GJETC Stakeholder Dialogue, 19 February 2026

How to Improve Energy Efficiency Policy for the Industry in Japan and Germany

in cooperation with

日独エネルギーパートナーシップチーム
Energiepartnerschaft - Team
DEUTSCHLAND - JAPAN

German-Japanese Energy Transition Council

Agenda

1. **Keynote:** Strategic framework conditions for leveraging energy efficiency potentials in German industry as a key to German competitiveness (*Fanny Knoll)*
2. **Short study presentation:** Status, trends and new approaches in energy efficiency policy for industry in Germany and Japan *(Dr. Stefan Thomas, Toshiyuki Sakamoto)*
3. **Comments/Statements from the Stakeholders**: What are the needs, expectations and concerns among businesses regarding energy efficiency policy? *(Ralph Kremp)*
4. **Deep-dive discussion** *(Dr. Akamitl Quezeda, Eiji Ohira)*
5. **Closing remarks** *(Dr. Stefan Thomas, Toshiyuki Sakamoto)*

GJETC Council Meeting, February 19/20, 2026

Input for the Stakeholder Dialogue and Members' discussion on ‚How to improve energy efficiency policy for industry '

Stefan THOMAS, SAKAMOTO Toshiyuki

Agenda

1. Introduction
2. Energy efficiency, competitiveness and GHG reduction
3. Status, trends and new approaches in energy efficiency policy for industry in Germany and Japan
4. Case study 1: How to improve the benchmark regulation of industrial energy efficiency in Japan, with potential implications for EU/Germany
5. Case study 2: How to improve practical support for industries, including SMEs, to implement energy efficiency in Germany and Japan
6. Joint recommendations

1. Introduction

1. Although energy efficiency has increased in the industrial sector, studies demonstrate that enormous **cost-effective potentials and many co-benefits** can be realized when market barriers are removed.
2. Improving energy efficiency is often cost-effective for society as well as for industrial companies. In this case, implementing the cost-effective improvements will both improve the firms' **competitiveness** and contribute to **mitigating climate change**.
3. Given the multiple **barriers** to energy efficiency, improving energy efficiency ***policy*** is key to implement more of the cost-effective energy efficiency potentials in the industry sector.
4. This will also contribute towards the COP-28 target of doubling the worldwide rate of energy efficiency improvements by 2030.
5. The **GJETC** already studied the more effective overall governance for energy efficiency and the specific policy mix for the industry sector in 2023/24
6. This year, we intend to **dive deeper** into the discussion on how to improve the policy mix for industry, with two **case studies** on 1) The **benchmark regulation** of industrial energy efficiency in Japan and 2) How to improve **practical support** for industries, including SMEs, to implement energy efficiency in Germany and Japan

2. Energy efficiency, competitiveness and GHG reduction (1)

Good progress in the past …

IEA (2025): since 2000, **energy intensity** fell

- 2.1 %/yr in Japans industry *overall* and
- 1.9 %/yr in EU industry *overall* and 3.4 %/yr in EU *manufacturing* industry

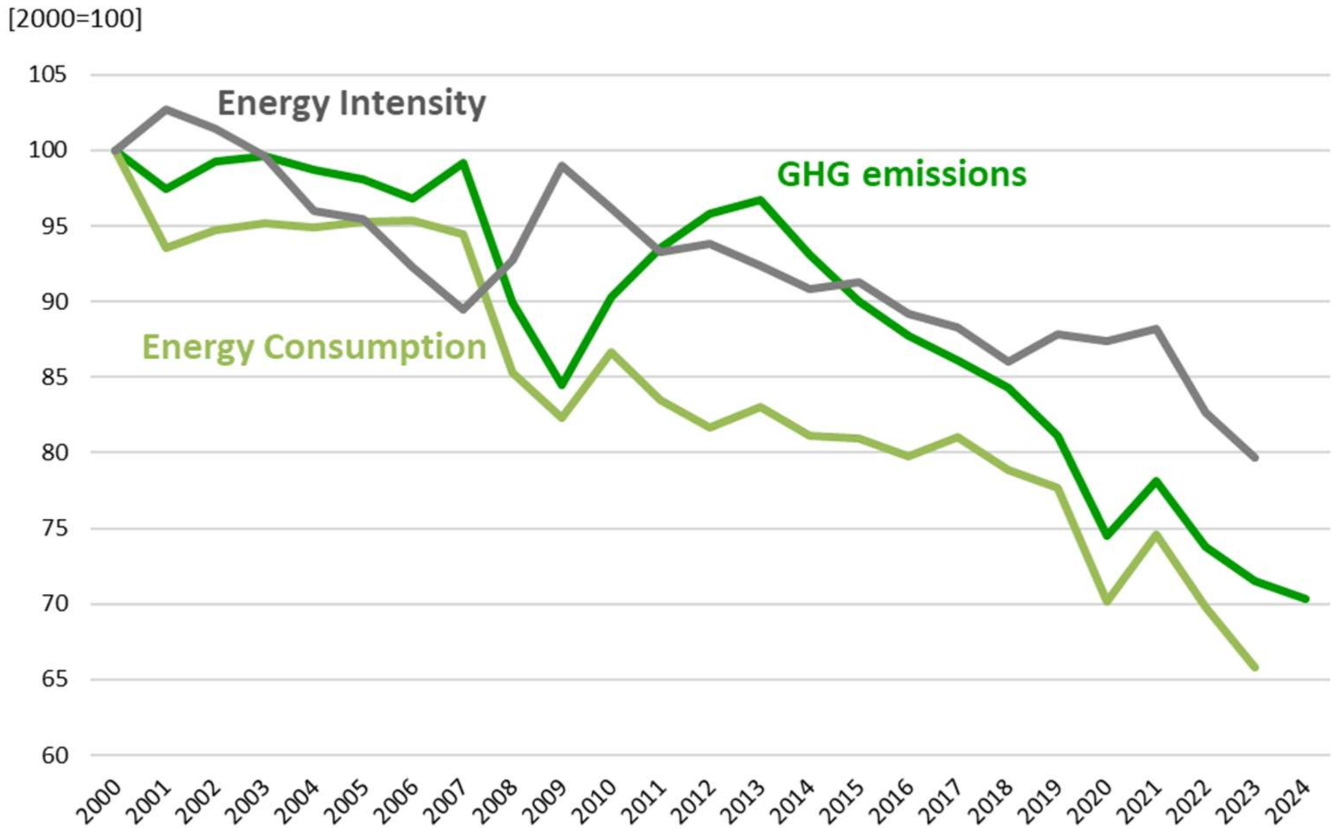
(including structural change)

GHG emissions reductions by a large part driven by energy efficiency:

- In Germany, 2010-24 change in industry sector emissions -17 % (UBA, 2025: Emissionsdaten 2024)
- Change in energy consumption: -14 %, almost exclusively from energy efficiency (https://www.indicators.odyssee-mure.eu/decomposition.html)
- In Japan, 2010-24 change in industry sector emissions -22 % (National Institute for Environmental Studies, 2025: The GHG Emissions Data of Japan)
- 2010-2023 change in energy consumption -24 % (EDMC, 2025: Handbook of Energy & Economic Statistics)

