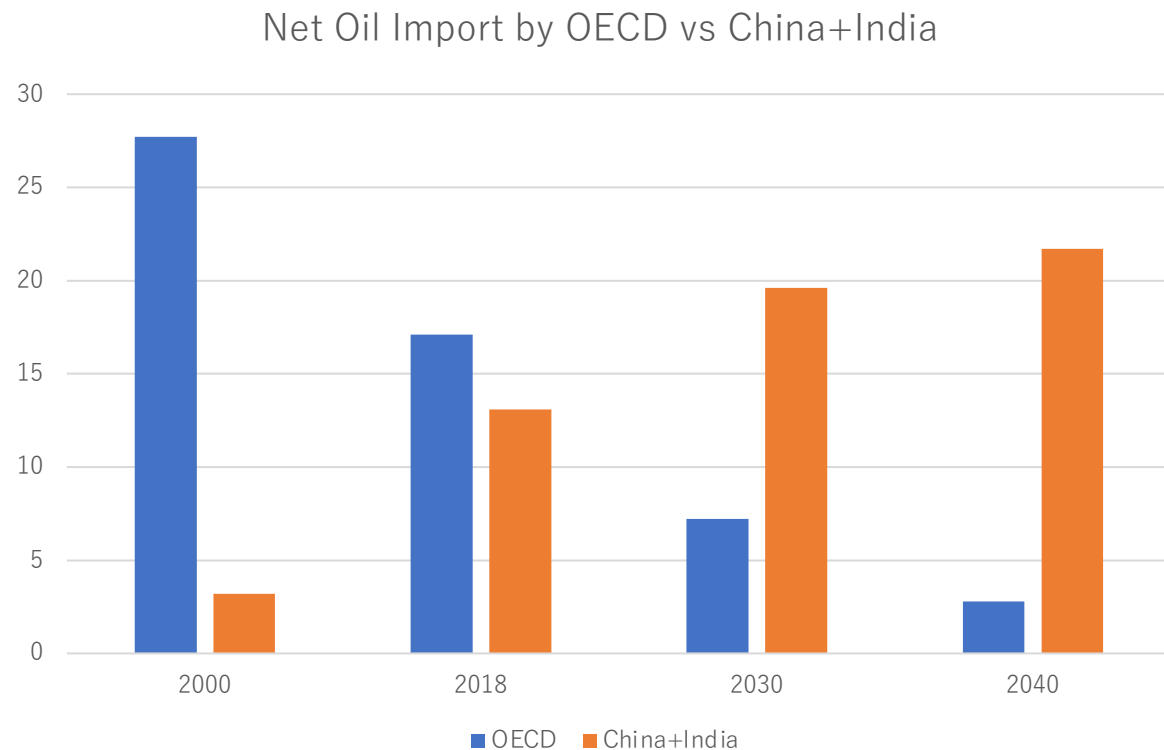


Dr. Masaru HIRATA's North East Asia Gas Pipeline Infrastructure Forum (NAGPF)



NAGPF should aim at Asia Clean Energy Platform including Grid Connection and Hydrogen Pipeline

Net oil imports of selected countries in the Stated Policy Scenario (mb/d) WEO2019



Asia becomes the unrivalled centre of the global oil trade as the region draws in a rising share of the available crude.

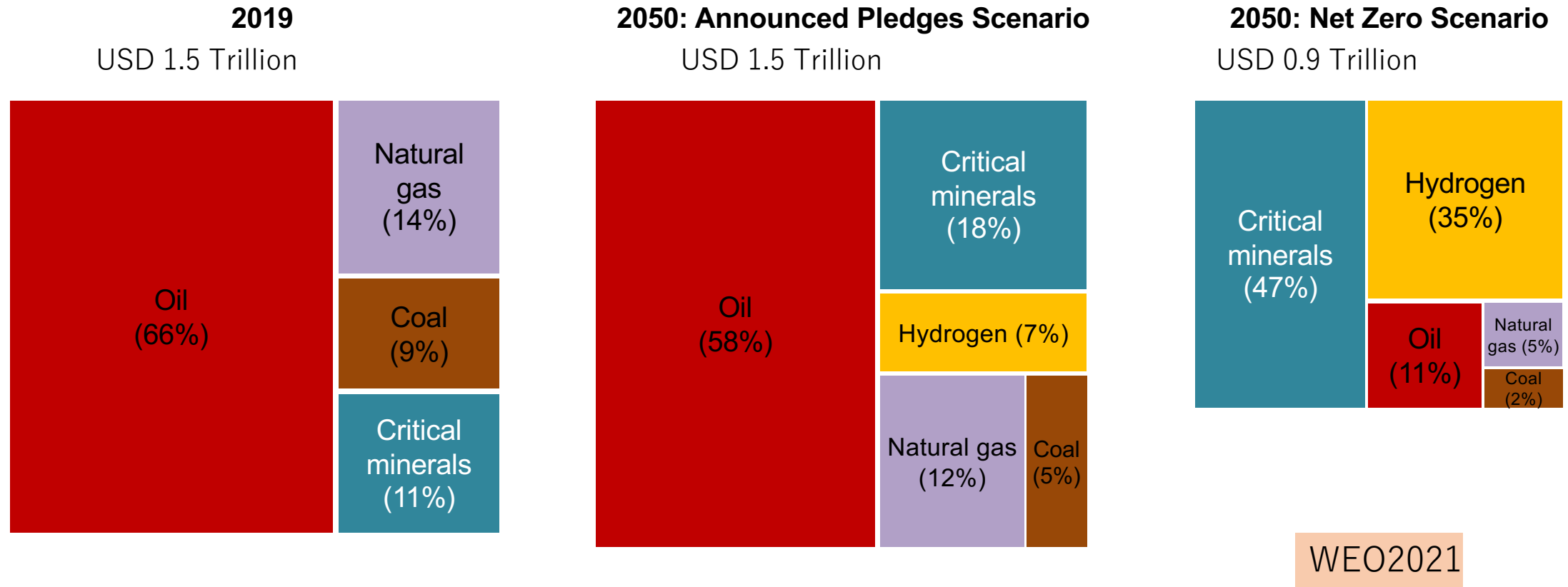
In 2023 India has officially requested to become a full member to the IEA.

Henry Kissinger's Advice: China and India must join the IEA.



MCH/LOHC may replace SPR in the Net Zero Scenario

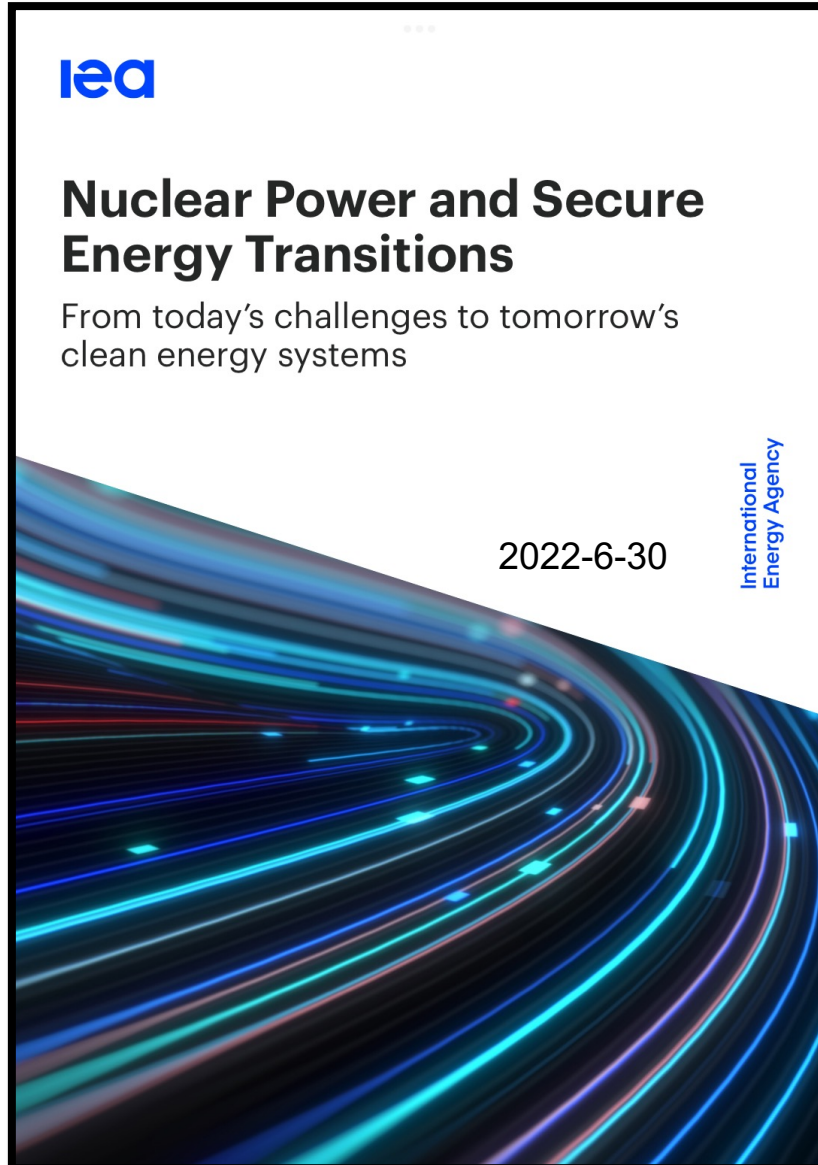
Value of international energy-related resource trade



WEO2021

In all scenarios, but especially in the net zero pathway, critical minerals and hydrogen-based fuels are on the rise

Nuclear energy could play an important role in ensuring rapid and secure energy transitions.



- Russia's invasion of Ukraine and disruptions in global energy supply have made governments rethink their energy security strategies, targeting diverse and domestic supplies
- Governments in over 70 countries have committed to achieving net zero emissions, covering three-quarters of global emissions and economic activity
- Peaking CO₂ emissions this decade and starting a long-term decline is essential to keep the door open to limiting climate change to 1.5 °C
- The policy landscape is changing, opening up opportunities for nuclear to make a comeback

PM Kishida tried to restart 17 reactors in 2023.

