GJETC Outreach: Meet the Council Members, 20 February 2026

Energy & Climate Policy in the Light of (geo)political Changes
Perspectives from Germany and Japan

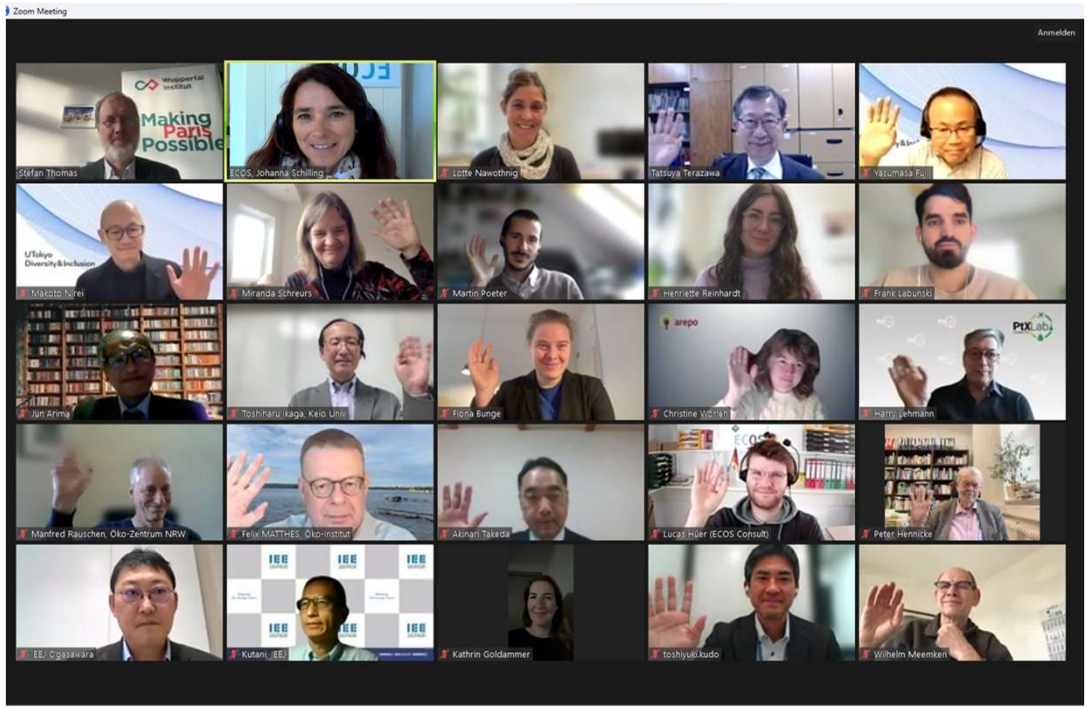
German-Japanese Energy Transition Council

10 Years German-Japanese Energy Transition Council (GJETC)

A role model for international cooperation on climate and environmental issues since 2016

10 Years German-Japanese Energy Transition Council (GJETC)

Meeting regularily in Germany and Japan – and online



Appendix: Members, organisation, and funding

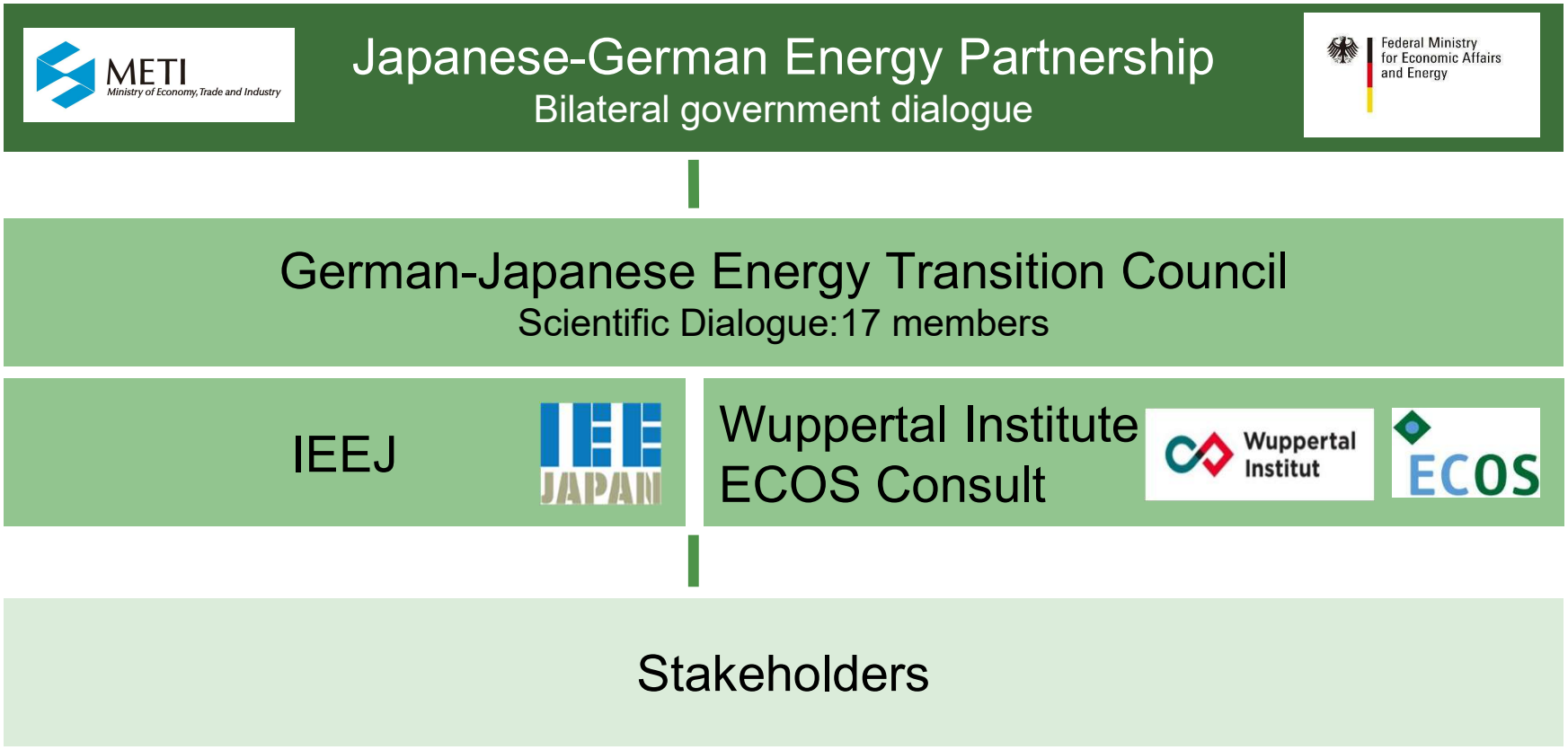
JAPAN		GERMANY
METI Ministry of Economy, Trade and Industry	**Funding**	BMWE Federal Ministry for Economic Affairs and Energy
Co-Chair: Prof. Tatsuya TERAZAWA (IEEJ)	**Management**	Co-Chair: Dr. Stefan THOMAS (Wuppertal Institute)
Scientific & Organizational Secretariat: Institute of Energy Economics Japan (IEEJ)		Scientific Secretariat: Wuppertal Institute
		Organization & Consulting: ECOS Consult
		Principal Advisor: Prof. Peter HENNICKE