2. Energy efficiency, competitiveness and GHG reduction (2)

Japan's GHG emissions, energy consumption and energy intensity in industry

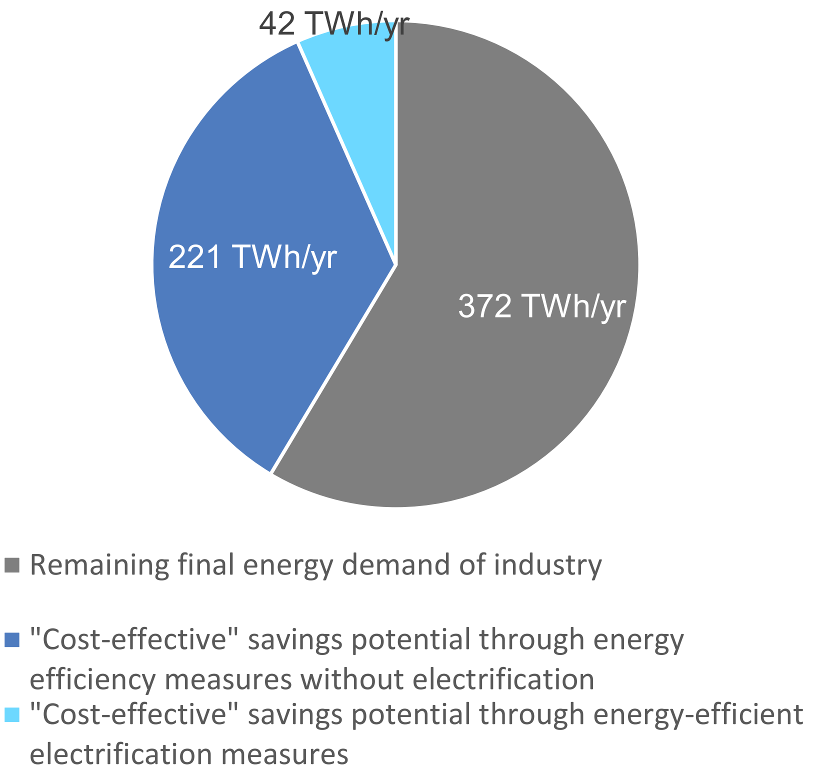


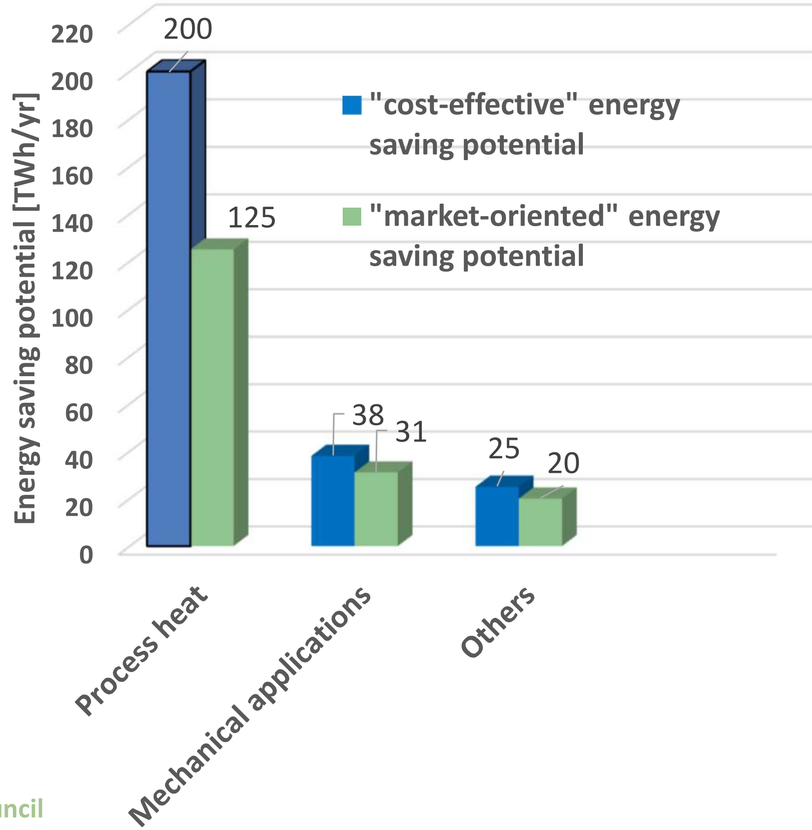
- ***In Japan, 2010-24 change in industry sector emissions -22 %*** *(National Institute for Environmental Studies, 2025: The GHG Emissions Data of Japan)*
- ***2010-2023 change in energy consumption: -24 %***
- ***2010-2023 change in Indices of Industrial Production (IIP): -8%***
- ***2010-2023 Change in Energy intensity: -17.1 %*** *(EDMC, 2025: Handbook of Energy & Economic Statistics)*
- ***Fossil fuel share in the power mix increased after 2011.***

2. Energy efficiency, competitiveness and GHG reduction (3)

… but still a lot of cost-effective potential

40 % of cost-effective savings potential in Germany, of which 28 % < 3 yrs payback („market-oriented“)





Source:

Meyer et al. (2025):

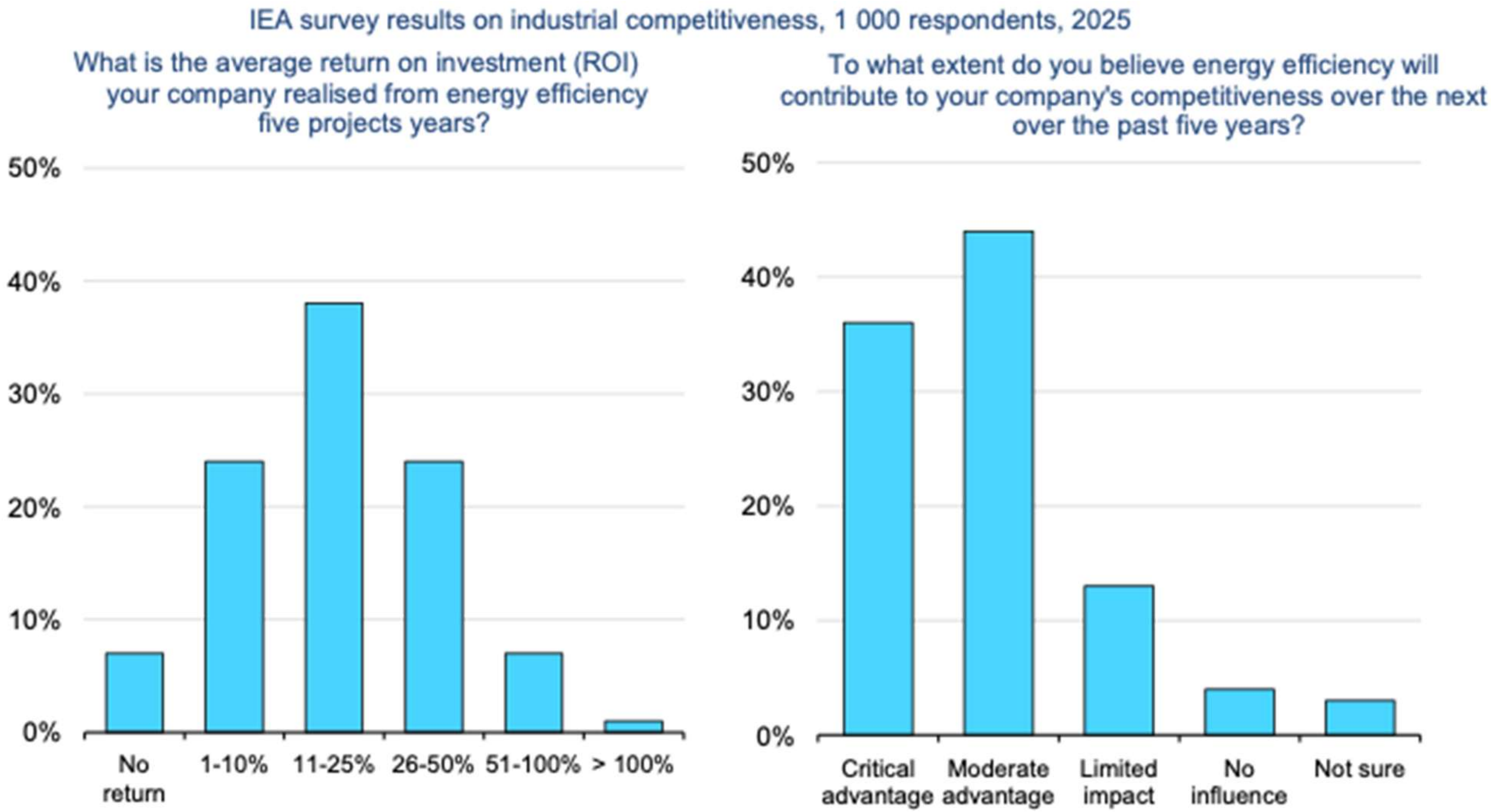
Economic and business assessment of energy efficiency in industry