Restarted
12 reactors

In Operation : 11 reactors
Suspended : 0 reactors (Date of Restart)

Passed NRA Review
for the Permission for Changes
in Reactor Installation
5 reactors

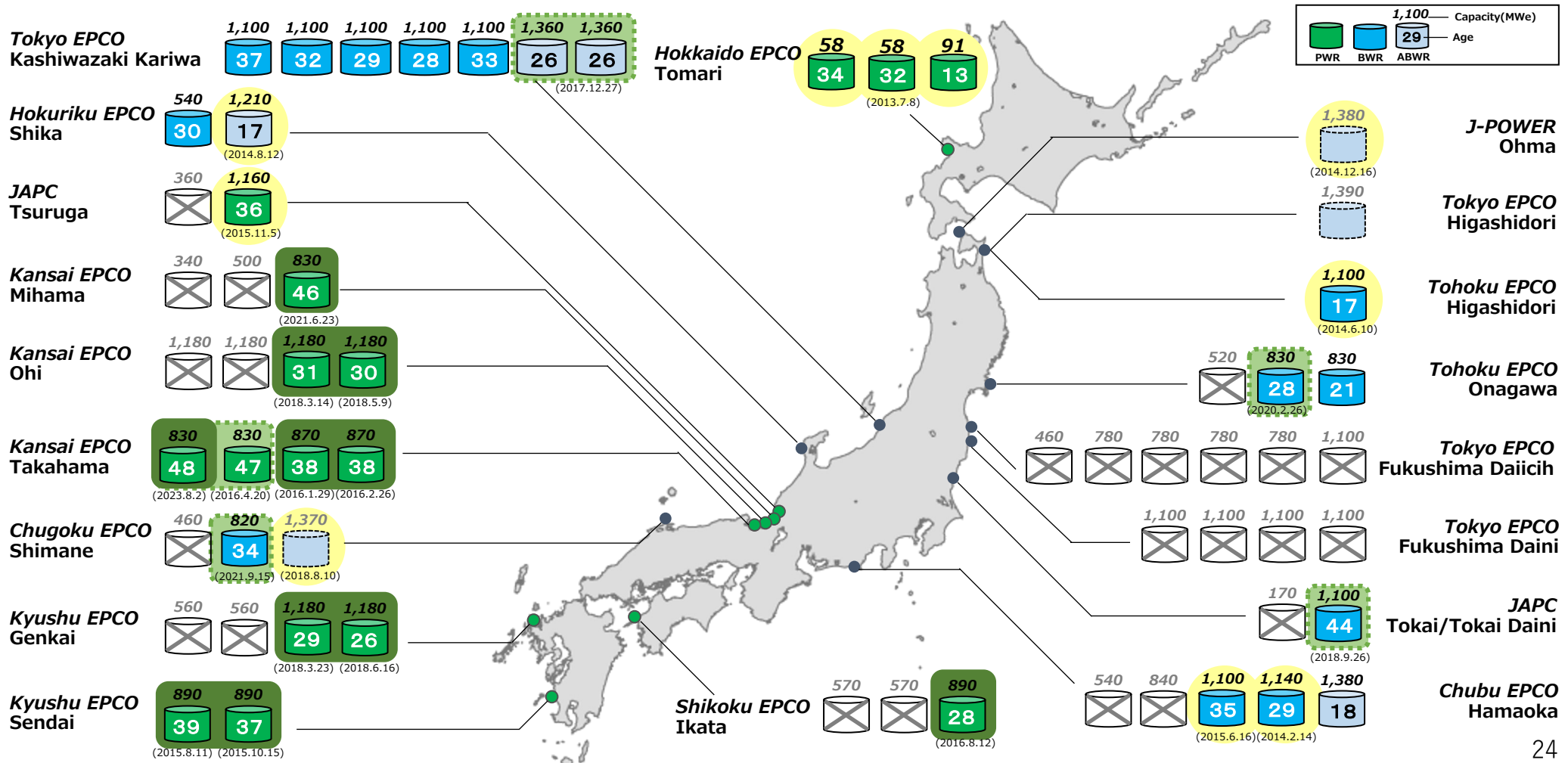
(Date of Approval)

Under NRA Review
10 reactors

(Date of Application)