Council Members

Prof. Yasumasa FUJII (University of Tokyo)	Prof. Jun ARIMA (University of Tokyo)	Dr. Kathrin GOLDAMMER (Reiner Lemoine Institute)	Dr. Harry LEHMANN (PTX Lab – Lusatia)
Prof. Makoto NIREI (University of Tokyo)	Prof. Yasuo TAKAHASHI (Institute for Global Environmental Studies)	Prof. Dr. Andreas LOESCHEL (Bochum University)	Dr. Felix C. MATTHES (Oeko Institute)
Prof. Dr. Toshiharu IKAGA (Keio University)	Junichi OGASAWARA (Institute of Energy Economics Japan)	Manfred RAUSCHEN (Ökozentrum NRW)	Dr. Carsten ROLLE (BDI Fed. of German Ind.)
Sumiko TAKEUCHI (U3 Innovations)		Prof. Miranda SCHREURS (Techn. Univ. of Munich)	Dr. Christine WOERLEN (Arepo GmbH)

Role of the GJETC

Mutual learning platform to accelerate energy transition.

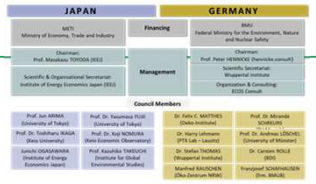


Concept and Functions

Innovation Lab

Stakeholder Dialogues with Young Scientists

Platform for scientific exchange of the next generation on key issues



Consulting Body

Outreach Events

Studies + Topical Papers

Science-based Input and Consulting for Policymakers

Innovation Hub

Innovation Roundtables with the Industry

Initiation and development of joint demonstration projects on key technologies

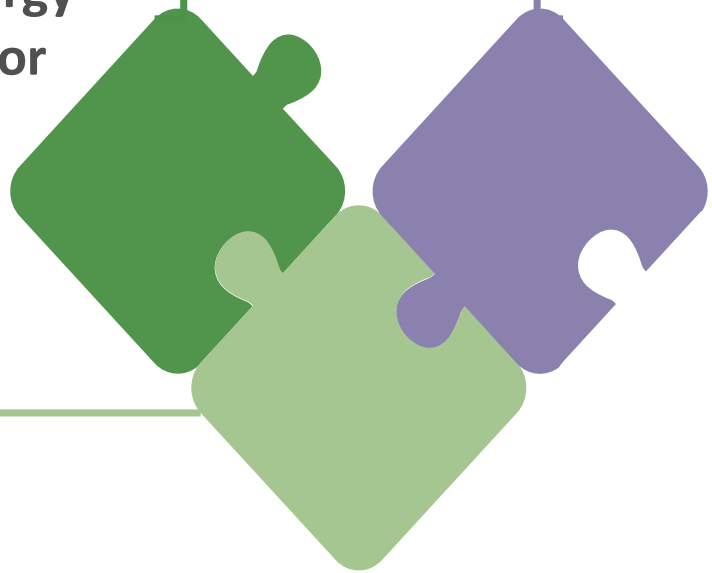
GJETC Meet the Council Members, 20 February 2026

Insights into the Council's work

Toshiyuki Sakamoto
Ichiro Kutani
Dr. Stefan Thomas

Findings from the current GJETC study topics

How to improve energy efficiency policies for industry



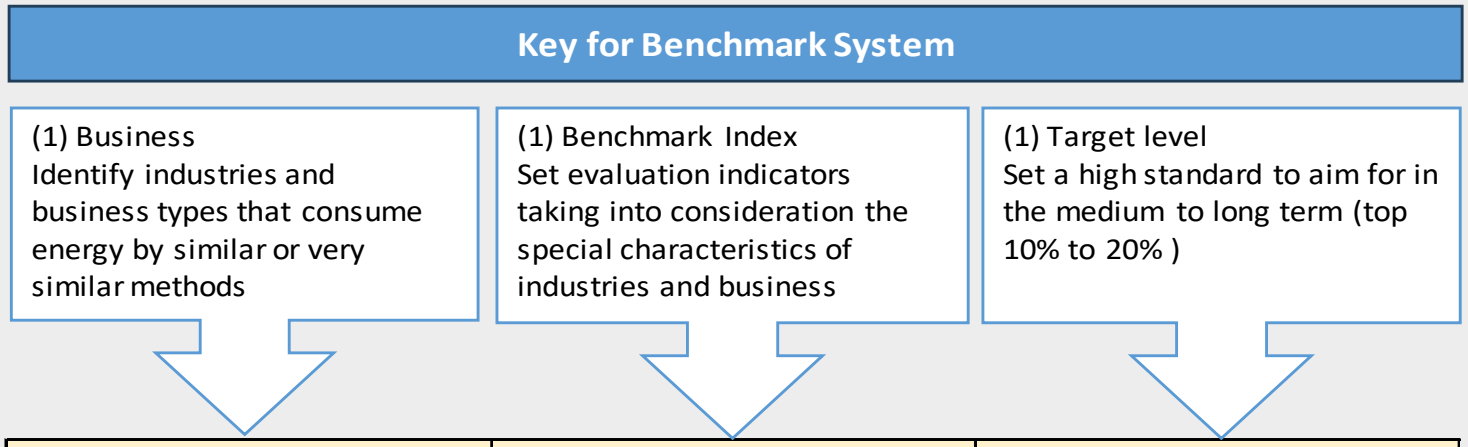
Carbon pricing and social acceptance

Critical raw materials

Example 1: Benchmark regulation of industrial energy efficiency in Japan

Benchmark System:

- Benchmarks mean energy efficiency target that businesses in a given industry sub-sector should achieve over the medium to long term. It identifies whether energy efficiency improvement is progressing or lags behind in comparison to other companies.