3. Energy efficiency, competitiveness and GHG reduction (4)

High average ROI for most energy efficiency investments and competitive advantages expected

Source:

IEA (2025): Gaining an Edge. The Role of Energy Efficiency in Industrial Competitiveness



3. Energy efficiency, competitiveness and GHG reduction (5)

Additional aspects and opportunities

- Energy bills/energy productivity matter in the end, not the energy price alone
- Wider benefits include:

1. For the company
   - Increased productivity: Efficiency measures reduce process instability, leading to less downtime, fewer equipment failures, and higher quality control.
   - Improved resource utilisation: Optimisation of energy use frequently leads to simultaneous reductions in material and water inputs, enhancing resource efficiency.
   - Enhanced operational performance: Better energy management improves working conditions, extends equipment lifespan, and lowers maintenance costs.
   - Innovation and market position: Investing in cutting-edge efficient technology enhances a firm’s image, improves its resilience to future price shocks, and increases the appeal of its products to increasingly sustainability-conscious global markets.
2. For the overall economy
   - Contributions to the value added: From sales of energy efficient technologies, productivity increase and possibly from an increased spread between resource costs and sales prices.
   - Increases in employment.
   - Expanding rippling effects from the sales of energy efficient technologies.

3.1 Status and trends in energy efficiency policy for industry in Germany and Japan (1)

Policies according to the typology of instruments presented in GJETC 2023/24 study

Policy type	Existing or planned policies in Germany/EU	Existing or planned policies in Japan
Targets and strategies	No sectoral EE target, but overall: Absolute savings: 26.5% of final energy / 39.3 % of primary energy by 2030 compared to 2008; Policy mix included in NECP	Overall law on energy conservation; Strategic Energy Plan every 3 years, 6th SEP: saving 18% final energy vs. BAU by 2030; 7th SEP: saving 25-28% final energy vs. 2013 by 2040
EE policy infrastructure and funding	**Agencies**: German energy agency (dena), BfEE; State and local energy agencies; KfW and BAFA: handling subsidies. **Funding**: Government budget (Climate and Transformation Fund) and KfW (raising capital from markets), 2025 infra-structure package: €100 bn over 12 yrs; Support for energy services development	**Agencies**: ANRE ; NEDO; SII (Sustainable open Innovation Initiative): handling subsidies (application, review, decisions for subsidy provisions, and report to METI) For industry EE regulation: Groups for each industry, ministries and agencies have jurisdictional organization for them; **Funding**: Government budget, GX Economy Transition Bonds
Eliminating market distortions	Energy taxation, EU emissions trading systems I and II, national ETS	Energy taxation, Emissions trading systems (GX ETS), GX surcharge

3.1 Status and trends in energy efficiency policy for industry in Germany and Japan (2)

Policies according to the typology presented in GJETC 2023/24 study

Policy type	Existing or planned policies in Germany/EU	Existing or planned policies in Japan
Regulation	• If energy usage > 7.5 GWh/yr: Mandatory energy or environmental management system • If energy usage > 2.5 GWh/yr: develop & publish mandatory EE implementation plan; government now wants to increase thresholds; • EU Ecodesign MEPS and efficiency labelling for equipment, e.g. motors and VSDs, fans, air heaters/coolers, pumps, transformers, lighting	• If energy usage > 1,500 kloe/yr 1) Appointment of a qualified energy manager. 2) Submission of medium- to long-term plans (including Shift to Non-fossil Energy). 3) Periodic reports on energy usage (Fossil & Non-fossil). 4) Efforts to improve energy efficiency by 1% annually (now using benchmarks). • Top-Runner scheme and label for equipment
Planning	Heat and cold supply plans for municipalities; Waste heat inventory	Submission of qualitative targets for the installation of rooftop solar power generation facilities
Information and Advice	Subsidies for energy advice mainly for SMEs; Advice offered by energy agencies	Energy conservation audits for SMEs via ECCJ or subsidies through SII. Public recognition (S-class status) for companies achieving benchmark targets.

3.1 Status and trends in energy efficiency policy for industry in Germany and Japan (3)

Policies according to the typology presented in GJETC 2023/24 study

Policy type	Existing or planned policies in Germany/EU	Existing or planned policies in Japan
Incentives and Financing	Investment subsidies, also for energy management equipment&tools: Federal Support for Energy and Resource Efficiency in Businesses (EEW), ca. EUR 1 bn /yr	Investment subsidies: JPY 700 bn over 3 yrs; higher rates for SMEs
Capacity Building and Networking	• Commercial training programs; • 500 ‚Learning Energy Efficiency Networks‘ (LEEN networks); • Local ‚Ökoprofit‘ networks mostly of SMEs and possibility to join a club	• National energy manager training and certification; • Networking/exchange of industrial energy managers • Energy conservation local partnership system
RD&D and BAT promotion	• BMWE and BMFTR energy research program; • EU Horizon program; • Federal states using EU structural funds; • Public procurement of BAT	• NEDO support for RD&D; • Annual award program for factories and offices with high levels of energy efficiency measures

3.2 Remaining policy gaps in Germany

Progress in energy efficiency has always been made in German industry, and the **policy mix** includes instruments of **all nine major types**, but **technology progress** still creates **high cost-effective EE potential** => need to **improve policy mix further**, e.g. through following measures

Targets and strategies: Lack of a sectoral energy efficiency/savings target for industry sector;
EU Energy Efficiency Directive (EED): ‚Energy Efficiency First' principle must be strategically adopted in German legislation and governance, implementation is overdue

EE policy infrastructure, governance and funding:

- No comprehensive energy efficiency governance structure for coordination and process responsibility to reach decided national efficiency targets: Multitude of ministries and agencies with scattered responsibilities
- Need to implement energy efficiency first principle in all policy, planning, major investment decisions
- No EE obligations for energy companies
- Little energy performance contracting for industry

Specific policies:

- Weak links between energy management/audits and implementation (practical support and incentives too weak)
- Lack of independent active guidance and coaching through projects particularly for SMEs

3.2 Remaining policy gaps in Japan

- Over the past years from the time of oil crises in 70s, Japan's industry has been striving its efforts to explore additional rooms for energy efficiency and conservation.
- Due to this incessant as well as relentless efforts, finding additional room for improving energy intensity faces difficult challenges. Policies are in place, while additional regulatory approach may require balance against economic competitiveness of industry.
- Nevertheless, leapfrog in energy efficiency is possible by overcoming the following barriers:

1. Relative **slow progress on digitalization and AI use** for the optimal industrial production and energy use
2. **Shortage of human resources, understanding and capital by SMEs** on energy efficiency
3. **Enhancement of the role of third parties**, such as banks, and local experts (such measure already being implemented as "local partnership system")

3.3 New approaches for improving effectiveness of the policy mix for energy efficiency in industry and overall governance

Regarding EE governance (targets, roadmaps, policy infrastructure and funding, and prices):

1. **Efficiency roadmap up to 2030/2045 and extended Energy Efficiency Laws**
   with ambitious and binding efficiency targets for 2030 and 2045/50 and effective EE governance
2. **Comprehensive bottom-up studies on saving potentials, benefits, costs and co-benefits** to motivate ambition, covering cross-sectoral techonologies and processes, multiple impacts; including integrated energy and material efficiency analysis
3. **National Energy Efficiency Agency within a polycentric institutional setting**
   dedicated to EE and resource efficiency, with own funds, bundling efforts (Germany), and with local network of One-Stop-Shops
4. **Improved monitoring of progress and gaps**
   yearly (as in Japan) or biyearly monitoring, key indicators that can well represent the policy target
5. **Establish a strong Efficiency Lobby organization**
   Strenghten DENEFF in Germany, establish organization in Japan

3.3 New approaches for improving effectiveness of the policy mix for energy efficiency in industry and overall governance

Sector-specific EE policies for industry:

1. **Strengthen links between energy management/audits and implementation**
   e.g. through implementation plans, One-Stop-Shops, networks, active linking to financial incentives
2. **Establishment of efficiency networks for each sector**
   sharing information between energy managers and with SMEs, solid coordinator required
3. **Strengthen the policy link between energy and resource efficiency / circular economy approaches**
   as e.g. in Ökoprofit schemes, and through energy&resource efficiency agencies and incentive schemes
4. **Promote ESCOs and Energy Performance Contracting to address initial investment barriers:**
   policy support via loan guarantees and subsidized independent coaching of customer companies
5. **Accelerated depreciation allowance for energy efficiency**
   to improve cost-effectiveness and appetite for investments
6. **Utilization of industrial waste heat for heating supply;**
   especially in Germany, support e.g. via a registry of potentials, default guarantees or insurance
7. **Integrate demand-side response for system flexibility and energy efficiency**:
   Provide price incentives and make it an integral part of energy efficiency policy instruments
8. **Promote the use of digital tools,** e.g. AI-supported energy management

4. Case study 1: How to improve the benchmark regulation of industrial energy efficiency in Japan

Background:

- Japan introduced the benchmark regulation in 2009.
- Prior to this, the legal target was an annual improvement in energy efficiency of 1%. However, after many decades of efforts, some companies had achieved very high efficiency, so **improving by 1% every year became difficult**. In these circumstances, the benchmark regulation was developed.
- The aim of the regulation is **to evaluate high-efficiency companies fairly**, while also incentivizing low-efficiency companies to catch up with the higher-efficiency group.
- After 15 years of experience, Japan is discussing **further improvements to the benchmark regulation**, which could have implications for Germany.

4. Case study 1: How to improve the benchmark regulation of industrial energy efficiency in Japan

Research questions:

1. What efforts have been made to improve the system?
2. What is the effect of the revised Energy Conservation Act (ECA) on the BM system?
3. What is required to make the system more advantageous for companies, instead of burdening them?
4. What are the primary concerns about the relationship between the CO_2 benchmark in GX-ETS and the energy efficiency benchmark in ECA?

4. Case study 1: How to improve the 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.

Key for Benchmark System

(1) Business
Identify industries and business types that consume energy by similar or very similar methods

(1) Benchmark Index
Set evaluation indicators taking into consideration the special characteristics of industries and business

(1) Target level
Set a high standard to aim for in the medium to long term (top 10% to 20%)

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

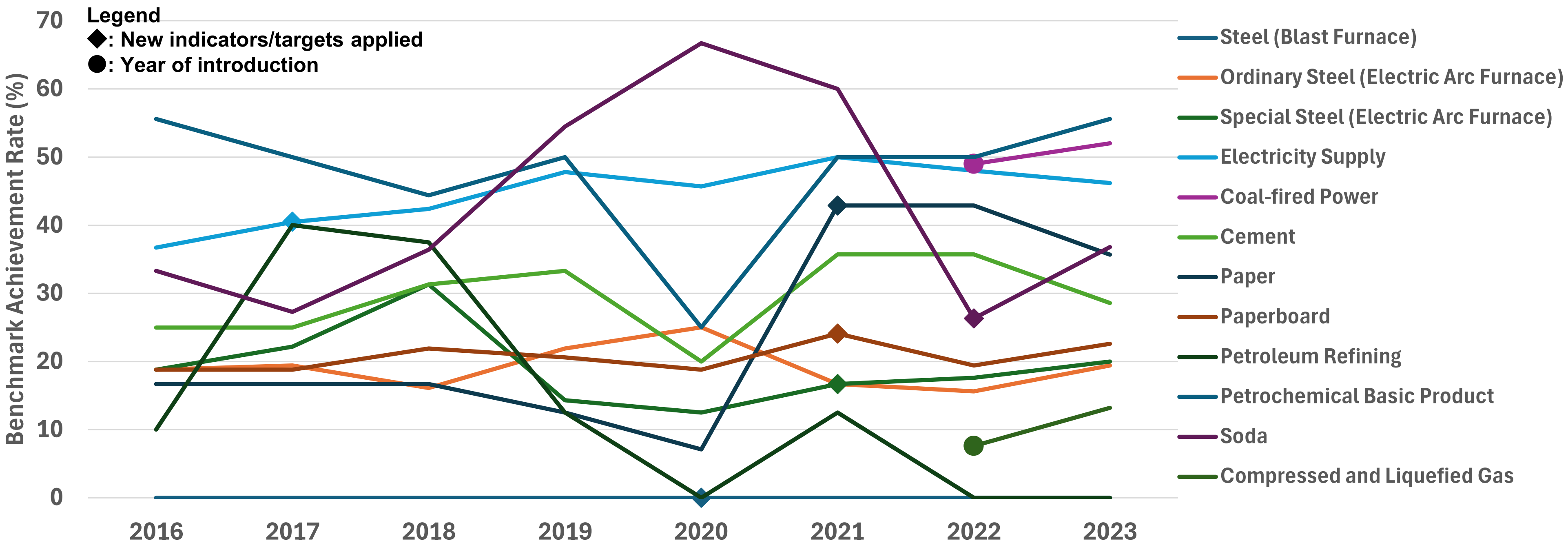
- Introduced in 2009, BM System now covers 7 industries/12 categories for the industry (cover 70% of Industrial & Commercial energy consumption)
- Target is to be the **Top level** (10 to 20%)- “Top runner program for industries”-

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

4. Case study 1: How to improve the benchmark regulation of industrial energy efficiency in Japan

Efforts to enhance the system (1): Annual assessment

- The progress towards **Benchmark (BM) target is assessed annually**, and consideration is given to **whether to review the BM index and to expand them into new industrial sectors.**



Source: Prepared from periodic reporting data based on the Energy Conservation Act

4. Case study 1: How to improve the benchmark regulation of industrial energy efficiency in Japan

GJETC

Efforts to enhance the system (2): Classification Evaluation System

- Companies are classified into 4 categories (SABC) based on their energy efficiency performance.
- B class might be subject to on-site inspections, report submission to verify compliance. If the investigation finds that the compliance status is not sufficient, it will be designated as a Class C and receive guidance.