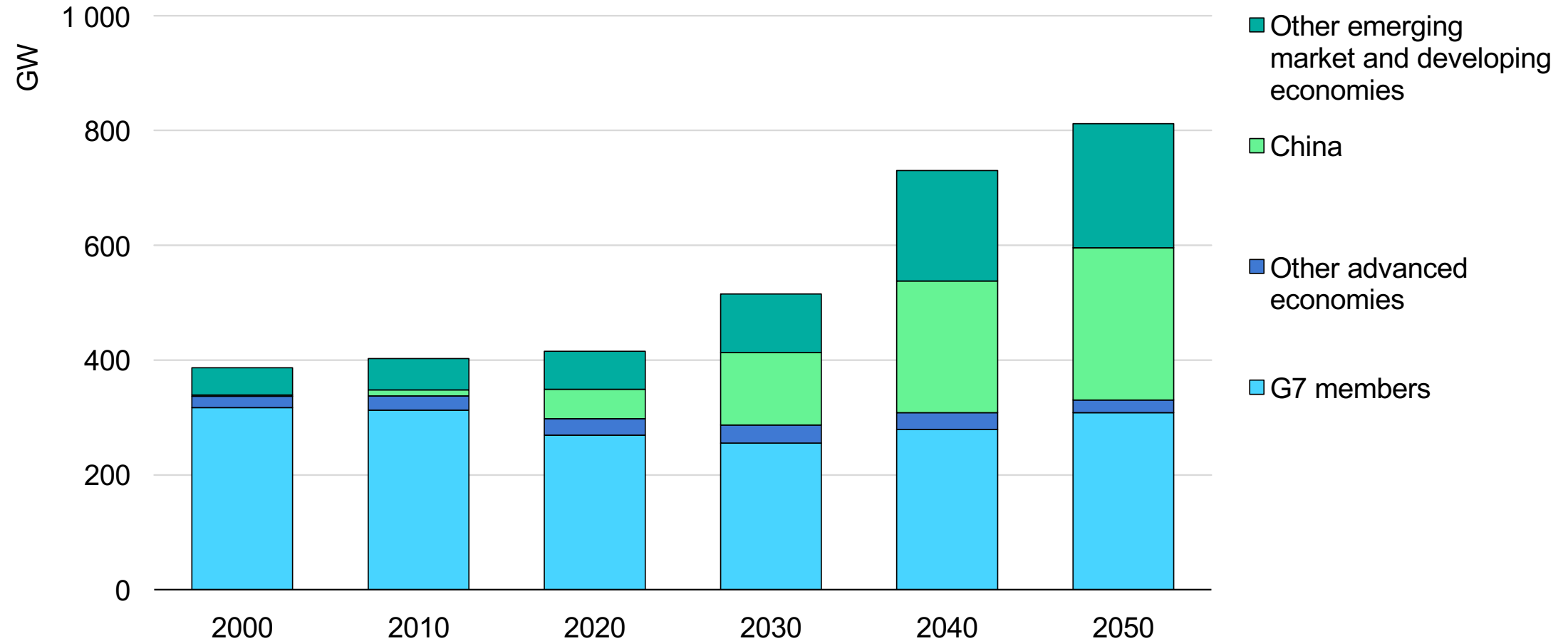
Not yet Applied
9 reactors

Decommission
24 reactors



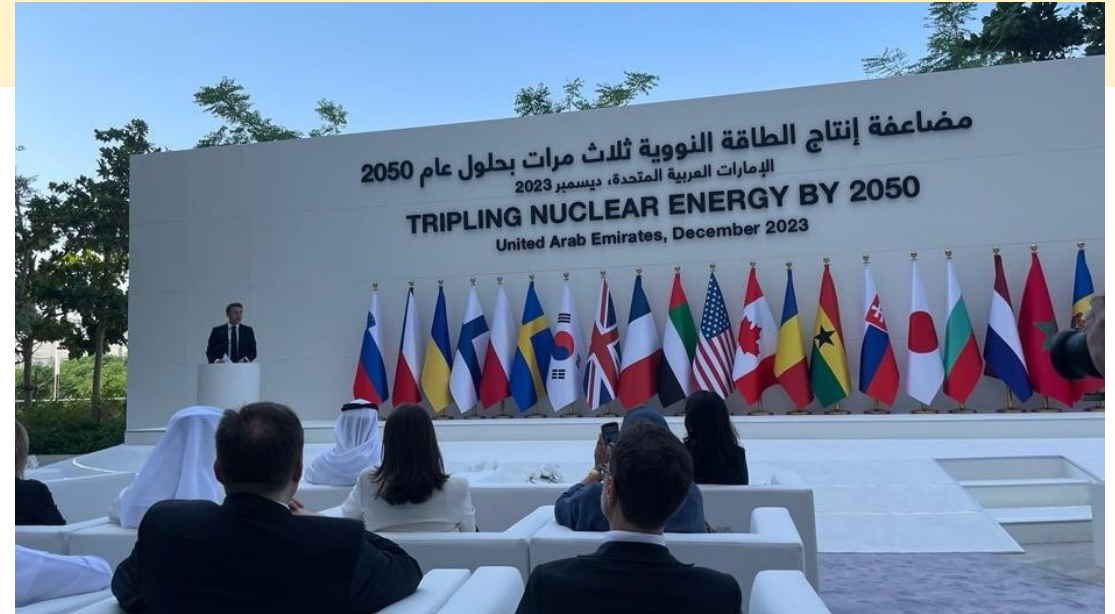
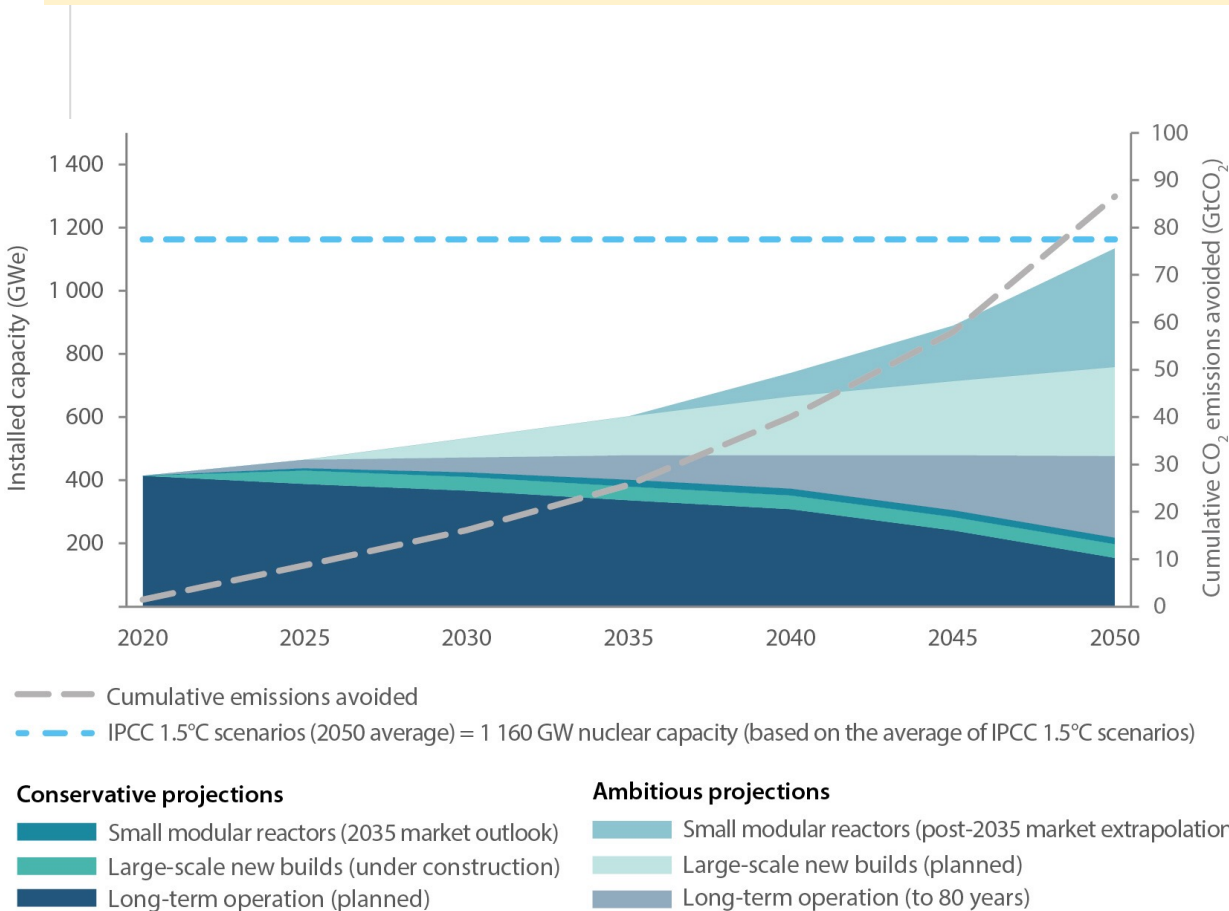
Nuclear capacity **doubles** to 2050 on the path to Net Zero

World nuclear power capacity in the NZE



To complement renewables in the NZE, the nuclear industry must deliver new projects on time and on budget, with projects in advanced economies needing to cut costs by almost half from ongoing projects.

At COP28, Countries Launch Declaration to Triple Nuclear Energy Capacity by 2050, Recognizing the Key Role of Nuclear Energy in Reaching Net Zero

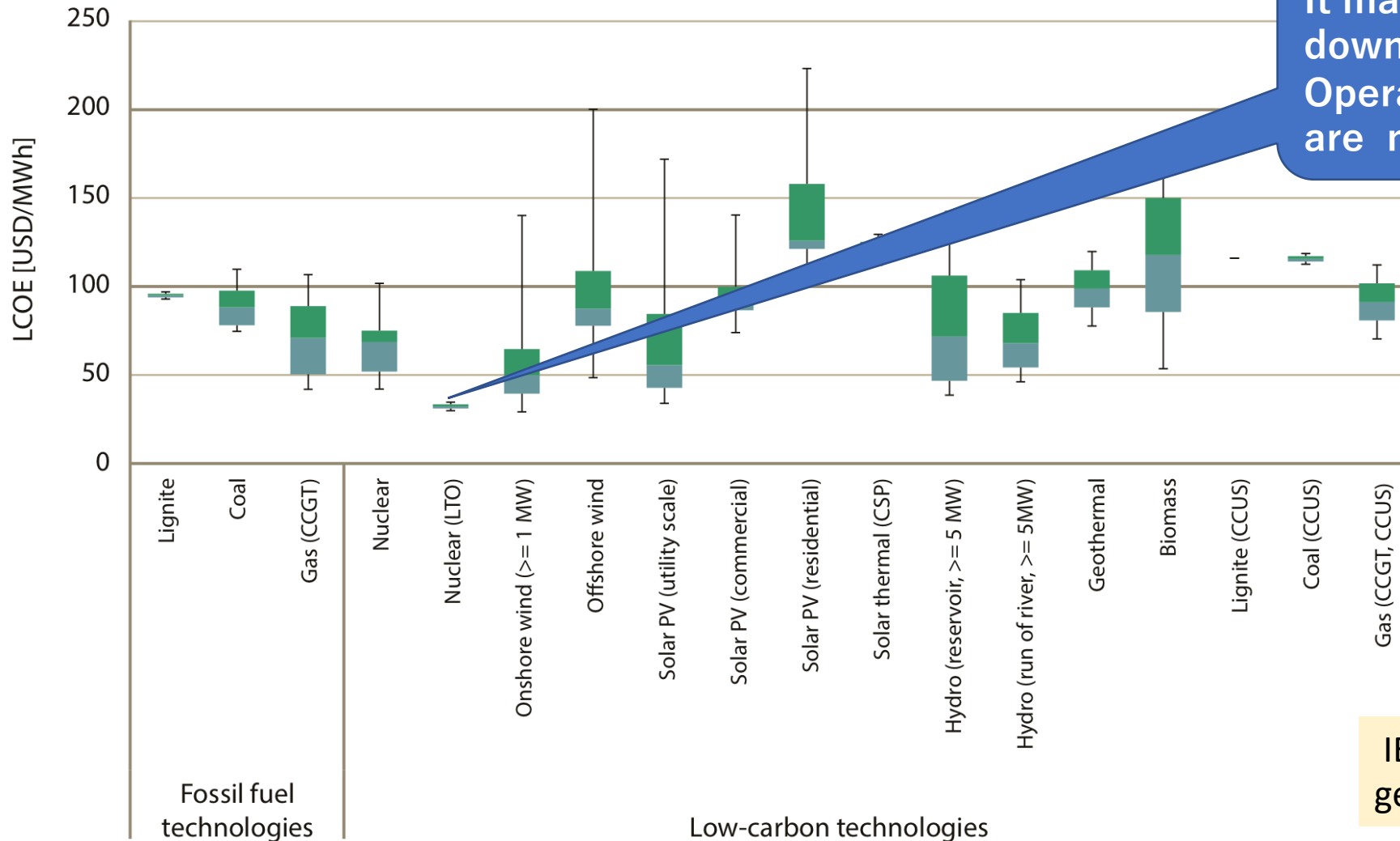


- President of the French Republic Emmanuel Macron and United States Special Presidential Envoy for Climate John Kerry announced that 20 countries have launched the 'Declaration to Triple Nuclear Energy by 2050' at the 28th United Nations Climate Change Conference or Conference of the Parties of the UNFCCC (COP28).
- Endorsing countries include the United States, Bulgaria, Canada, Czech Republic, Finland, France, Ghana, Hungary, Japan, Republic of Korea, Moldova, Mongolia, Morocco, Netherlands, Poland, Romania, Slovakia, Slovenia, Sweden, Ukraine, United Arab Emirates, and United Kingdom.
- Those countries that choose this option will need to work in concert to address issues such as affordable financing, enhanced supply chains and the need for a skilled workforce if success is to be in reach.

Nuclear Energy Agency (NEA)