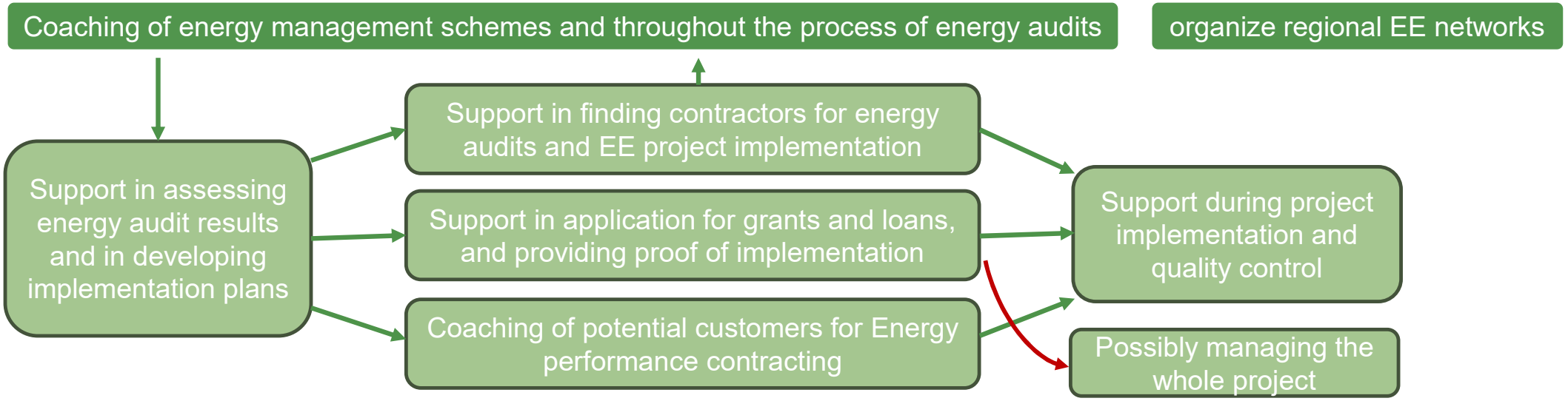
Business	Benchmark Index	Target
Iron and steel (blast furnace)	Energy consumption (kℓ)/ crude steel production volume (t)	0.531kℓ/t

- Introduced in 2009, BM System now covers 7 industries/12 categories for the industry (cover 70% of Industrial & Commercial energy consumption)
- Target is to be the **Top level** (10 to 20%)- "Top runner program for industries"-

Source: Agency for Natural Resources and Energy (2016.11).「ベンチマーク制度の概要について」(Overview of the benchmark system);edited
https://www.meti.go.jp/shingikai/enecho/shoene_shinene/sho_energy/kojo_handan/pdf/2016_001_03_00.pdf

Example 2: One-Stop-Shops providing practical support for industries to implement energy efficiency

EU is developing and requiring dedicated agencies called One-Stop-Shops for practical support of EE projects; all EU Member States including Germany must implement them; may be interesting for Japan too. **Tasks** to support the client through **the whole journey** of EE projects:



Also strengthen link between energy and resource efficiency, and between EE and demand-side response!

How to improve energy efficiency policies for industry

provisional

Learnings/Findings

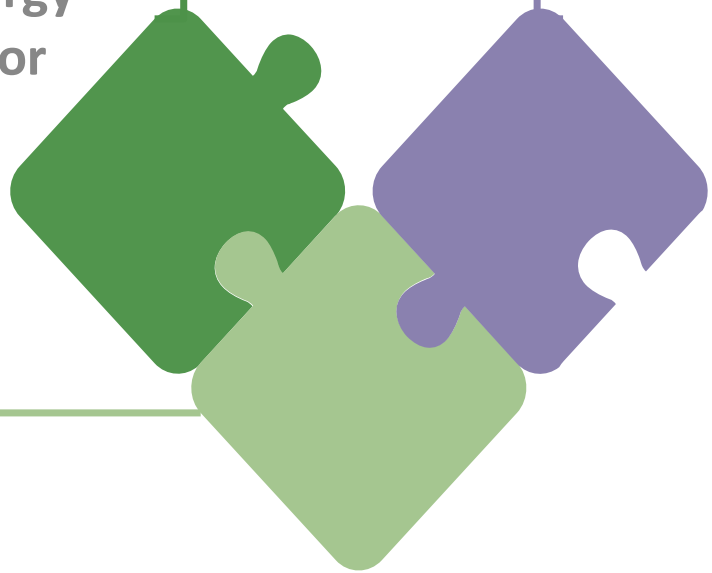
- Both countries have made progress in energy efficiency, but enormous cost-effective potentials and many co-benefits can be realized when market barriers are removed. Further enhancement of EE policy is needed to implement cost-effective EE potentials in the industry sector.
- Policies such as benchmarks and targets for energy efficiency, renewable energies, and CO2 emission reductions for companies all have their specific benefits, but create the challenge of coordination and coherent integration.
- New approaches such as One-Stop-Shops (OSS), Energy Efficiency Networks in the EU, and Energy Conservation Local Partnership in Japan have been introduced to enhance practical support for industries.

Policy recommendations

- Improve affordability while promoting EE; design carbon pricing so as to avoid too high evergy prices that may lead to industry hollow-out, and use revenues to support EE, decarbonization, innovation
- Provide practical implementation support:
  - Create OSS, EE Networks, by working i.a. with municipal governments and national funding
  - Enhance coordination from national level
- Take a holistic approach for system thinking;
  - EE within the entire energy system
  - Links with resource efficiency, demand response
- Utilize AI and digitalization to maximize EE, including through demand response and analysis of hourly resolution, while ensuring EE of data centers
- Assess our social practices of using energy and how we communicate them in society