S Class(Superior)

★ Achievement of ① 1% improvement for 5 years average Or ② benchmark target

☆Publication of company name on the METI website, Submission frequency once every few years (revised in 2019)

6,257(52.7%)(FY2024)

A Class(Average)

★do not belong to either S class or B class

3,775(31.8%)

B Stagnant

1,840 (15,5%)

C

B Class

★①Effort targets have not been achieved and energy intensity has increased compared to the previous year for the last two consecutive years Or ②Average energy intensity for 5 years increased by more than **5%**

☆Send notification and conduct focused on-site surveys.

C Class

★Those companies in Class B with substantially poor performance

☆Guidance by the government

Source: Agency for Natural Resources and Energy 省エネポータルサイト（Energy saving portal site);edited

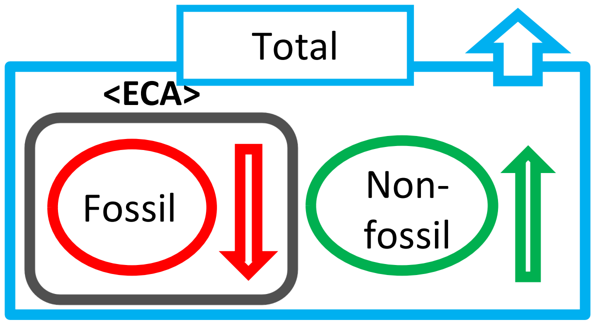
4. Case study 1: How to improve the benchmark regulation of industrial energy efficiency in Japan

Future challenges (1): The impact of the Energy Conservation Act Revision

- Non-fossil energy sources are now subject to periodic reporting along with existing fossil energy sources due to the amendment to the Energy Conservation Act(ECA).
- Before the amendments, switching from fossil-based energy to non-fossil-based energy was considered energy conservation (albeit there was a possibility that overall energy consumption would increase).

Before the amendment

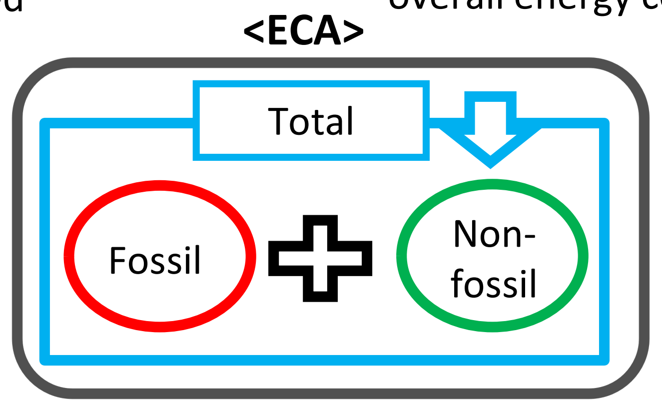
Only fossil energy consumption is reported



After the amendment

Both fossil and non-fossil energy consumption are reported

Energy conservation efforts are necessary to reduce overall energy consumption



4. Case study 1: How to improve the benchmark regulation of industrial energy efficiency in Japan

Future challenges (2): CO_2 benchmark and energy efficiency benchmark

- GXETS will be in full operation starting in April 2026. The CO_2 BM could be formulated quickly based on energy efficiency BM.
- Despite the policy purposes of the two systems being different, considering ways to reduce the reporting burden is necessary.

	Energy Efficiency BM	CO2 BM
Threshold	Energy consumption more than 1,500kl/year (oil equivalent)	Corporations whose direct CO2 emissions have averaged over 100,000 tons over the past three years
Introduction	2009-2010: for energy-intensive industrial sectors such as steel, electricity supply, and cement	Mandatory from April 2026
Target Sector	Industry, Power and energy conversion, Commercial	Industry, Power and energy conversion, Transportation
Number of Covered Business	Total: 1,656（Industry: 290, Commercial: 1,366）（2024 Report）	300-400
Index	Energy consumption per activity (production, sales, etc.)	CO2 emissions per activity (production, fuel consumption)
Purpose	Businesses are evaluated on their energy conservation status using industry-wide indicators, and each business strives to achieve their energy conservation goals.	Criteria for free allocation

4. Case study 1: How to improve the benchmark regulation of industrial energy efficiency in Japan

Research findings:

1. The use of BM allows for comparison of efforts within the same industrial sub-sector and evaluation of cumulative energy conservation efforts.
2. The benchmark target level is a level that only the best 10-20% of company can meet, which is also high by international standards.
3. The review will be conducted in the year 2030 or when the majority of companies in the industry have reached their benchmark targets.
4. To date, the BM system has focused on raising BM targets, improving indicators, and expanding the range of industries covered.
5. The revised Energy Conservation Act, which took effect in April 2023, mandates the rational use of all energy sources, including non-fossil energy sources, as well as fossil energy sources.
   In addition, there are sectoral targets for the use of non-fossil electricity and/or fuels.
6. The CO_2 BM could be formulated quickly based on energy efficiency BM. Despite the policy purposes of the two systems being different, considering ways to reduce the reporting burden is necessary.

4. Case study 1: How to improve the benchmark regulation of industrial energy efficiency in Japan

Implications for the EU/Germany:

- In the EU, energy efficiency benchmarks (BAT) are defined for approval of new industrial plants, while CO_2 benchmarks of existing operations are used for free allocation of ETS-1 allowances. The free allocation is also incentivized by a link to the obligatory energy management systems.
- The energy efficiency BM in Japan is designed to assess a company's energy-saving efforts fairly and encourage further efficiency progress. Efforts will be made to achieve even greater efficiency by presenting efficiency indicators that can be compared among companies while taking into consideration the competitiveness of the company. Reconsidering the definition of indicators, the appropriateness of categories, and devising ways to improve data reliability is necessary.
- Policies such as benchmarks and targets for energy efficiency, renewable energies, and CO_2 emission reductions for companies all have their specific benefits, but create the challenge of coordination and coherent integration.
  In **Japan**, these challenges exist with the EE and CO_2 BM systems for industry companies.
  In the **EU and Germany**, the BAT for *new* plants and the ETS-1 CO_2 BM for *existing* operations may be distinct enough, but similar coordination challenges exist for the overall EU targets system towards Member States, including Germany.

5. Case study 2: How to improve practical support for industries to implement energy efficiency (1)

Background:

- Both countries have obligations for energy management or energy audits and financial incentive schemes to support implementation
- Still, practical support may be needed to overcome a lot of barriers for actual implementation
- Cooperation of local agencies and a national Energy Efficiency Agency (‘polycentric governance’) acting as *One-Stop-Shops* to support
  1) energy management or audits and
  2) implementation of cost-effective actions (including the acquisition and management of financial incentives and financing) may be decisive
- Other concepts include mandatory (as in Germany) or voluntary implementation plans, coached EE networks of companies, and active linking to financial incentives

5. Case study 2: How to improve practical support for industries to implement energy efficiency (2)

Research questions:

1. What are the practical barriers for industries to implement energy efficiency projects?
2. Which existing policies and measures should be strengthened or advanced, which new ones are needed to overcome these barriers through practical support?
3. What could be the role of One-Stop-Shops and Energy Efficiency Networks, and how could their basic costs and services be funded?

