

JAPAN

ENERGY EFFICIENCY GOALS

1. GOVERNMENT POLICY ON ENERGY EFFICIENCY

The government implements energy efficiency policies through regulation and economic incentives, such as subsidies and tax cut for installing efficient equipment. The Energy Conservation Law, enacted in 1979 after the oil crises, is the basis of energy efficiency and conservation regulations in Japan. It requires improving the energy efficiency of industry, transport and buildings (residential and commercial).

In 2015, the government approved the Long-term Energy Supply and Demand Outlook, which presents the ideal energy supply-demand structure in 2030 fiscal year. The Outlook includes various energy efficiency measures across the sectors, estimating a saving of 13% (50 billion litres of crude oil equivalent) from the level without energy efficiency. Japan's GHG emissions reduction target, 26% below 2013 levels by 2030 fiscal year, is based on the Outlook.

2. ENERGY EFFICIENCY STRATEGY

The government promote energy efficiency through regulation and economic incentives.

The Energy Conservation Law has regulations targeting all the main sectors (industry, buildings, and transport sectors), including:

- Regular reports on energy efficiency and efforts for energy intensity improvement of 1%/year for factories and business establishments with energy consumption of 1,500kl/year.
- Top Runner Programme (efficiency standard) for automobiles and residential electric appliances.
- Regular reports on energy efficiency implementation for specified-scale cargo owners and carriers.
- The Law also requires factories and business establishments (with energy consumption of 3,000kl/year) to appoint qualified energy managers.

Economic incentives include: Subsidies, accelerated depreciation and tax reductions for installing efficient equipment or facilities; as well as R&D subsidies for high-efficient technologies, such as high-performance heat pumps and insulation materials.

FUNDING

Economic incentive programmes are conducted by the government.

LINKS

METI Energy Efficiency: http://www.meti.go.jp/english/policy/energy_environment/energy_efficiency/

3. ENERGY EFFICIENCY ACTION PLAN

The Energy Conservation Act guides actions on energy efficiency, but there is no action plan.

4. ENERGY EFFICIENCY, INTENSITY OR EMISSIONS REDUCTION TARGETS

In 2015, the government approved the Long-term Energy Supply and Demand Outlook, which presents the ideal energy supply-demand structure in 2030 fiscal year. The Outlook includes various energy efficiency measures across the sectors, estimating a saving of 13% (50 billion litre crude oil equivalent) from the level without energy efficiency.

Japan's GHG emissions reduction target, 26% below 2013 levels by 2030 fiscal year, is based on the Outlook.

LINKS

METI Outlook: http://www.meti.go.jp/english/press/2015/pdf/0716_01a.pdf

5. SECTORAL ENERGY EFFICIENCY TARGETS

The Outlook also estimates sectoral energy savings in each sector in FY2030: 10.42 billion litre (crude oil equivalent) in industry, 12.26 billion litre in commercial, 11.60 billion litre in residential and 16.07 billion litre in transport sector.

LINKS

METI Outlook: http://www.meti.go.jp/english/press/2015/pdf/0716_01a.pdf

6. LEAD ENERGY EFFICIENCY INSTITUTIONS

Energy Conservation and Renewable Energy Department, Agency for Natural Resources and Energy, Ministry of Economy, Trade and Industry.

INSTITUTIONAL SETTINGS AND RESPONSIBILITIES

The Ministry of Economy, Trade and Industry (METI) is responsible for designing the energy policy of the economy. Within METI, the Agency for Natural Resources and Energy (ANRE) is in charge of securing stable supply of energy, promoting efficient energy use, and regulating electricity and other energy industries. The Energy Conservation and Renewable Energy Department in the ANRE covers energy efficiency and conservation policies.

STAFF AND BUDGET

Total budget for the ANRE is estimated to be JPY 2.3 trillion in the 2016-17 financial year. Staffing numbers and specific energy efficiency budget not available.

BUDGET USE

No information available.