Cost of Nuclear Power relative to other power sources

Figure ES1: LCOE by technology

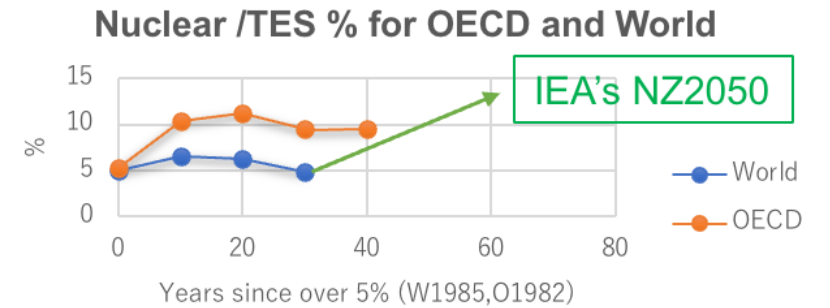
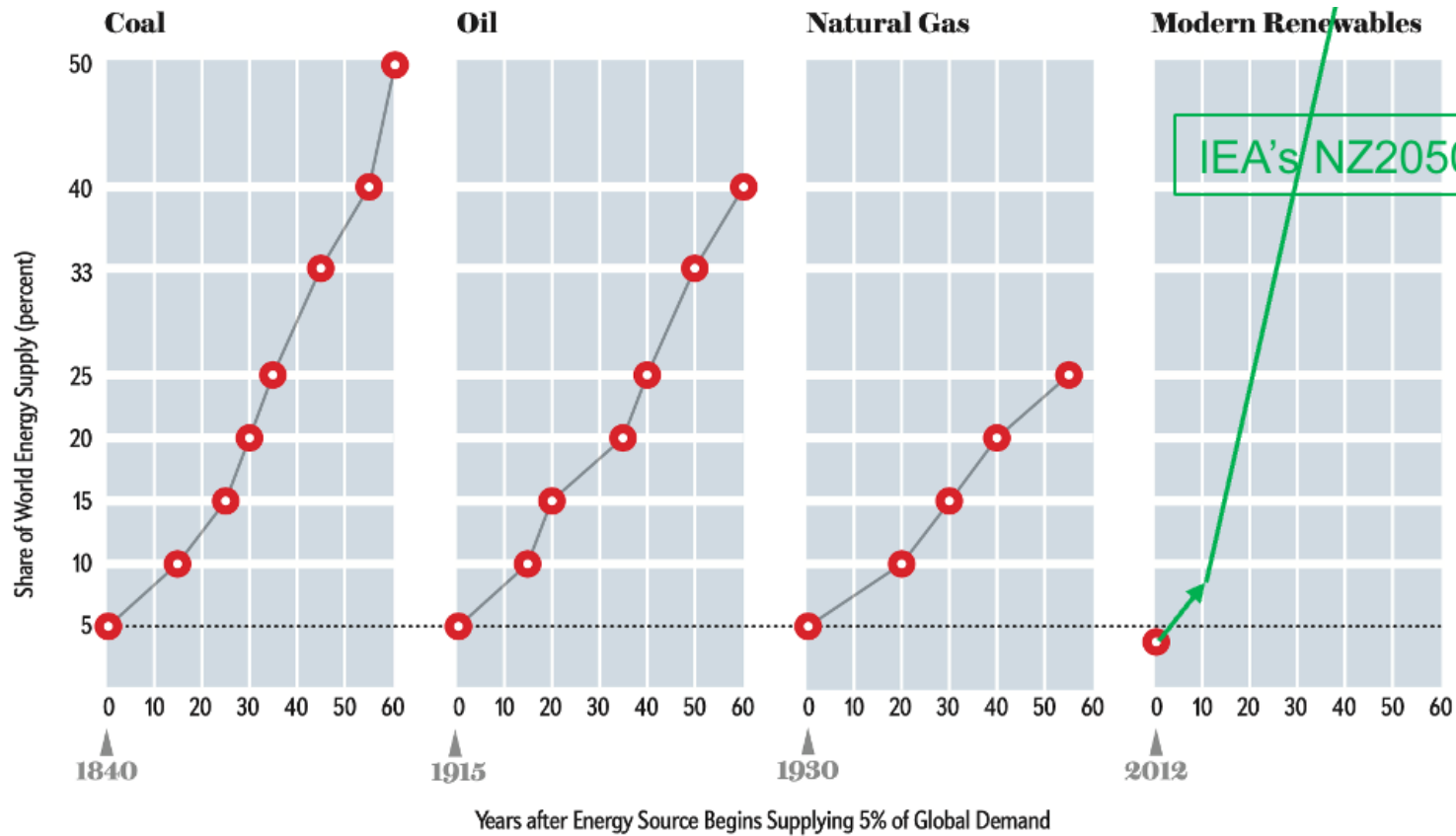


It makes sense to restart shut downed plants because Operating Nuclear power plants are most cost competitive

IEA&NEA OECD, 'Projected cost of generating electricity 2020 edition

Note: Values at 7% discount rate. Box plots indicate maximum, median and minimum values. The boxes indicate the central 50% of values, i.e. the second and the third quartile.

Large Light Water Reactor (LWR) Paradigm is a “Successful Failure” (Vaclav Smil)



Vaclav Smil vs IEA's Net Zero by 2050

Innovation for Cool Earth Forum (ICEF) 2022 Nuclear Session

Agreed on Four conditions for
“Sustainable” Nuclear Power.

- (1) **SMR with passive safety**
- (2) **Radioactive Waste Disposal**
- (3) **Proliferation Resistance**
- (4) **Socio-Political Sustainability**

Ambassador Emanuel of the US
joined as a keynote speaker.
He stressed importance of US-
Japan cooperation on nuclear.

I told him IFR of Argonne
National Lab is the sustainable
nuclear model and should be
applied to the Fukushima
meltdown fuel debris solution.



Interim Recommendations of CIGS Study Group on Next Generation Nuclear Energy Utilization “Facilitating Revitalization of Nuclear Energy in Japan”

Nuclear Power Generation in the Future

We believe that nuclear power is indispensable to form an energy mix in Japan. Past experiences tell us that, in the future, Japan must take a completely different approach from the conventional path to meet the following three conditions.

1. Risk Minimization

Since the risk in nuclear power generation cannot be made zero, the idea of risk minimization is quite important. Even in case of a nuclear accident, smaller scale nuclear reactors with smaller fuel inventories could reduce the area affected, such as emergency evacuation zones. It is also necessary to develop technology for enhancing passive safety, so that the operation of a reactor can be stopped as safely and quickly as possible. As part of this process, if the design of the reactor can be made as locally acceptable as possible, it will help to gain the understanding of the local community where the reactor is located and encourage the participation of local residents.

2. More Realistic Method of High-level Radioactive Waste Treatment

It is a difficult issue to determine site for high level radioactive waste disposal in all countries. Because such waste must be stored in geological disposal facilities and kept isolated from the human living environment for several hundred thousand years. On the other hand, pyroprocessing technology for metal fuel cycle succeeded in shortening the isolation period of radioactive waste to 300 years by extracting plutonium and minor actinides (MA). This technology was tested using simulated fuel debris which had the same elements as TMI-2 fuel debris. Although this debris could not be reprocessed by the conventional reprocessing method, it was successfully reprocessed when this technology was applied. This means that both spent fuel that has been exposed to sea water and fuel debris that should be retrieved in the future from damaged reactors of Fukushima Daiichi Nuclear Power Plant could be reduced to radioactive substances, which merely requires isolation for 300 years. It should be noticed that the problems associated with the use of the light-water reactor system may be able to be skirted around when this technology is introduced in the future.

3. Contribution to Nuclear Non-proliferation

Besides the problem of high-level radioactive waste disposal, the light-water reactor system also poses difficulties when viewed from the angle of nuclear non-proliferation. The uranium enrichment technology that is essential for fabricating fuel of light-water reactors, together with spent fuel reprocessing technology, can be easily applied to development of nuclear weapons. Therefore, future nuclear power generation systems must be as unlikely as possible to produce materials that could lead to nuclear proliferation. Also, it will be necessary to review the management system of nuclear substances in line with the development of novel technologies and the associated nuclear proliferation risks.

For the purpose, the improvements of environment such as **(1) political leadership, (2) Obligation of the government, (3) Residents’ Participation and Interactive Communication, and (4) Reconstruction of Fukushima and Peaceful Uses of Nuclear Energy,** are necessary.

Members

Nobuo Tanaka (Chair)
Tomoko Murakami
Momoko Nagasaki
Reiko Fujita
Maiko Takeuchi
Atsuko Kanehara
Junko Sugaya
Mao Kurahashi
Mina Sekiguchi
Minako Fujiie
Akiko Iwata (Observer)
Chieko Nagayama
(Observer)
Eri Nakatani (Observer)
Yuki Hasegawa
(Observer)
https://cigs.cano.n/en/article/20221107_7096.html



- Flexibility: *“The ability of nuclear energy generation to economically provide energy services at the time and location they are needed by end-users. These energy services can include both electric and non-electric applications utilizing both traditional and advanced nuclear power plants and integrated systems.”*

- **Operational flexibility:** There is an established body of knowledge surrounding current sources of flexible nuclear energy and its constraints.
- **Product flexibility:** Innovation can increase the flexibility of existing nuclear reactors to produce both clean electricity and beneficial non-electric products.
- **Deployment flexibility:** Advanced reactors will present even more opportunities for flexibility in nuclear systems at various scales.

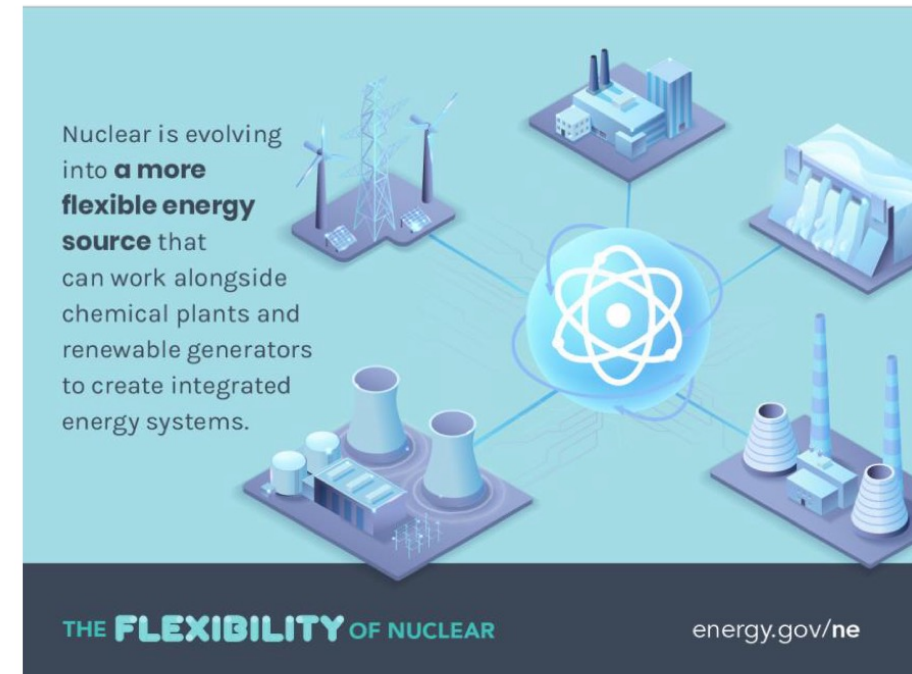
Nuclear flexibility can enable other clean energy generators.