5. Case study 2: How to improve practical support for industries to implement energy efficiency (3)

Research findings (1):

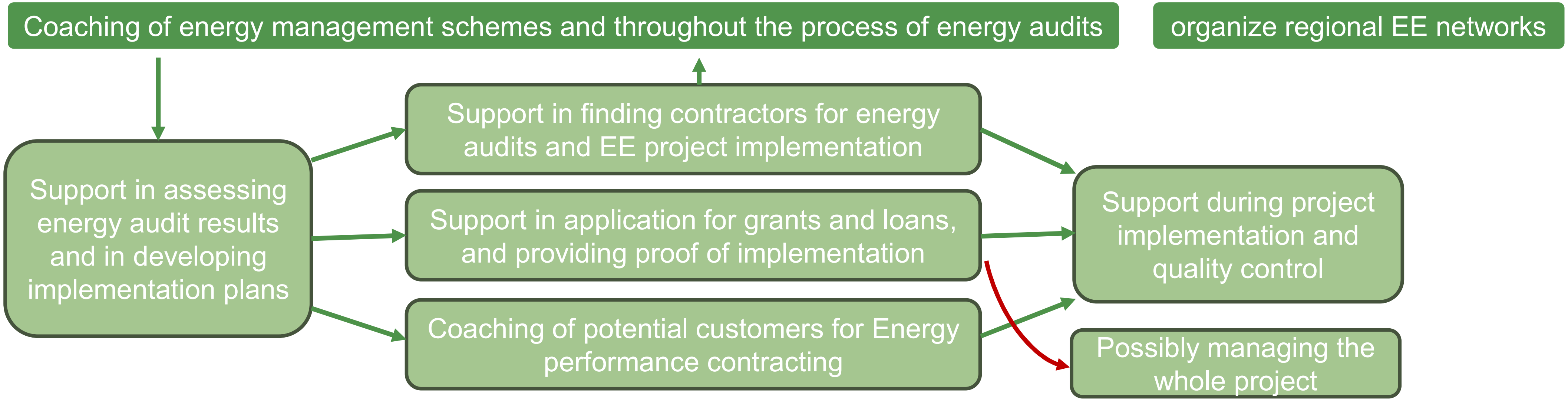
1. Major implementation barriers identified in literature (e.g. GJETC, 2024):
   - Requirement of short payback times (< 3 yrs), as evidenced by high ROIs in IEA survey
   - Investing in products and productions takes priority over efficiency for resource cost savings
   - Lack of trust in savings, fear of negative impacts, lack of knowledge/trust in positive wider benefits
   - Lack of knowledge and dedicated staff (shortage of human resources) for detailed assessment, planning, and implementing energy efficiency implementation projects,
     and for managing applications to incentive programs or using Energy performance contracting
2. Instruments to address these barriers
   - Financial incentive programs: change economic priorities and awareness of top management
   - One-Stop-Shops, e.g. provided by regional Energy Efficiency Agencies: overcome lack of knowledge and dedicated staff, build trust
   - EE networks of companies/energy managers: build trust and knowledge
   - Energy performance contracting: address all barriers; but may need coaching of customers!

5. Case study 2: How to improve practical support for industries to implement energy efficiency (4)

Research findings (2):

3. One-Stop-Shops (1)

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!

5. Case study 2: How to improve practical support for industries to implement energy efficiency (5)

Research findings (3):

3. One-Stop-Shops (2) need funding but may make use current dispersed funds more effective too

   Funding likely needs a mix of public basic funding and fees plus subsidies for projects:

   - Basic funding needed to attract clients and start the project journeys, such as:
     - General information and communication activities, including physical office
     - Initial advice on energy management, audits, solutions, projects
     - Possibly for *setting up* an energy efficiency network
   - Fees may be possible for support and coaching activities, but will probably need subsidies per activity, e.g., for
     - Support in project assessment, planning, funding applications, implementation, quality control
     - Coaching for energy management
     - Coaching of potential customers for Energy performance contracting
     - *Managing* an energy efficiency network
     - Possibly for professional training of EE consultants
   - Competitive fees appropriate if they manage a whole project

5. Case study 2: How to improve practical support for industries to implement energy efficiency (6)

Research findings (4):

3. Energy Efficiency Networks
   - Provide room for peer-to-peer exchange on opportunities and good practice;
     - Initial energy review/audit, commitment to targets and monitoring, reporting, benchmarking useful
   - Peers can be from same sector in a region or from different sectors at local level
   - Management and coaching by a moderator
   - Funding:
     - Basic public funding advisable for *setting up* an energy efficiency network
     - Fees from participants for *managing* an energy efficiency network
   - Examples:
     - German Learning Energy Efficiency Networks initiative
     - Japan's Energy conservation local partnership system (a combination of OSS and network):
       - A framework launched by the ANRE from 2024 to build a system to support energy conservation in SMEs in the region, with over 200 financial institutions (local banks) and energy conservation support organizations as partners.
       - In support of energy conservation in the region, ANRE and the Partnership Secretariat will share information on energy conservation policies and initiatives with partner organizations who are convenient consultation points for SMEs.

6. Joint recommendations (1)

GJETC Recommendations after the Stakeholder Dialogue of 19 February 2026:

1. Aim to harness the cost-effective potential as much as possible

   Both Japan and Germany have already achieved strong energy efficiency improvements in industry, supported by the respective national policies. Still, as technologies develop, there is considerable further cost-effective energy efficiency potential in industry, and a large part of it is cost-effective for society.

   Harnessing this cost-effective potential offers a triple win: for climate change mitigation and other environmental improvements, for affordability of energy costs and competitiveness, and for security of energy supply.

6. Joint recommendations (2)

GJETC Recommendations after the Stakeholder Dialogue of 19 February 2026:

2. Strengthen the policy mix for energy efficiency in industry

   In order to better harness the cost-effective potential of energy efficiency in industry for climate change mitigation and improving competitiveness, the existing policy mix needs to be strengthened further in both countries. This is needed to overcome many practical barriers to implementation of energy efficiency projects as well as to ensure that industrial companies also fully experience the benefits of energy efficiency investments that are cost-effective to society.

   Policy instruments at hand concern both (1) **the overarching governance framework** with a) policy targets and strategies serving as a signal to the market actors, b) the agencies, budget funding, and private finance needed to implement policies and investments, and c) appropriate energy and carbon pricing, and (2) **the sector-specific instruments** of a) information and targeted advice, b) financial incentives and financing, c) regulation, such as the requirement to install energy management or conduct energy audits, or energy performance requirements for equipment, d) local or industrial cluster energy planning, e) networking and professional training, and f) support for research, development, and demonstration.

6. Joint recommendations (3)

GJETC Recommendations after the Stakeholder Dialogue of 19 February 2026:

3. Improve affordability while promoting energy efficiency through carbon pricing

   High energy prices provide an incentive for energy conservation, but excessively high prices can lead to industrial hollow-out. Neither the Japanese nor German governments desire industrial hollow-out. Therefore, **careful design is required** for carbon pricing schemes to provide incentives for energy conservation while simultaneously maintaining energy prices at an affordable range for industry. Furthermore, **revenues generated** by the carbon price in industry should be used to support energy conservation, decarbonization, and innovation of industry.

6. Joint recommendations (4)

GJETC Recommendations after the Stakeholder Dialogue of 19 February 2026:

4. Provide more practical support for energy efficiency project implementation with national coordination

The number of implementation projects needs to be increased, and their effectiveness improved, by providing practical support to initiate and accomplish actual project implementation. This will improve the link between the existing regulation, information, and financial incentive policies by overcoming the practical implementation barriers, such as lack of expertise and trust in energy efficiency solutions.