LINKS

METI English sites: <http://www.meti.go.jp/english/index.html>

METI Policies: http://www.meti.go.jp/english/policy/energy_environment/energy_efficiency/

7. OTHER ENERGY EFFICIENCY AGENCIES

The Energy Conservation Law requires factories and business establishments (with energy consumption of 3,000kl/year) to appoint qualified energy managers. The Energy Conservation Centre, Japan (ECCJ) is in charge of implementing examination and training for qualified energy managers. The ECCJ is also involved in a number of energy efficiency activities, including energy audit/consultation, capacity building and information provision.

LINKS

Energy Conservation Centre Japan: <http://www.asiaeec-col.eccj.or.jp/index.html>

8. ENERGY EFFICIENCY INFORMATION DISSEMINATION

At the economy level, the ANRE manages a wide range of policy information, knowledge-sharing web resources. The ANRE has internet portals for general public and business for policy information dissemination. In addition, Hokkaido Bureau of Economy, Trade and Industry, METI has published a guidebook as well as launched an application for smartphone to promote energy conservation activities in residential sector.

The ECCJ publishes a monthly magazine "Energy Conservation", the only magazine dealing with energy conservation in Japan.

LINKS

ANRE Information website: http://www.enecho.meti.go.jp/category/saving_and_new/saving/general/

ANRE Information website: http://www.enecho.meti.go.jp/category/saving_and_new/saving/enterprise/

Energy efficiency guidebook: <http://www.hkd.meti.go.jp/hokpw/ouchi/h28ouchi.pdf>

9. ENERGY EFFICIENCY AWARENESS RAISING

Energy Conservation Grand Prize - This is the annual award for excellent energy conservation activities and products, organised by the ECCJ and supported by the METI. The winners are widely publicised to promote high-efficient activities and products.

LINKS

Energy Conservation Grand prize: <https://www.eccj.or.jp/bigaward/item.html>

10. GOVERNMENT SUPPORTED ENERGY EFFICIENCY TRAINING

METI provides a number of funding, tax exemption and auditing to the small and medium sized companies to promote energy efficiency training.

LINKS

METI Savings enterprise support:

http://www.enecho.meti.go.jp/category/saving_and_new/saving/enterprise/support/

METI Savings guideline: http://www.enecho.meti.go.jp/category/saving_and_new/saving/data/f27gaiyou.pdf

11. PRIVATELY OPERATED TRAINING

The ECCJ provides seminars as well as trainings related to energy efficiency. These programmes are partially order-made basis to take into account trainees' demands.

LINKS

ECCJ Training: https://www.eccj.or.jp/profile_info/minkan.html

12. GOVERNMENT SUPPORTED RESEARCH & DEVELOPMENT

The government has two main pillars in terms of R&D support; one focuses on improving efficiency in industrial processes, such as Iron & Steel (budget: JPY 2.4 billion for FY2017) and Chemicals (JPY 2.3 billion), while the other for innovative high-performance technologies across the sectors (for example, JPY 9.6 billion for the Programme for Strategic Innovative Energy Saving Technology).

LINKS

METI R&D: <http://www.meti.go.jp/main/yosangaisan/fy2017/pr/energy.html>

ENERGY EFFICIENCY MEASURES

13. COLLECTION AND MONITORING OF ENERGY EFFICIENCY OUTCOMES

At the economy level, the ANRE is responsible for energy efficiency policy and analysis. Assessments of the programmes are generally carried out ex-post either by the ANRE or outsourced to external institutes. Examples of these assessments include: analysis by the ANRE on cost-effectiveness of energy efficiency subsidies; analysis by the ECCJ (outsourced by METI) on energy efficiency of factories and business establishments specified under the Energy Conservation Law; and KEIDANREN's review on their progress toward the voluntary action plan.

Ministry of the Environment (MOE) is in charge of estimating and analysing GHG emissions every fiscal year in Japan, and reporting to the United Nations Framework Convention on Climate Change (UNFCCC).