<https://www.nice-future.org/flexible-nuclear-energy-clean-energy-systems>



FLEXIBLE NUCLEAR CAMPAIGN
FOR NUCLEAR-RENEWABLES INTEGRATION

A CAMPAIGN OF THE CLEAN ENERGY MINISTERIAL



Innovation for Cool Earth Forum
7th Annual Meeting -Virtual Forum-

OCTOBER 7-8, 2020

* Concurrent sessions will be held in advance from late September

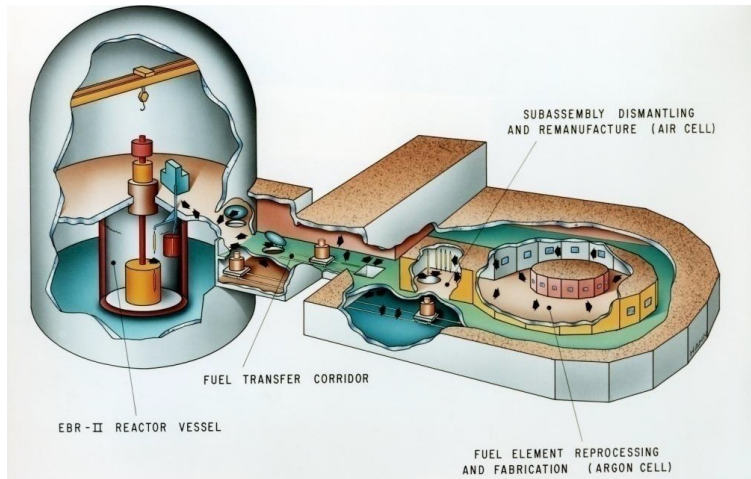
Jill Engel-Cox

Director, Joint Institute for Strategic Energy Analysis
National Renewable Energy Laboratory
Golden, Colorado, USA

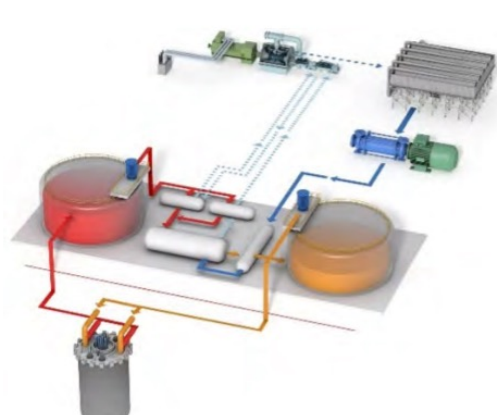


NICE Future
Nuclear Innovation: Clean Energy Future
An Initiative of the Clean Energy Ministerial

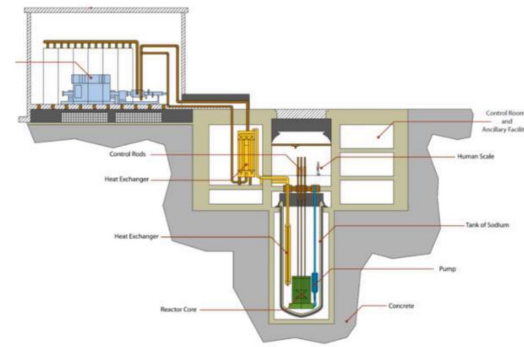
Socio-Politically Sustainable Nuclear Models?



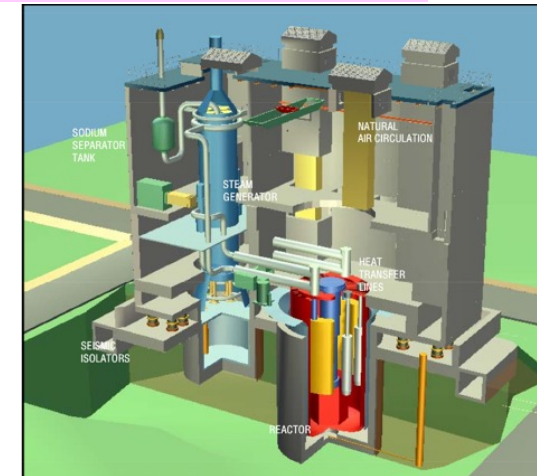
Integral Fast Reactor



Terra Power's Sodium



ARC 1000



GE-Hitachi's PRISM



Rendering of Oklo's Aurora power house
by Gensler

OKLO's Aurora reactor



Dow Chemical and X-energy



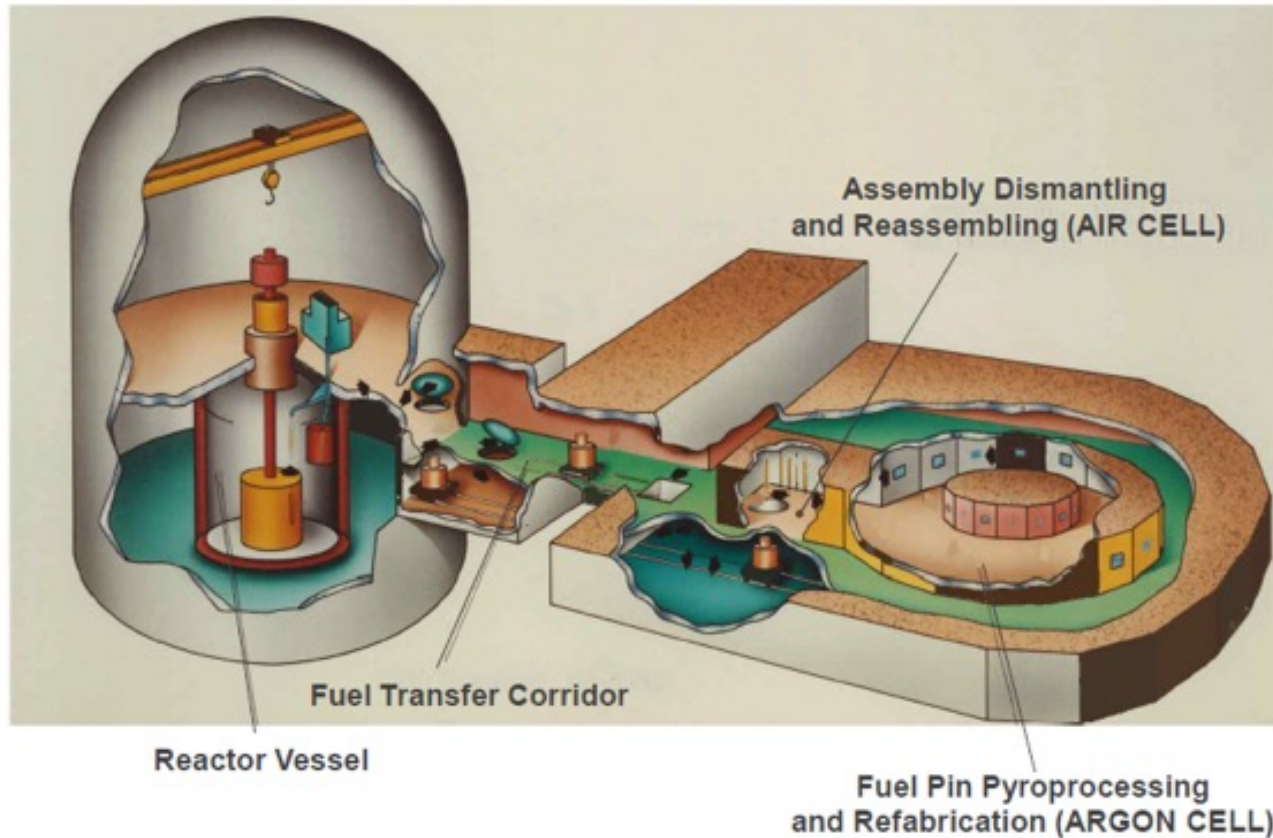
Rolls-Royce UK SMR



Akademik Lomonosov

Time for Safer, Proliferation resistant and Easier Waste Management Paradigm: Integral Fast Reactor (Metallic fuel, Close cycle Fast Reactor) and Pyroprocessing

Pyroprocessing was used to demonstrate the EBR-II fuel cycle closure during 1964-69

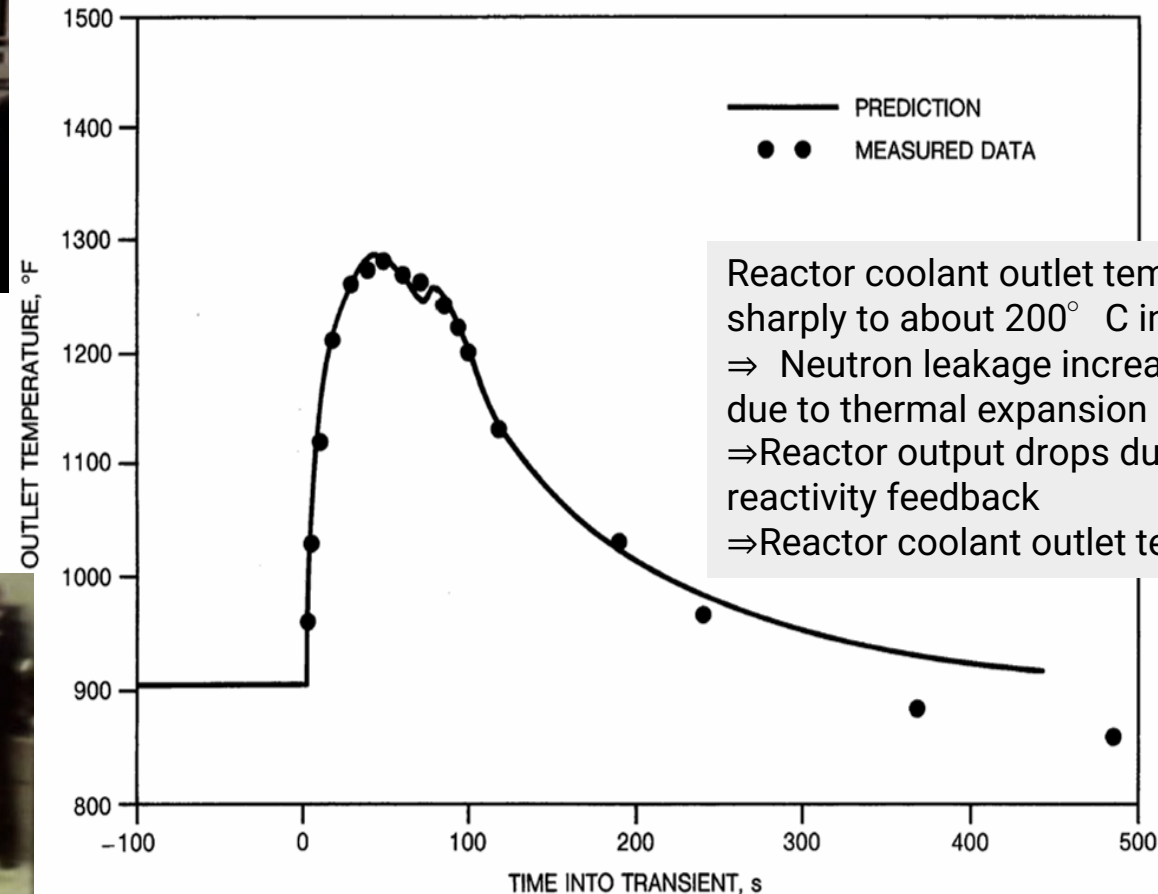


IFR has features as Inexhaustible Energy Supply ,Inherent Passive Safety ,Long-term Waste Management Solution , Proliferation-Resistance , Economic Fuel Cycle Closure. High level waste reduces radioactivity in 300 years while LWR spent fuel takes 100,000 years.