Findings from the current GJETC study topics

How to improve energy efficiency policies for industry

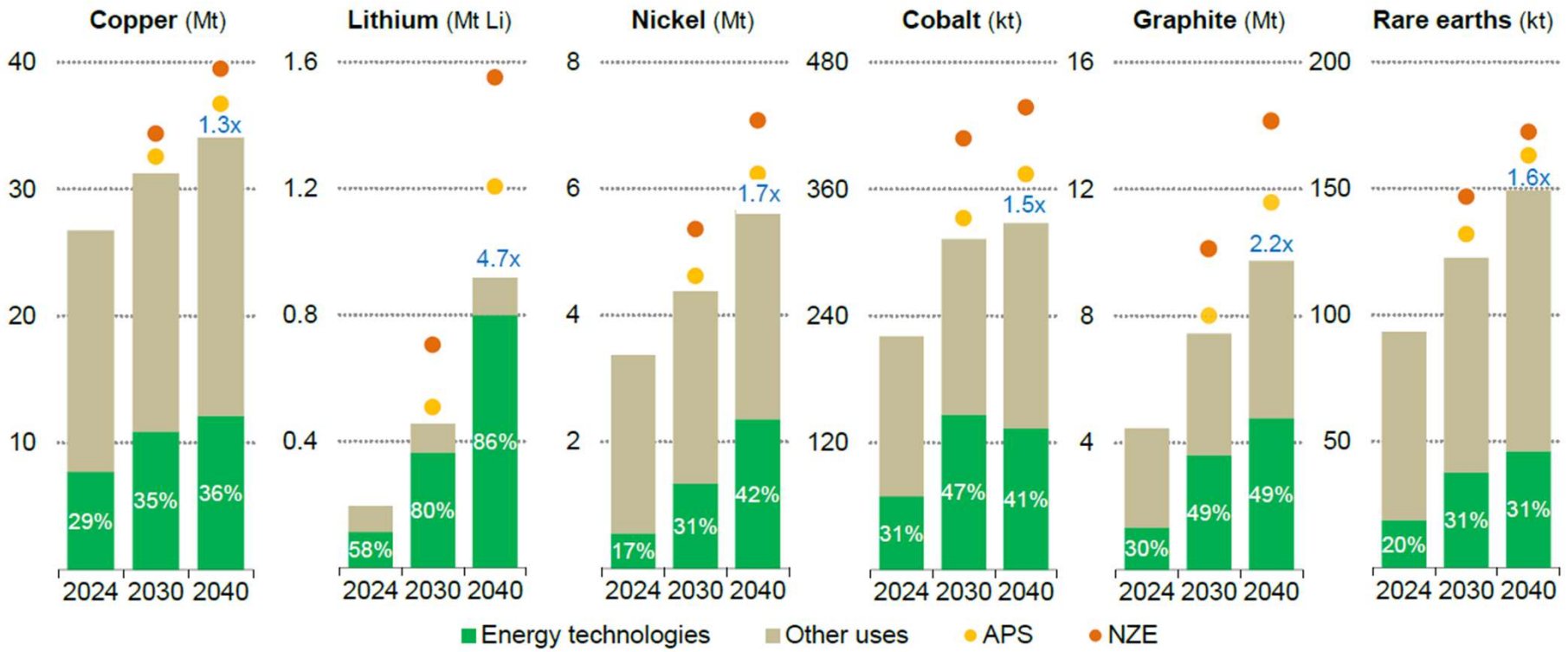


Carbon pricing and social acceptance

Critical raw materials

The demand for critical raw materials is expected to rise

Global Demand of Selected Critical Raw Materials in STEPS



STEPS = stated policy scenario, APS = anounced pledges scenario, NZE = net zero emissions by 2050 scenario
Growth rates (in blue) are between 2024 and 2040
Source: IEA (2025), Global Critical Mineral Outlook

Critical Raw Materials
Comparison of policy – Germany/EU and Japan

	Germany or EU		Japan
CRMs identified	34		35
Stockpiling	✓		✓
Resource development	Domestic and international		Domestic and international
Supply diversification	✓		✓
CRM Targets	10% from EU extraction	By 2030	NA (80%< self-sufficiency target for base metal by 2030)
	40%< from EU processing		
	25%< from recycling		
	<25% from single third country		
Demand control through	Circular economy, resource efficiency, and recycling		Recycling, resource efficiency, alternative material development
Key words in relation to external policies	"CRM club", WTO, Sustainable Investment Facilitation Agreements, FTA, anti-unfair trade		WTO, Resource diplomacy, securing trading environment

Critical raw materials

Learnings/Findings

- CRM are essential for the energy transition towards renewable energies
- The demand of CRM is increasing faster than supply can be expanded
- Both countries will not reach self-sufficiency of CRM but should aim to diversify their supply
- China is controlling a majority of the value chain of many CRM
- Domestic production to reduce dependency - Germany has 7th largest reserves of Lithium
- Currently established policy measures need updates to secure the supply of CRM

Policy recommendations

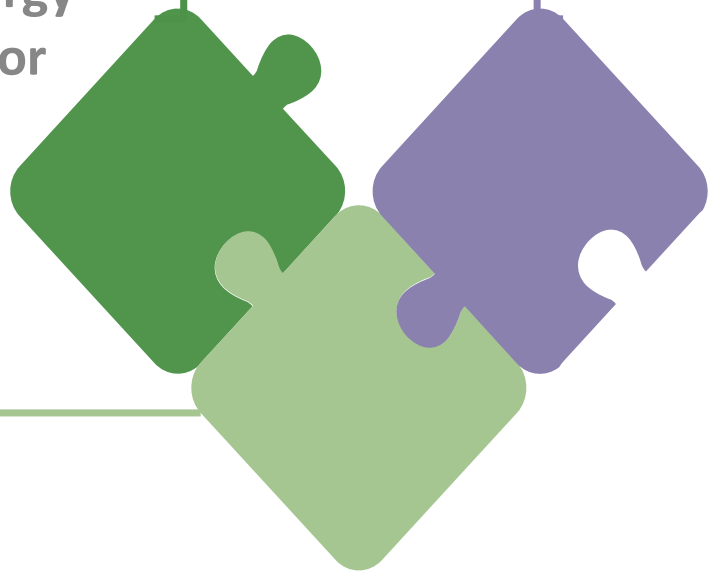
A long-term strategy, based on a quantitative outlook of the supply-demand gaps, encompassing the following, should be established

- Demand reduction through
  - Substitution by innovative and alternative technologies, optimal mix of technologies for rational use of CRM
  - Efficiency and behavior measures
- Circular economy principles
- Alternative sources of mining and processing, including domestic
- Access to international suppplies and markets

Japan and Germany could initiate a ***CRM Club*** of like-minded CRM supplier and user countries