Such practical support could be provided by local or regional **one-stop-shops**, connecting not only industry companies to solution providers, but also networking with the providers. It could also be enhanced by organizing industrial **energy efficiency networks** enabling peer-to-peer exchange and commitment to energy efficiency. It can build on existing local energy and climate agencies/managers and their networks. Such a structure for practical support will need core funding from the national level as well as provision of tools, coordination and monitoring of activities from a national energy agency that is responsible for achieving national energy and climate targets.

6. Joint recommendations (5)

GJETC Recommendations after the Stakeholder Dialogue of 19 February 2026:

5. Take a holistic approach for system thinking and practice

   This thinking and implementation is required not only for the practical support policies, but for all energy efficiency policies for all sectors, including industry. Examples are:

   a) Applying the Energy Efficiency First Principle to all policies and planning activities for energy supply. Whenever energy efficiency is able to achieve the objectives of matching supply and demand in a more cost-effective way than building or upgrading energy grids or power plants, implementing efficiency should be given priority.

   b) Integrating energy and material efficiency: improving material efficiency alongside energy efficiency is crucial, and achieving an optimal balance between the two is desirable. For example, regulating the embodied carbon of building materials can encourage relevant manufacturers to save energy.

   c) Integrating i) energy efficiency that leads to energy savings and ii) demand-side response. Energy efficiency does not mean to reduce energy consumption in any case, but also includes demand-side flexibility: For instance, when the output from variable renewable energies exceeds demand, it may be appropriate to increase energy consumption.

   These examples also demonstrate that the goal should be to optimize the entire energy system, rather than focusing solely on energy conservation or individual industries.

6. Joint recommendations (6)

GJETC Recommendations after the Stakeholder Dialogue of 19 February 2026:

6. Utilize AI and digitalization to maximize energy efficiency, while ensuring Energy efficiency of data centers and AI

   Ensure that new data centers are as energy-efficient as possible, e.g., with efficient processors, software, cooling, and use of waste heat.

   At the same time, harness digitalization and especially artificial intelligence to make the use of energy and other resources as efficient as possible.

   For example, the carbon intensity and price of electricity fluctuate every second. Therefore, in order to maximize greenhouse gas (GHG) emission reductions and economic benefits through energy conservation, it is essential to obtain high-resolution information and implement measures accordingly. AI and digital technologies are the tools that enable this, and their effective utilization is anticipated.

6. Joint recommendations (7)

GJETC Recommendations after the Stakeholder Dialogue of 19 February 2026:

7. Beyond energy efficiency for industry: The services from energy that we need and how we communicate about this

   Today, many people take a certain level of services from energy (such as for living space with space and water heating, a car for mobility) for granted. However, it depends on infrastructures and social practices, culture, and how we communicate social norms and, therefore, can vary between individuals, cities, and even countries. For example, Europeans are washing their clothes at 30 or 60°C, while Japanese use cold wash. Younger people in both Japan and Germany often achieve mobility without owning a car, through active and public transport, accompanied by car sharing when needed.

   More research is needed to understand such differences and how energy could be saved by changing such infrastructures and social/cultural practices, and how policy could support this.

For further information please visit gjetc.org

Thank you for your attention

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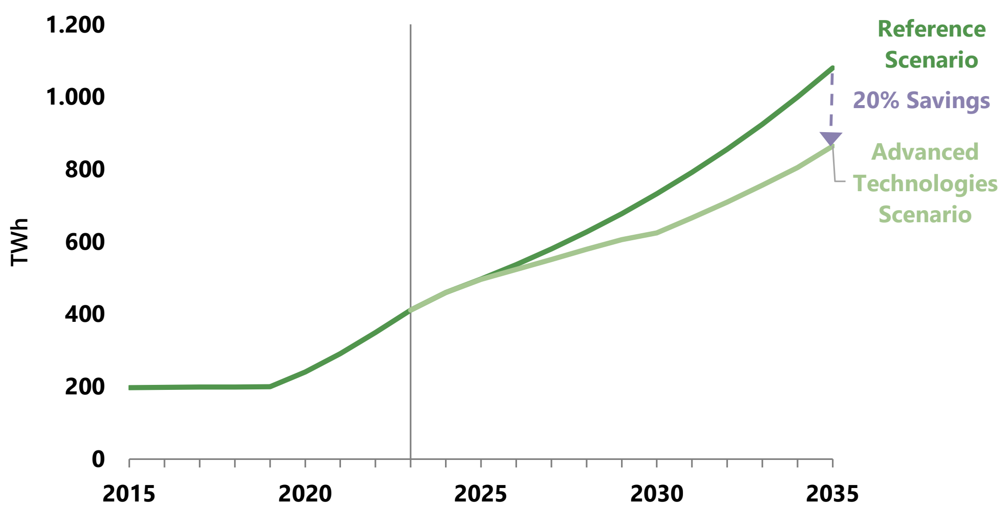
GJETC Stakeholder Dialogue, 19 February 2026

Additional Slides

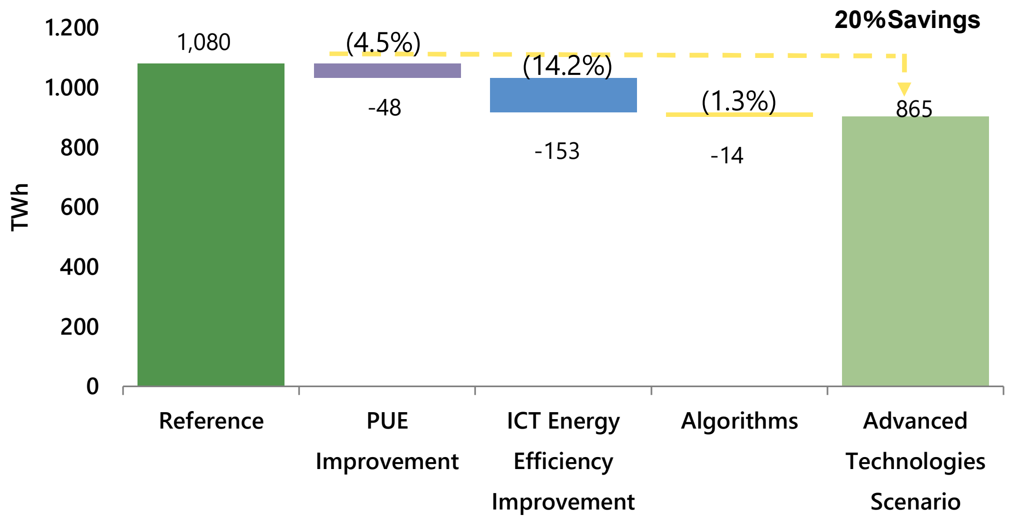
Data Centre Electricity Demand Outlook and Electricity Savings Potential（2035）

- Global data center (DC) electricity demand is expected to **more than double from the current level of 497 TWh to 1,080 TWh by 2035.**
- Improving PUE through the introduction of **high-efficiency cooling technology, ICT energy efficiency improvement** and **rationalization of algorithms** has the potential to **save electricity demand by 20% by 2035**.