Dr. YOON IL CHANG
Argonne National Laboratory

Passive Safety was proven by the 1986 Experiment (loss of flow without scram) similar to the Fukushima event.

Loss-of-Flow without Scram Test in EBR-II

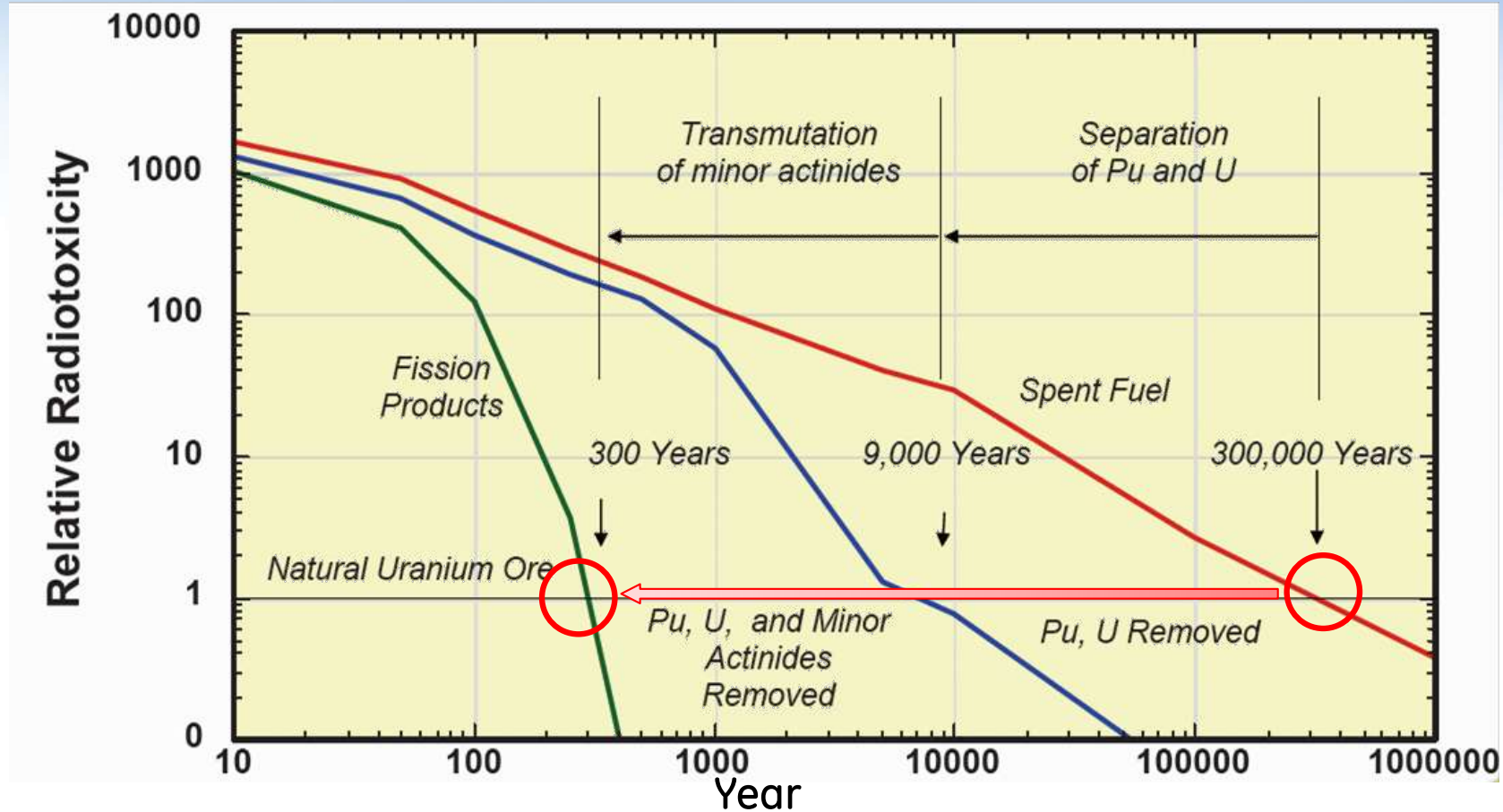


Reactor coolant outlet temperature rises sharply to about 200° C in about 30 seconds
⇒ Neutron leakage increases due to thermal expansion of core components
⇒ Reactor output drops due to negative reactivity feedback
⇒ Reactor coolant outlet temperature drops

Dr. YOON IL CHANG
Argonne National Laboratory

Transuranic disposal issues

The 1% transuranic (TRU) content of nuclear fuel is responsible for 99.9% of the disposal time requirement and policy issues

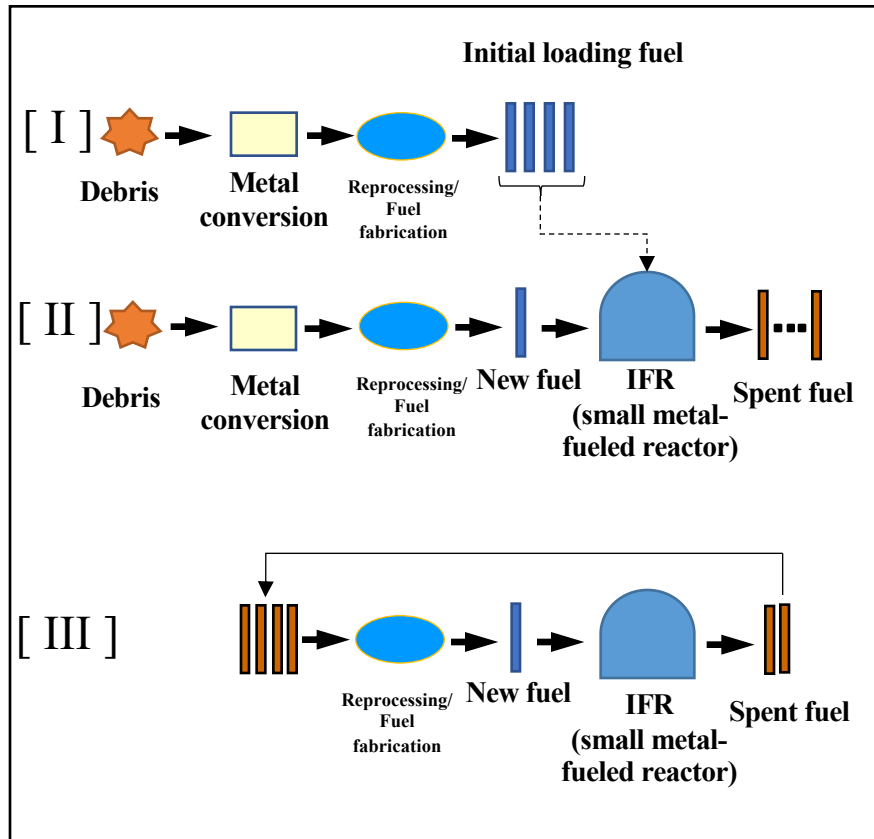


HITACHI

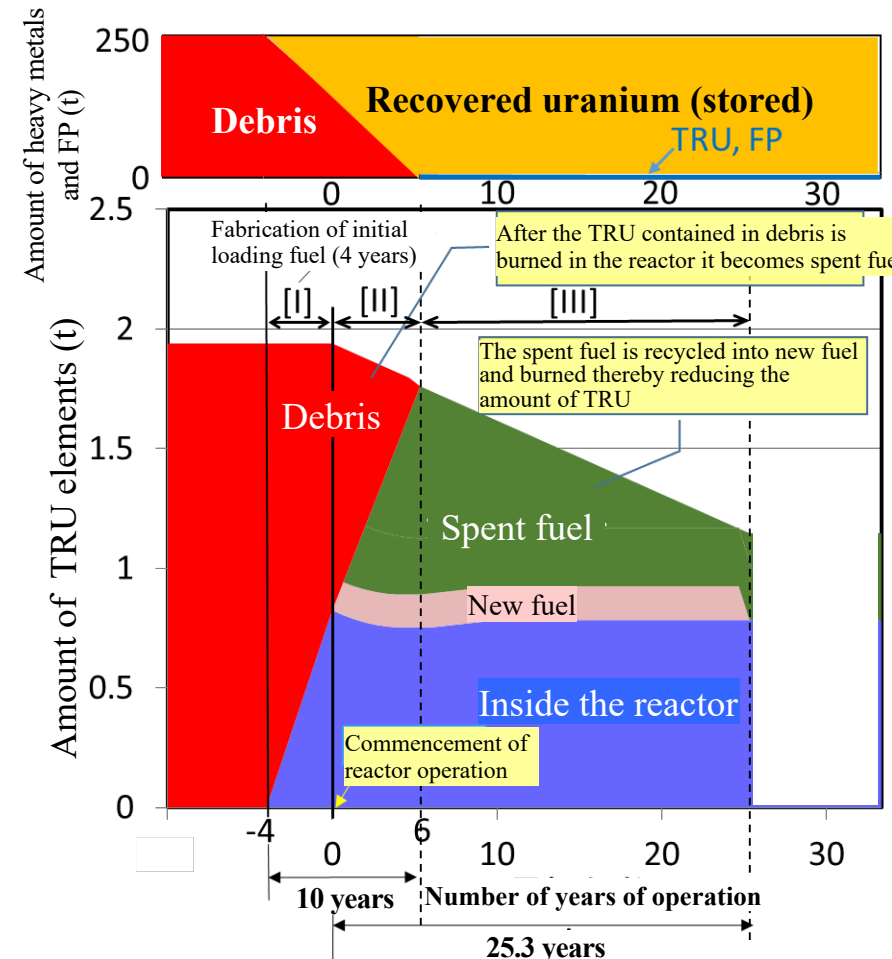
Removal of uranium, plutonium, and transuranics makes a 300,000 year problem a 300 year problem

Debris Processing Scheme and TRU Reductions

- An assessment of TRU burn-up performances showed the originally estimated debris processing period of 15 years could be shortened to 10 years.
- The **1.9 tons** of TRU present in the debris will be reduced to a total of **1.2 tons in 25 years** after the launching the IFR including that remaining in the reactor and that existing in the spent fuel. Since the amount of TRU required to constantly fabricate fuel after this point will be insufficient, it will be necessary to procure TRU from external sources in order to continue continuous operation of the reactor.