Findings from the current GJETC study topics

How to improve energy efficiency policies for industry



Carbon pricing and social acceptance

Critical raw materials

Existing and planned carbon pricing schemes in the EU/Germany and Japan

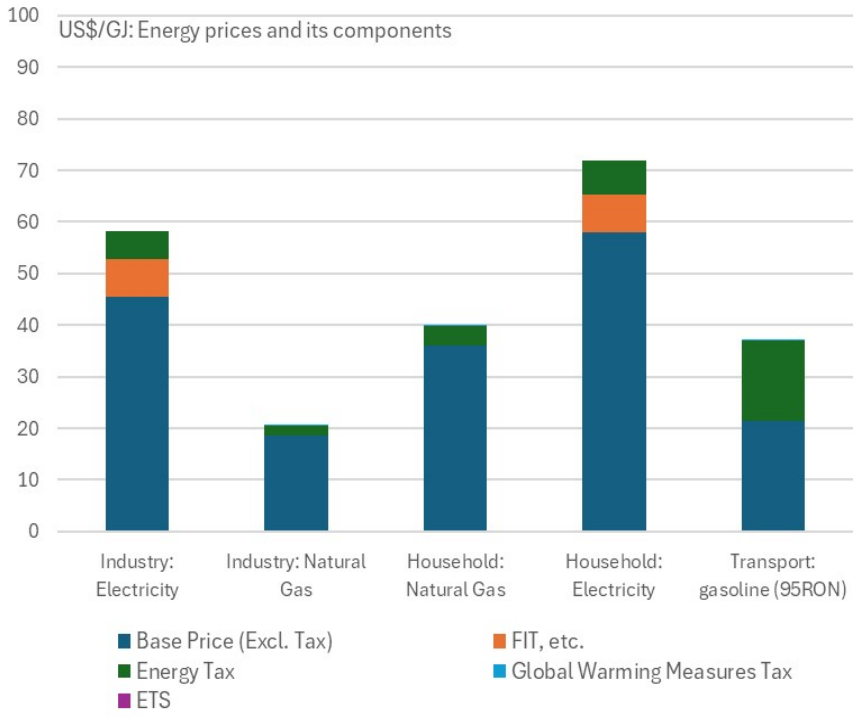
- EU will soon cover all sectors with emissions trading schemes I and II; is introducing carbon border adjustment mechanism (CBAM) for energy-intensive goods
- Japan will introduce carbon pricing for industry and energy, covering all sectors too

	EU/Germany	Japan
ETS	• EU-ETS I (Since 2005) • National nETS (Since 2021) • EU-ETS II (from 2027, mostly replacing nETS) • Auctioning; free allocation for energy-intensive industries	• GX ETS (voluntary scheme from 2023, full operation from 2026) • Auction of Emission Allowances for Power Producers (from 2033) • Free allocation and benchmarking for energy-intensive industries
Tax	• Energy Tax • Electricity Tax	• Oil and coal tax including add on rate of Tax for Climate Change Mitigation (Existing) • GX Surcharge (from 2028)

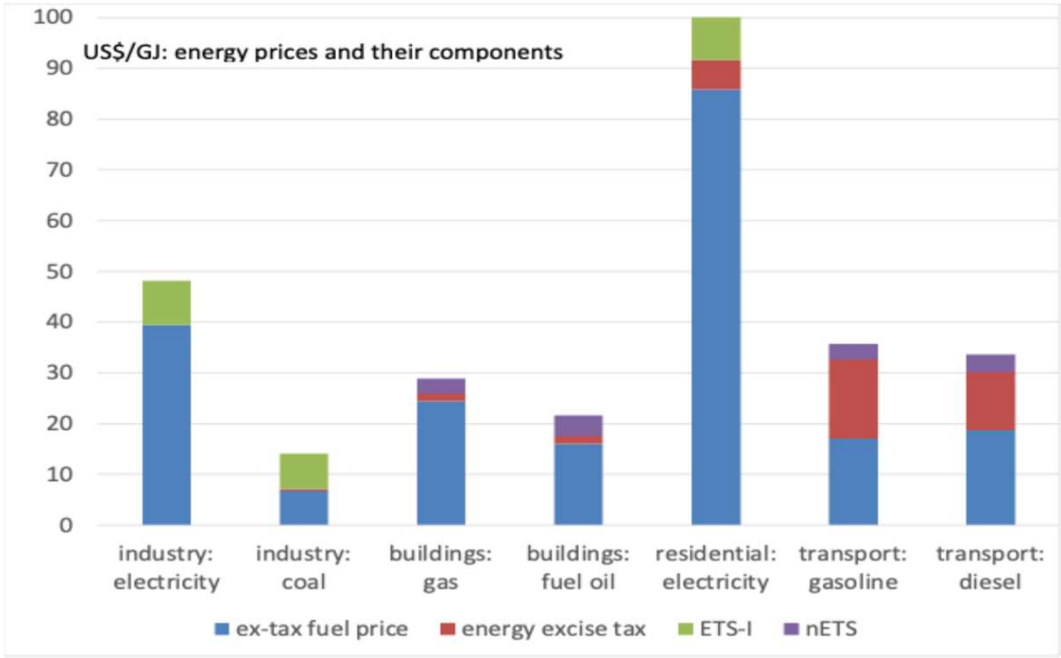
Existing and planned carbon pricing schemes in the EU/Germany and Japan

Effective *energy* rates in both countries

Japan



Germany



Excluding VAT (19%)

Carbon pricing and social acceptance

Learnings/Findings

- **Similar concerns** on challenges for competitiveness and aggravating economic divide in society in both countries => **address** in a wise manner
- Carbon pricing is **not the magic rod** and depends on sectors but is **important**
- Embedding carbon pricing into **a policy mix** to reconcile the private and societal perspectives and to overcome barriers for mitigation actions is likely to **achieve GHG mitigation targets faster and with much lower carbon price levels** needed
- Carbon pricing works best if market actors can choose between **alternatives** and /or the necessary **infrastructures** are in place.

Policy recommendations

- **A combination of carbon pricing with financial and technical support** for abatement of emissions seems **key for acceptance** of carbon pricing by citizens and businesses.
- One of the best ways to **use revenues** from carbon pricing is for funding this support
- The policy mix needs to be **sector-specific** and possibly technology-specific. It should also **address** concerns of market actors and aim for progressive distributional effects.
- An **introduction in phases** of few years will enable policy learning, e.g., on sectors that do not need free allocation or compensation

For further information please visit gjetc.org

Thank you for your attention

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COP-28 (Dubai, 2023; CMA.5) calls on RES, EE, and fossil fuels

- ***Tripling renewable energy capacity*** *globally by 2030*
- ***Doubling*** *the global average annual rate of* ***energy efficiency*** *improvements by 2030*
- ***Transitioning away from fossil fuels*** *in energy systems*