Data Centre Electricity Demand Outlook（2025-2035）



Data Centre Electricity Savings Potential（2035）

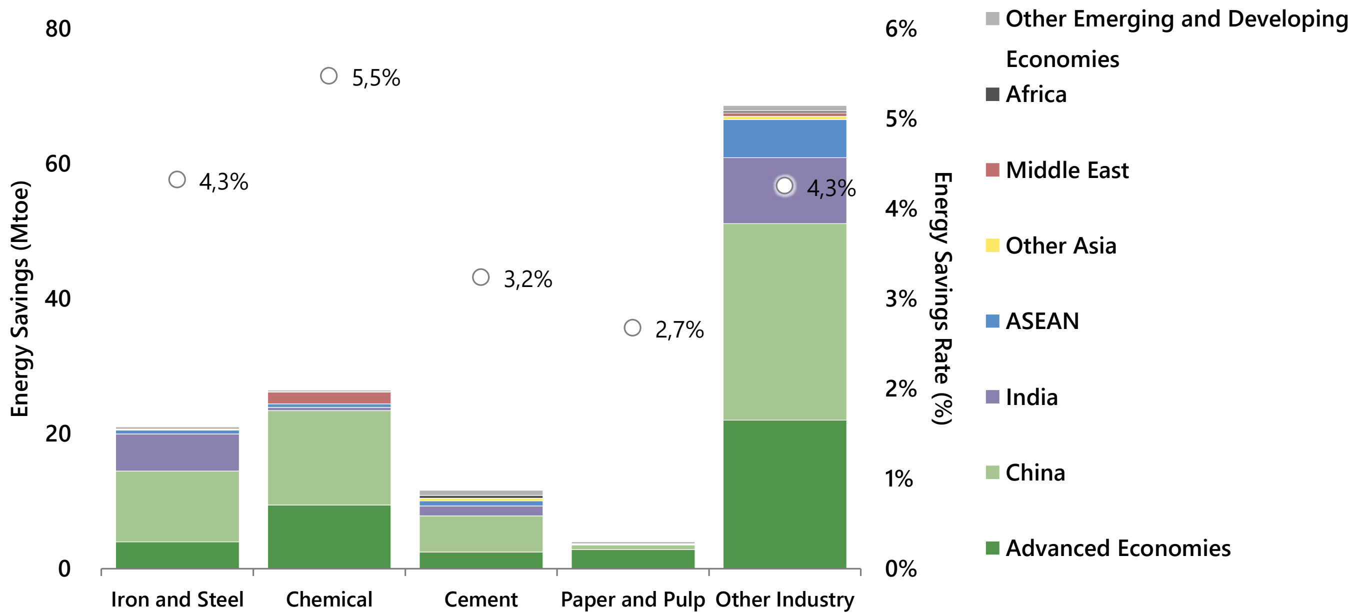


Source: Doi et al, (2026) AI and Future of Energy demand, IEEI Outlook 2026, IEEJ

Energy Savings Potential of AI in Industry （Ratio to Advanced Technologies Scenario）

- Previously, **operational improvements were mainly based on the experience and knowledge of experienced operators**, but **by combining this with AI**, energy savings become possible through dynamic control based **on real-time predictions and an integrated approach that simultaneously optimizes multiple processes throughout the factory**.
- By 2035, **the use of AI has the potential to save 2-5%** in energy compared to **the Advanced Technologies Scenario**.

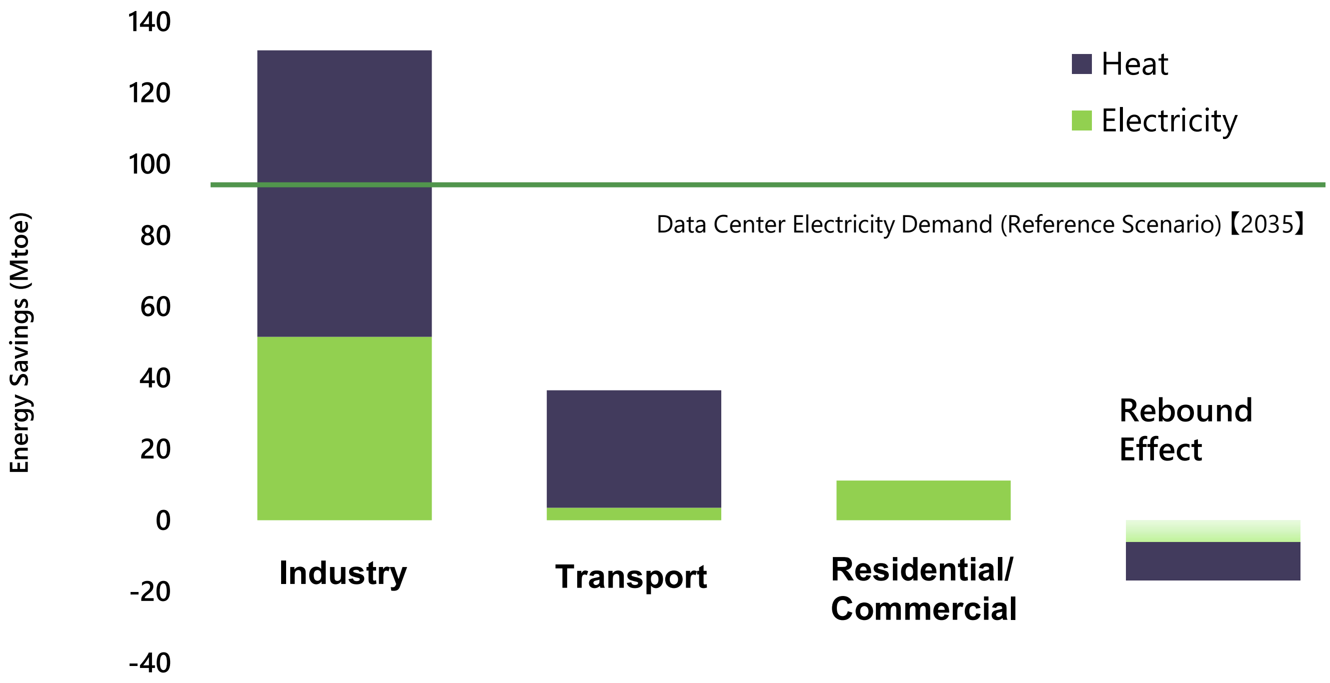
Energy Savings Potential of AI and Ratio to Advanced Technologies Scenario 【2035】



Source: Doi et al, (2026)

Energy Savings Potential of AI at the Demand Side（2035）

- Demand-side energy savings using AI have the technical potential to reach 178 Mtoe (2,088 TWh) in 2035.
- By sector, the energy demand reduction effect is greatest in the industry sector.



Source: Doi et al, (2026)

Questions for the Stakeholder Dialogue (1)

- What are the **most important barriers** or other reasons why industry is not completely harnessing the cost-effective potential of energy efficiency despite often high ROIs?
- What are the **most effective policy instruments** to induce more implementation of energy efficiency in plant investments and operation, or in dedicated EE projects?
- Do you think the suggested **enhancements to the Japanese benchmark regulations** will be appropriate and effective? Could they be enhanced further to encourage further efficiency progress, or regarding, e.g., the definition of indicators, the appropriateness of categories, and devising ways to improve data reliability ?
- What could the EU and Germany **learn from the Japanese benchmark regulations** ?

Questions for the Stakeholder Dialogue (2)

- SMEs often lack dedicated staff and resources for energy efficiency projects. What **specific support measures** would be most effective **for smaller companies**?
- Is **more practical support to industry** the way forward to increase EE implementation rates?
- **Are One-Stop-Shops** the most effective way to increase EE implementation rates? Do you miss any element in the tasks and funding suggested for them?
- Or are **energy efficiency networks** the most effective way to increase EE implementation rates? How should they best be organized and funded?

GJETC Stakeholder Dialogue, 19 February 2026

How to Improve Energy Efficiency Policy for the Industry in Japan and Germany

in cooperation with

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