Concept diagram of debris processing scheme



IFR operation and TRU reductions

Nuclear Geopolitics

Chancellor Merkel's Mistake

She said, " I am a scientist and know what is nuclear. But to do nuclear here give me votes." After the Fukushima accident, she decided to phase out nuclear power by 2022. To reduce coal, she needed to rely too much on Russian gas, which invited the worst geopolitical crisis after the WW2.



Abendessen mit der Bundeskanzlerin am 29. September 2008 im Bundeskanzleramt

Cyril Wheel

President Obama's Mistake: he destabilized MENA by his Arab Spring initiatives and intervention to Lybia



Obama at the L'Aquila G8 Summit, 2009



President Trump's Mistake: he penalized Iran while embracing N.Korea.



Trump delivers a statement saying the US is withdrawing from the Iran nuclear deal, May 8, 2018, in Washington, DC [File: Evan Vucci/AP Photo]

The Iran Deal was one of the worst and most one-sided transactions the United States has ever entered into. (Donald Trump)



The two leaders shake hands again before their one-on-one meeting. In brief remarks to reporters, Trump expressed hope that the meeting would be "tremendously successful" and said, "We will have a terrific relationship ahead." Kim told reporters that there were many "obstacles" to the meeting, but "we overcame all of them and we are here today." *Evan Vucci/AP*

The 2018 North Korea–United States Singapore Summit, commonly known as the Singapore Summit, was a summit meeting between North Korean Chairman Kim Jong Un and U.S. President Donald Trump, held at the Capella Hotel, Sentosa, Singapore, on June 12, 2018

Putin's Mistake

Since his invasion of Ukraine, President Putin has continuously threatened Ukraine & NATO with possible nuclear attack.

Putin says Russia has tested next-generation nuclear weapon

Reuters

October 6, 2023 1:13 AM GMT+9 · Updated 3 days ago



Russian President Vladimir Putin delivers a speech at the 20th Annual Meeting of the Valdai Discussion Club in Sochi, Russia, October 5, 2023. Sputnik/Grigory Sysoyev/Pool via REUTERS [Acquire Licensing Rights](#)

Chinese President Xi may mistake by invading Taiwan by 2027



File. Xi Jinping looks on as he meets with US Secretary of State Antony Blinken (not pictured) in the Great Hall of the People in Beijing (REUTERS)



US Joint Chiefs of Staff Chairman General Mark Milley speaks at the National Press Club in Washington on Friday. Photo: Getty Images via AEP



CIA Director William Burns speaks on "Addressing the Global Threat Landscape," during an event as part of the Trainer Award ceremony at Georgetown Hotel and Conference Center on Feb. 2, 2023, in Washington, D.C. (Alex Wong/Getty Images)

ISRAEL, MIDDLE EAST, NEWS, PALESTINE

Israel minister renews call for striking Gaza with ‘nuclear bomb’



Far-right Israeli Jerusalem Affairs and Heritage Minister, Amichai Eliyahu [@Eliyahua/Twitter]



Is Kim Jong Un Preparing for War?

BY: [ROBERT L. CARLIN](#) AND [SIEGFRIED S. HECKER](#)

JANUARY 11, 2024 | [DOMESTIC AFFAIRS](#), [FOREIGN AFFAIRS](#), [MILITARY AFFAIRS](#)

The situation on the Korean Peninsula is more dangerous than it has been at any time since early June 1950. That may sound overly dramatic, but we believe that, like his grandfather in 1950, Kim Jong Un has made a strategic decision to go to war. We do not know when or how Kim plans to pull the trigger, but the danger is already far beyond



Source: Rodong Sinmun

North Korea's Kim Jong Un abandons unification goal with South

Updated 16 Jan

By [Oliver Slow](#)
BBC News

North Korean leader Kim Jong Un has said unification with the South is no longer possible, and that the constitution should be changed to designate it the "principal enemy".

The Leaders jointly inaugurated a new era of trilateral partnership: New GEOPOLITICS?



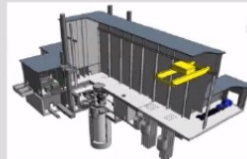
US-Japan-Korea Cooperation on Versatile Test Reactor (IFR; Metal Fuel Fast Reactor and Pyroprocessing)

- ✓ VTR project is essential for USA and Japan to maintain experiences and to develop innovative technologies, related to fast reactors.

- MOC was signed among METI, MEXT and DOE on 12. June 2019.
- For further corporation, Project Arrangement between JAEA and DOE (INL) is being prepared.
 - ✓ JAEA has operation experiences of “JOYO” (Sodium-cooled Fast Reactor) and “Large-scale sodium experimental facilities” (AtheNA, etc).

VTR (Versatile Test Reactor)

- ✓ Based on sodium-cooled fast reactor (GEH-HGE's PRISM design)
- ✓ Incorporate various coolants loops (lead, gas, molten-salt)



Sodium-cooled Fast Reactor Technology in Japan



JOYO



Sodium experimental facilities

Further collaboration with US-Japan-Korea be applied for Fukushima Debris solution using IFR.

Japan, Korea and the US should develop N.East Asian AUKUS

Japan, the US and Korea should consider introducing nuclear propulsion submarine facing the geopolitical change in the Indo- Pacific.

U.S. to Share Nuclear Submarine Technology With Australia in New Pact

A new defense partnership between the U.S., the U.K. and Australia forms to focus on security



Visit to USS Illinois SSN786 at Yokosuka.



Japan, Korea and the US should work together for the complete Denuclearization of North Korea

Japan should engage to the denuclearization process of North Korea by offering to buy their Plutonium (40kg) and burn in the Nuclear Power Plant at Kashiwazaki-Kariwa, Niigata.
S. Korea can dilute HEU for LWRs.
Japan and Korea should join the Treaty on the Prohibition of Nuclear Weapons



笹川平和財団会長
田中 伸男

たなか・のぶお 東大経卒、通商産業省（現経済産業省）入省。通商政策局総務課長、経済協力開発機構（OECD）科学技術産業局長などを経て07年に欧州出身者以外で国際エネルギー機関（IEA）事務局長に就任。16年から現職。69歳。

北朝鮮のプルトニウム買い取りを 核不拡散技術、日米韓で主導

講演

トランプ米大統領と金正恩北朝鮮総書記の電撃的なシンガポール会談以来、朝鮮半島非核化が進みかけている。わが国はこのプロセスに何らかの形で積極的に関与することが必要である。

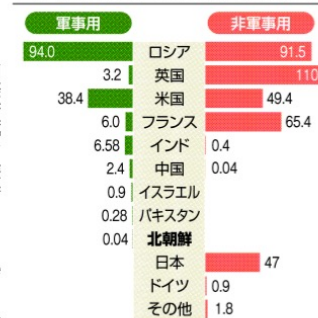
受け身では対話には参加できないばかりか、気がついたら米朝の間で大陸間弾道ミサイルの撤廃だけでテイルが出来上がってしまうかもしれない。私はその切り札が北朝鮮の持つプルトニウム約40kgの買い取り、日本のプルスール計画の中で消化しようとする北朝鮮に提案することだと考えている。

日本が現在持つプルトニウム在庫47kgの追加は何ら難くない。新潟県の柏崎刈羽原子力発電所のプルスール計画で消化できれば新潟県出身の拉致家族を取り返す一助ともなる。

日米韓はもう一つ、原子力平和利用で協力できる。米国はアイダホ国立研究所で、安全で兵

（今回はMedicare Excellence JAPAN理事長の近藤達也氏です）

各国のプルトニウム保有量 (トン)