→ **Are these targets feasible for Germany and Japan domestically?**

→ **What has been achieved recently or is on the table for the years to 2030?**

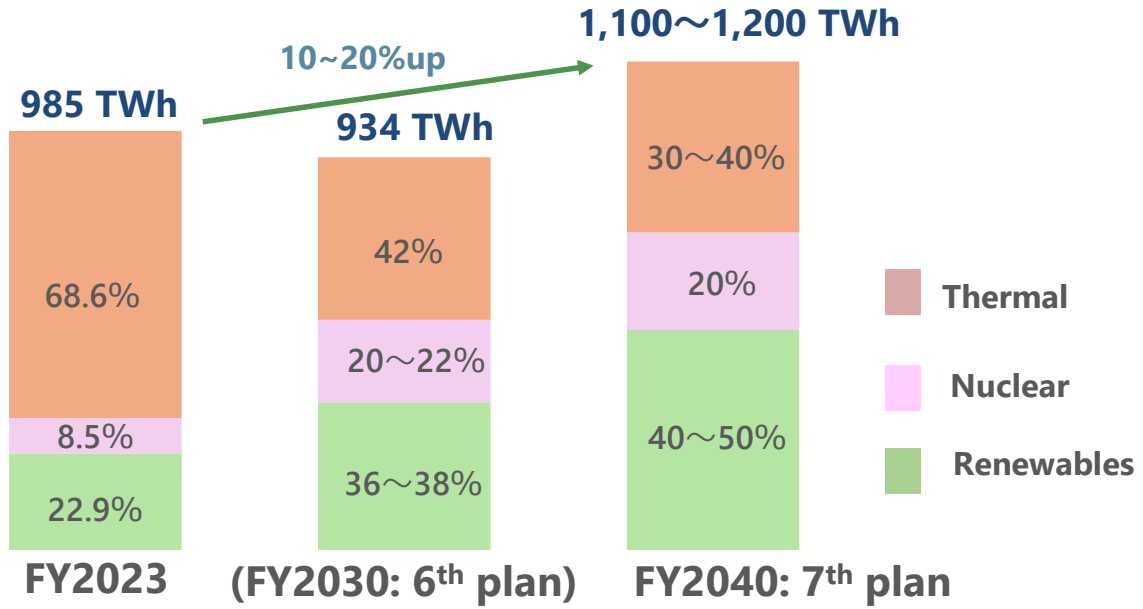
International efforts needed in any case, e.g. JETPs

7th Strategic Energy Plan

Responding to changing environment, while keeping principles and ambitions

Keeping S+3E principles and climate ambitions (-70% by 2040, energy only).

- ***Revise electricity demand upwards*** *due to electrification and data center demand.*
- *Maximizing RE deployment while* ***minimizing integration costs****.*
- *With safety as the top priority,* ***the restart of nuclear reactors will be accelerated****.*



Outlook of Power Generation Mix in Japan

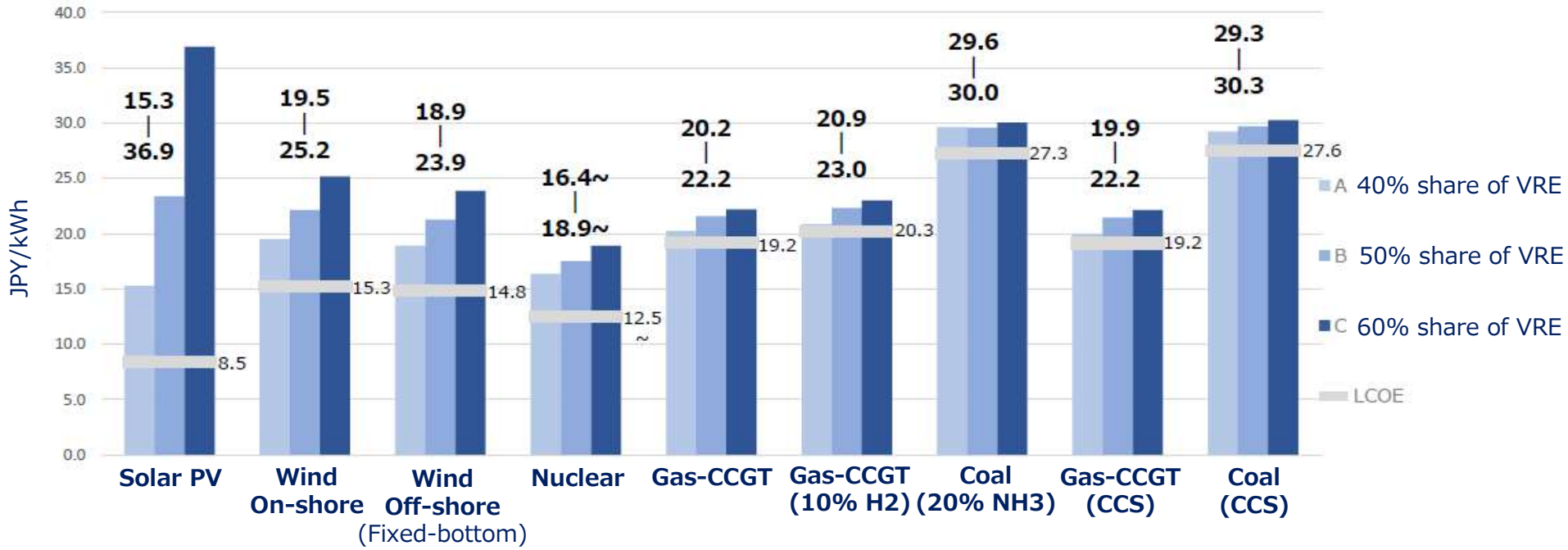
Source: METI (2024), Outlook of energy supply-demand balance in the fiscal year 2040

7th Strategic Energy Plan

Responding to changing environment, while keeping principles and ambitions

Must minimize cost implications of energy transition.

Cost of generating electricity (LCOE and system cost depending on the share of VRE)



CCGT = combined cycle gas turbine, LCOE = levelized cost of electricity, VRE = variable renewable energy, e.g. solar PV and wind power
Source: METI (2024), Outlook of energy supply-demand balance in the fiscal year 2040