長崎大学核兵器廃絶研究センターのデータを基に作成

目指して乾式再処理技術の共同研究を米国とアイダホで行っている。日米韓が3カ国協力で核不拡散型原子力システムのモデルをつくる道が見えている。

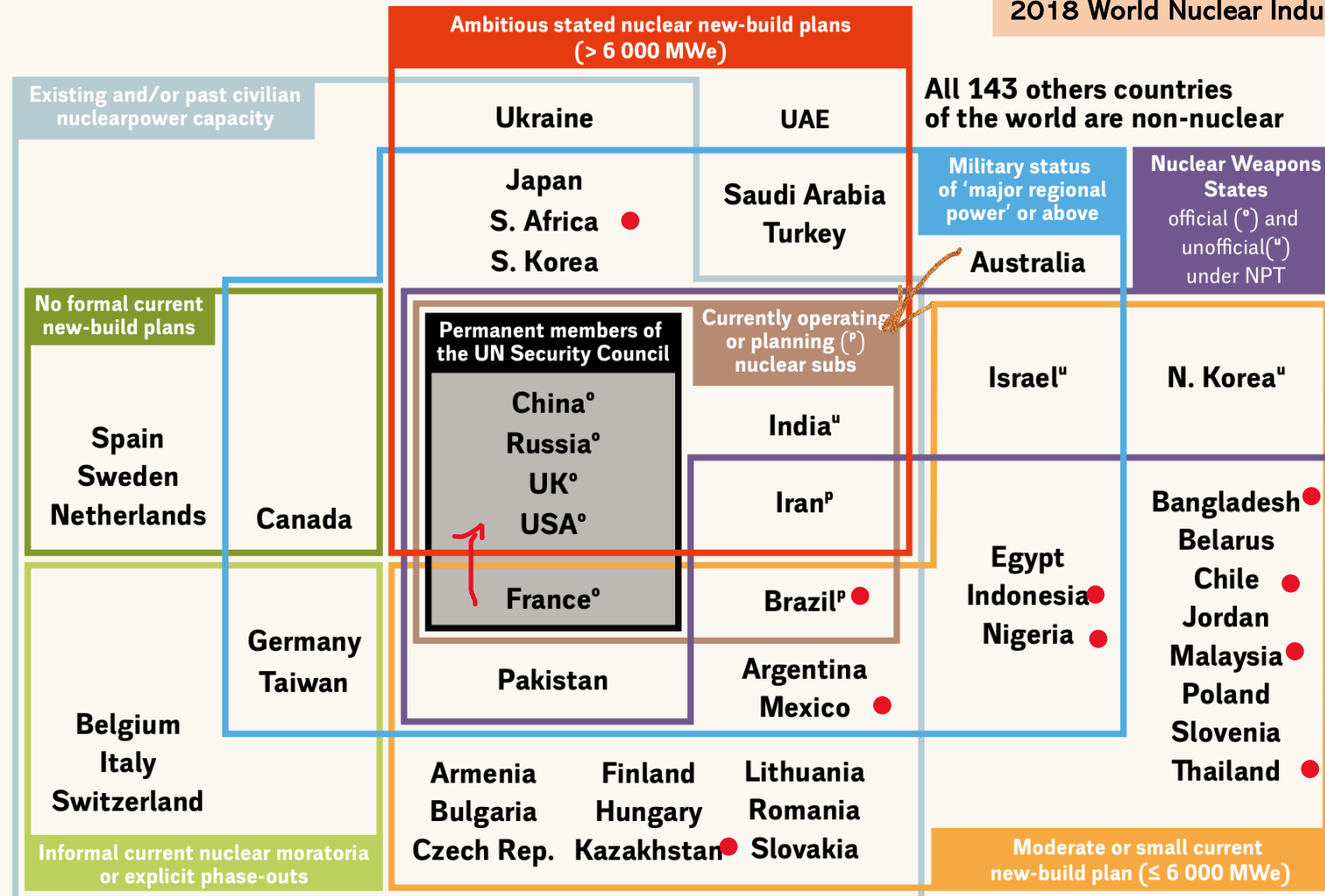
この炉は福島原発事故のデブリ処理に応用できる。核不拡散性だけでなく受動的な安全性、廃棄物処理に優れた画期的な技術だ。最終的に出てくる高レベル廃棄物が天然ウラン並みに毒性が低減するのには使用済み燃料なら30年かかるところ、これなら300年で済む。

ゴミの最終処分場ははるかに見つけやすくなるはずだ。日本もそうだが平和利用の権利はどの国にも認められている。核拡散防止条約(NPT)体制は、核兵器保有国が非保有国にいろいろ注文をつけて核拡散を防ぐためにできたが、その不平等性から非保有国の不満や反発を招き、不拡散の表を上げることはできなかった。日本と韓国がリーダーシップをとって米国の協力をもって核不拡散型の技術開発を主導したらどうだろう。

There are 50 potential nuclear weapon states in the world today. Nine have weapons, while Ten sign in the Nuclear Weapon Ban Treaty.

Circumstantial Relationships Between WNA-Reported Civil Nuclear Ambitions and Different Categories of International Military and Geopolitical Status

2018 World Nuclear Industry Status Report

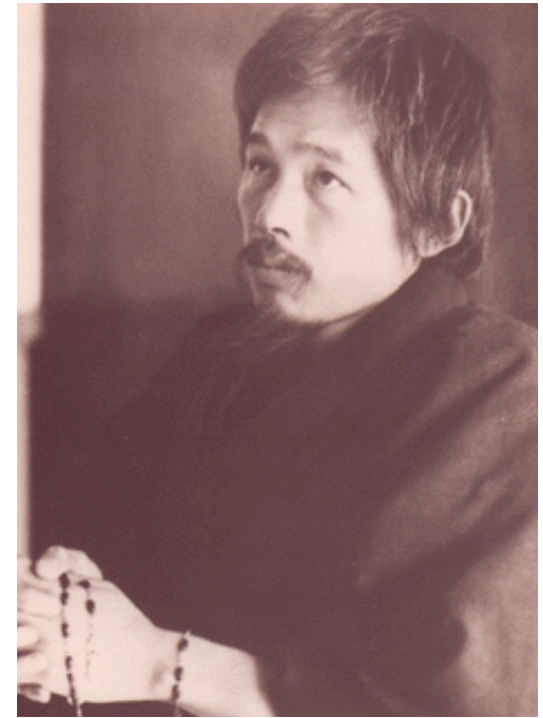


● Member or Signatory to the Treaty on the Prohibition of Nuclear Weapons (93 Signatories, 70 states parties)

Other ● Asian Signatories
Vietnam
Philippines
Cambodia
Laos
Mongolia
Sri Lanka

Statement by Dr. Takashi NAGAI after Nagasaki atomic bomb. "How to turn the devil to the fortune."

Dr. Takashi Nagai, a Professor at Nagasaki University in 1945 when the atomic bomb was dropped, exemplifies the resilience, courage and believe in science of the Japanese people. Despite having a severed temporal artery as a result of the bomb, he went to help the victims even before going home. Once he got home, he found his house destroyed and his wife dead. He spent weeks in the hospital where he nearly died from his injuries. But just months after the atom bomb dropped, he said:



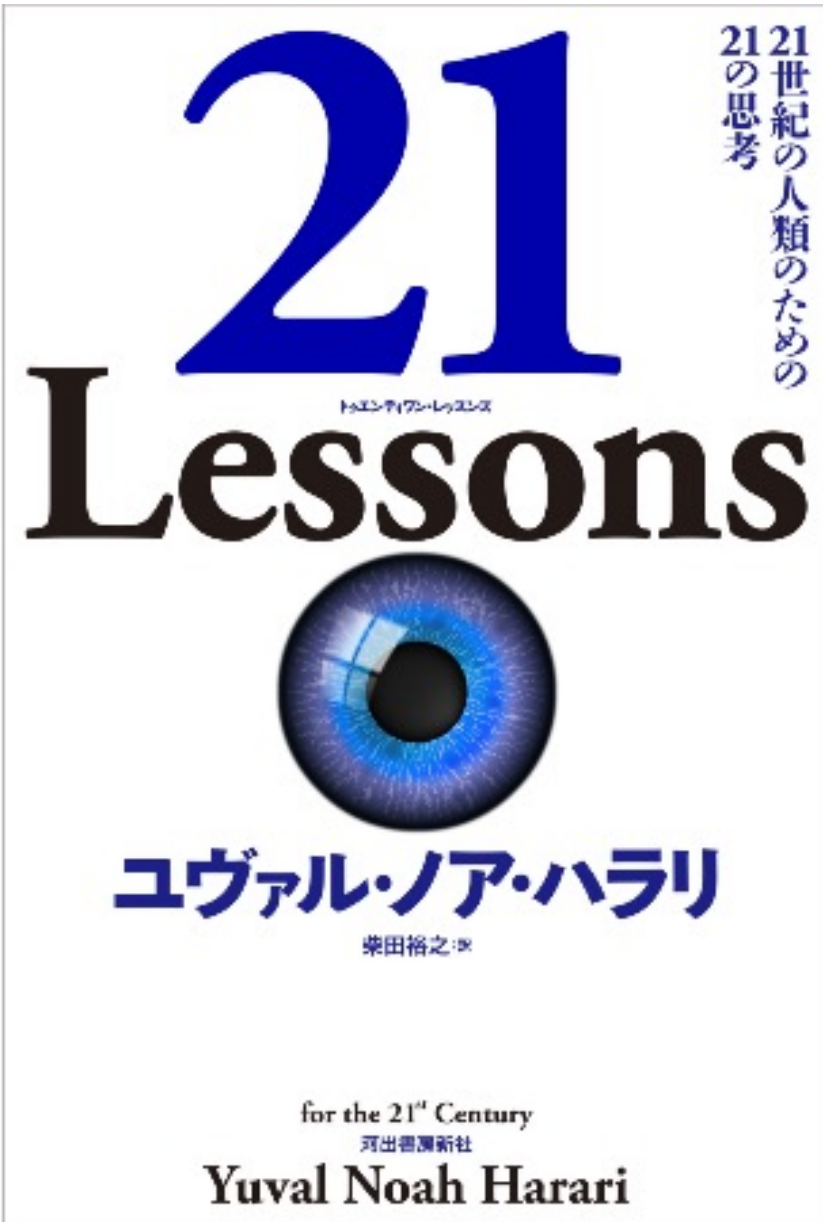
“Everything was finished. Our mother land was defeated. Our university had collapsed and classrooms were reduced to ashes. We, one by one, were wounded and fell. The houses we lived in were burned down, the clothes we wore were blown up, and our families were either dead or injured. What are we going to say? We only wish to never repeat this tragedy with the human race. We should utilize the principle of the atomic bomb. Go forward in the research of atomic energy contributing to the progress of civilization. Devil will then be transformed to fortune.(Wazawai tenjite Fukutonasu) The world civilization will change with the utilization of atomic energy. If a new and fortunate world can be made, the souls of so many victims will rest in peace.”

US envoy Kerry launches international nuclear fusion plan at COP28

- DUBAI, Dec 5 (Reuters) - U.S. special climate envoy John Kerry on Tuesday launched an international engagement plan to boost nuclear fusion, saying the emissions-free technology could become a vital tool in the fight against climate change.
- Kerry said the plan involved 35 nations and would focus on research and development, supply chain issues, and regulation, and safety.
- "There is potential in fusion to revolutionize our world," Kerry told the [COP28 climate summit](#) in Dubai.



Global Energy Forum at COP 28 - Day 1



- Nationalism cannot provide solution to the three major global challenges to the human beings of the 21st Century, namely **(1) Nuclear War, (2) Ecological Challenges, (3) Tech-destruction by AI (algorithm).**
- Now that Liberalism and Democracy seems to lose credibility, select politicians who understand and try to solve these three challenges.
- Political leaders with **“Global Identity”** are needed.



Late PM Shinzo ABE, a founding father of ICEF, was the unique Japanese politician with global identity.



My New Year Message

Birds work together to make a happy new year of dragon.

We, humans, should do the same to make a more peaceful and happier new year.