7th Strategic Energy Plan

Responding to changing environment, while keeping principles and ambitions

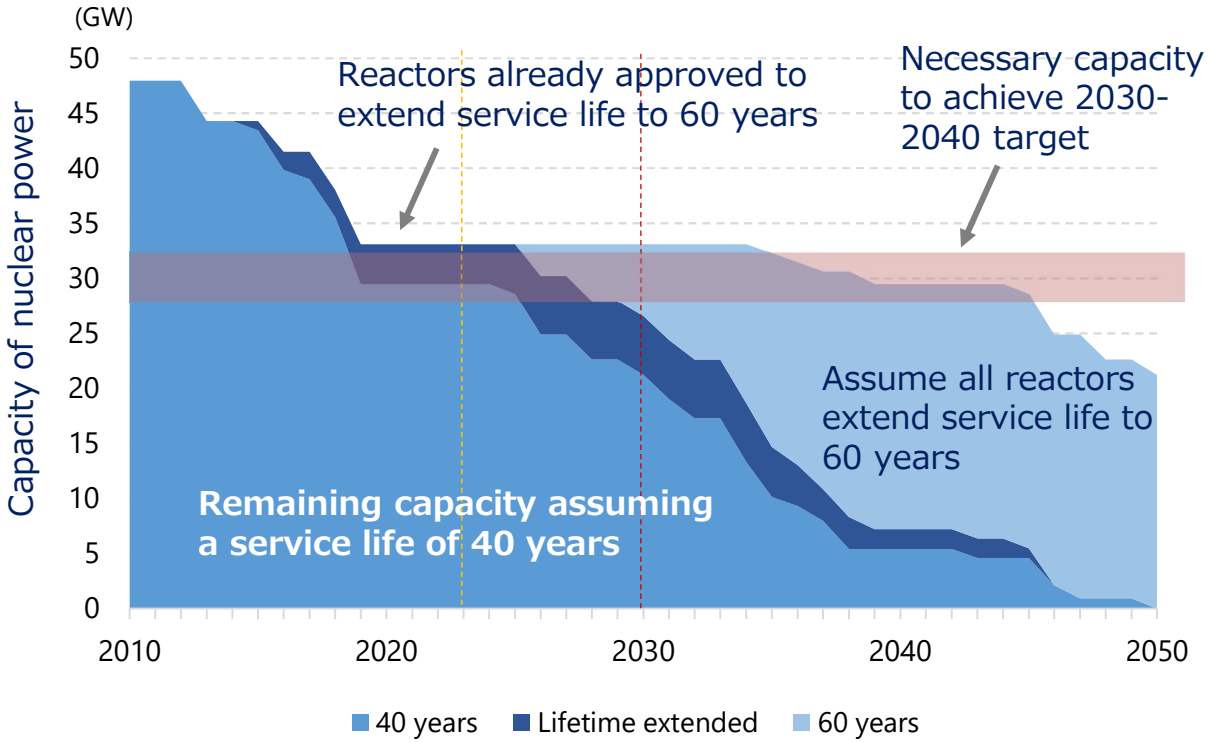
Nuclear power is a key option for Japan to simultaneously achieve 3Es.

Status of Nuclear Power Plants in Japan

	No. of Reactors	Capacity
Before 2011	54	49.0GW
Decommissioned	21	15.9GW
Safety review / failed	1	1.2GW
Remaining	32	31.9GW
Operating	15	14.6GW
Safety review / approved	3	3.4GW
Safety review / underway	6	5.7GW
Safety review / yet to apply	8	8.2GW
Constructing	3	4.1GW

Source: JANSI, as of 22 January 2026

Prospect of nuclear power generation capacity



Source: Shimogori (2023)

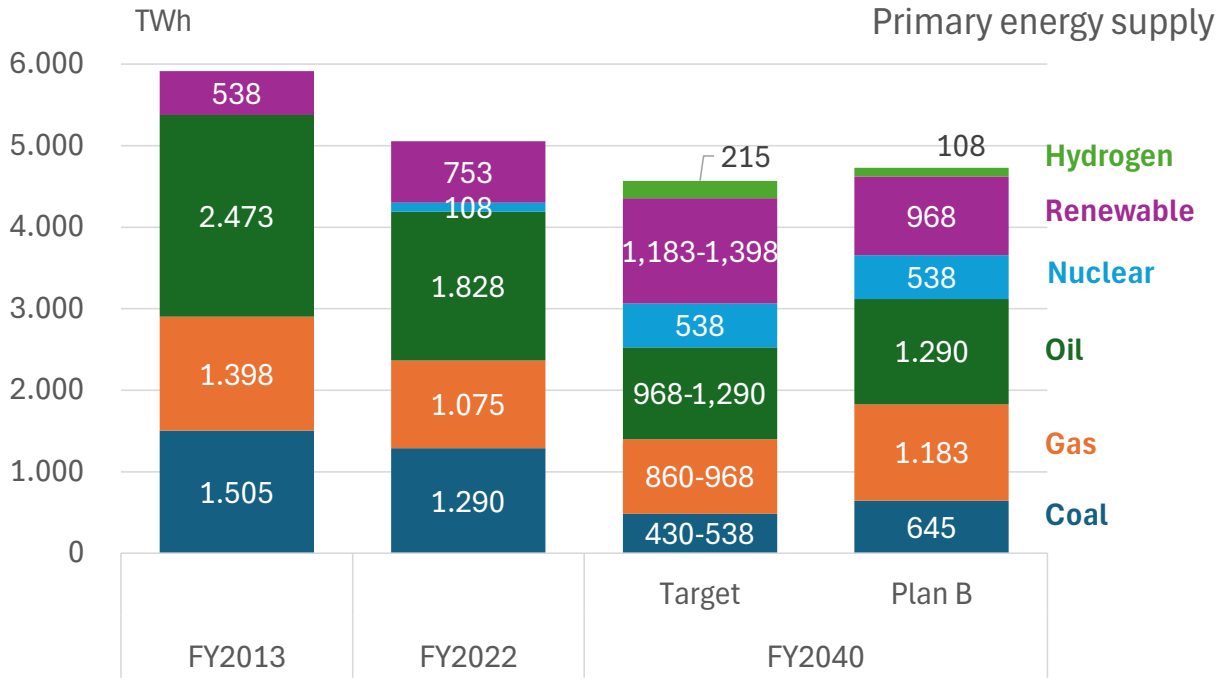
Plan B, What if the expectation desire for technological development is not realized?

Achieving clean energy targets, REs, hydrogen and CCS, will not be easy.

- *Hasty decommissioning of natural gas infrastructure should be avoided.*

Outlook of primary energy supply in different scenarios

FY = fiscal year (April-March), p.a. = per annum
Source: METI (2024), Outlook of energy supply-demand balance in the fiscal year 2040



Germany: national targets in line with COP-28

- *Germany wants to become GHG neutral by 2045*
- *EU-Emissions trading: last CO_2 certificates issued before 2040/45*

→ **Fossil fuel target feasible**

National RES and EE targets 2030 in line with COP-28 targets:

- RES for Electricity: Target 600 TWh (80%) by 2030

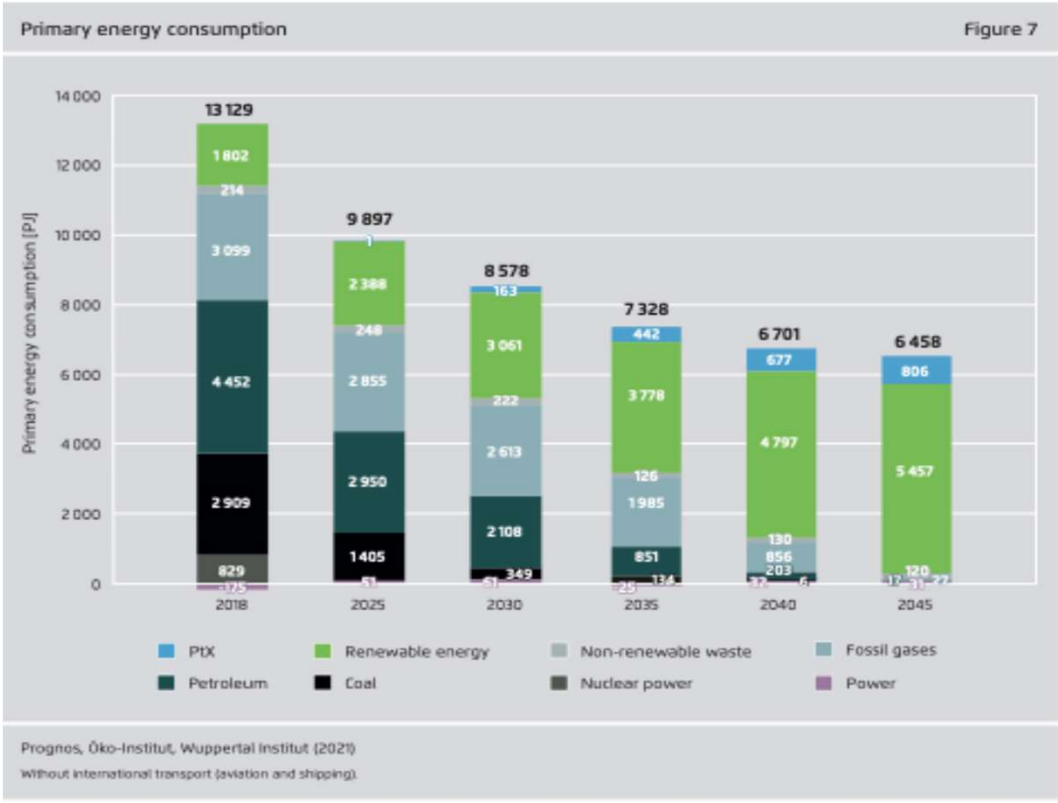
→ **National target close to achievement**

- Energy Efficiency: for primary energy, ca. 4.7 %/yr

→ **National primary energy target = overachievement**

But will national targets be reached?

Roadmaps towards GHG neutrality by 2045:
Energy scenarios, Agora EW long-term scenarios as an example



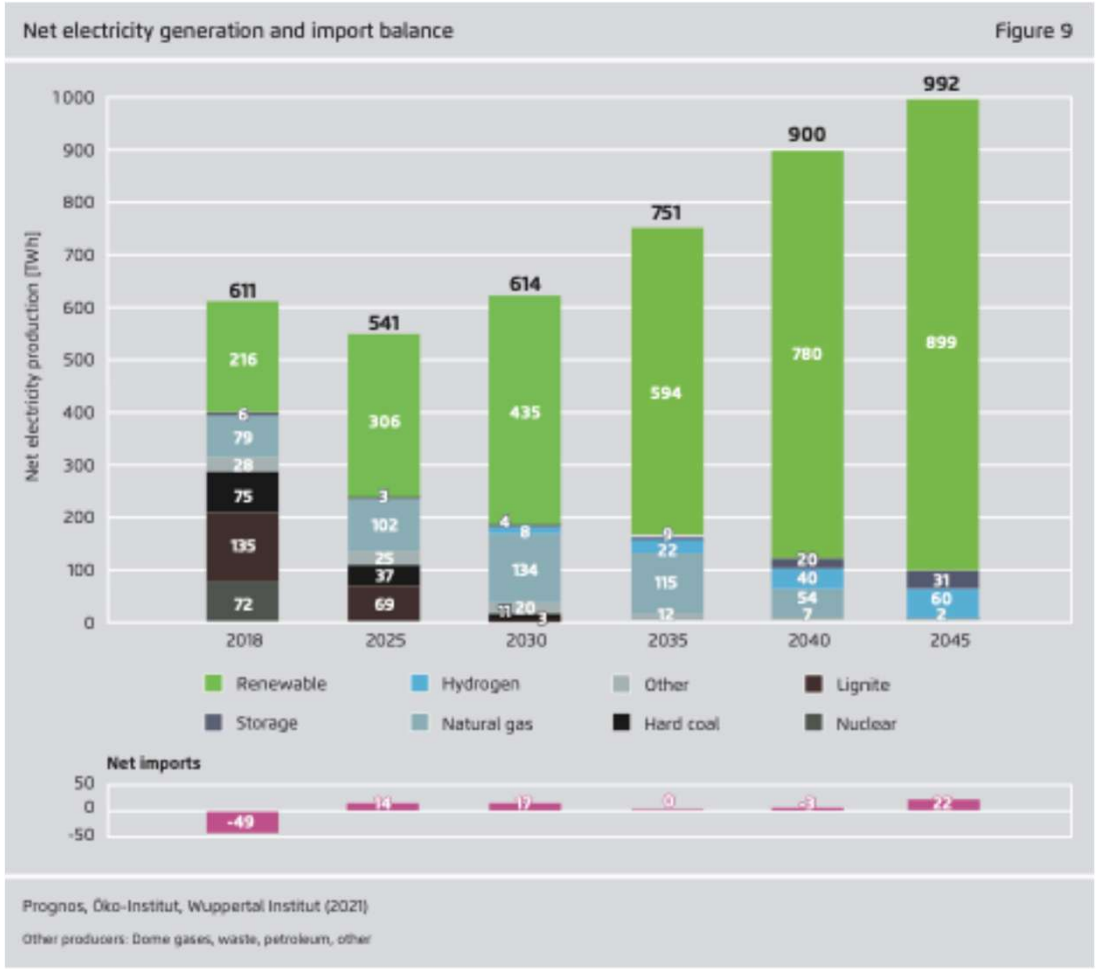
Germany: Electrification with green power

Power demand about to double:

- *Battery electric vehicles*
- *Heat pumps*
- *Industrial heat and processes*
- *Hydrogen generation*

Power supply almost GHG neutral by 2035/40

- *Electrified demand as a source of flexibility, with hydrogen power plants as backup*



Roadmaps towards GHG neutrality by 2045:
Energy scenarios, Agora EW long-term scenarios as an example

Achievements in Germany to date and challenges ahead – some examples

- *2024: 59% of RES in power generation, 55% in power consumption*
- *PV: +17 GW in 2024, now 115 GW;*
  Wind: now 67 GW onshore, 9 GW offshore; +14GW permissions in 2024, similar 2025
- *Challenge: flexibility resources needed (demand response, storage, gas/H2 power plants) => capacity mechanisms/market planned; follow energy efficiency first principle*
- *Grid expansion accelerated, but costs need to be stretched out into the future*
- *Mastered gas crisis; consumption fell ca. 10-15%*
- *Challenge in energy efficiency/electrification, especially buildings and transport sectors: e.g., conversion to heat pumps and BEVs saw setback in 2024; restart in 2025*
- *Decision on hydrogen core network (ca. 10,000 km)*
- *First carbon contracts for difference with industry (e.g., green steel, chemicals, glass, pulp and paper))*