There are several data sources useful for analysing energy efficiency in Japan, including: General Energy Statistics and Energy Consumption Statistics published by the ANRE; Handbook of Japan's & World Energy & Economics Statistics updated annually by the Institute of Energy Economics, Japan; Household Expenditure Survey by Ministry of Internal Affairs and Communication; Consumer Confidence Survey by the Cabinet Office. Assessment and survey reports are available through the METI's website.

LEGAL POWER

Part of energy-related data collected by the ANRE is based on legislation, including the Statistics Act.

LINKS

Energy information sources in Japan:

http://www.enecho.meti.go.jp/statistics/total_energy/

<http://eneken.ieej.or.jp/en/publication/index.html>

<http://www.stat.go.jp/data/kakei/>

http://www.cas.go.jp/jp/seisaku/gyoukaku/H27_review/H27_Review_Sheet001/H27_Review_Sheet001.html

http://www.meti.go.jp/committee/sougouenergy/shoene_shinene/sho_ene/pdf/012_02_00.pdf

<http://www.keidanren.or.jp/policy/2015/102.html>

http://www.meti.go.jp/meti_lib/report/2014fy/E004383.pdf

<http://www.env.go.jp/earth/ondanka/ghg/>

14. EVALUATION OF ENERGY EFFICIENCY PROGRESS OR POTENTIAL

Japan employs a sectoral approach to evaluate energy efficiency progress and potential. The Energy Conservation Law requires factories and business establishments (with energy consumption of 1,500kl/year) as well as specified-scale cargo owners and carriers to report their energy consumption regularly. The Law also requires these specified-scale businesses to submit medium to long-term plans to improve efficiency. In addition, The Top Runner Programme requires companies (manufacturers and importers of specified products, such as electric appliances and vehicle), to fulfil the efficiency targets by the targeted years.

LINKS

METI Policy: http://www.meti.go.jp/english/policy/energy_environment/energy_efficiency/

15. SELF-EVALUATION OF ENERGY EFFICIENCY PROGRAMMES

Energy efficiency programmes regulated by the law are usually required to conduct an evaluation regularly.

16. CROSS-SECTOR ENERGY EFFICIENCY INITIATIVES

Tax for Climate Change Mitigation

OBJECTIVE

To promote renewable energy and energy saving across the sectors.

OUTLINE

Japan introduced the Tax for Climate Change Mitigation in October 2012. This tax is levied on crude oil/oil products, gas and coal. The tax has raised in phases in April 2014 and 2016; the tax value is JPY 289 per tonne-CO₂ for each kind of product since April 2016. Revenue from this tax is used for implementing various measures to promote energy efficiency and renewable energy, as well as for the use of clean fossil fuels.

LINKS

Ministry Of Environment: <http://www.env.go.jp/policy/tax/about.html>

Keidanren Action Plan toward Low-Carbon Society

OBJECTIVE

To reduce GHG emission and mitigate global warming through voluntary actions.

OUTLINE

KEIDANREN (Japan Business Federation) is a comprehensive economic organisation with a membership of 1,350 representative companies of Japan, 109 industrial associations and 47 regional economic organisations (as of April 2017).

The Action Plan consists of two phases. Phase I was published in 2013 with a focus on 2020 targets; Phase II was published in 2015 with targets for the year 2030. Voluntary targets, such as CO₂ reduction, were individually formulated by 62 industries/companies in the industrial, commercial, transport and transformation sectors. As of April 2017, the action plan covers 31 industries in the industry sector, 12 in the transport, 16 in the commercial and 3 in the transformation.

LINKS

Keidanren: <http://www.keidanren.or.jp/en/>

Keidanren action plan: http://www.keidanren.or.jp/policy/2015/031_honbun.pdf

Top Runner Programme

OBJECTIVE

To promote energy saving in the residential, commercial and transport sectors by implementing efficiency standard for specified products.

OUTLINE

The Top Runner Programme is mandatory for companies (manufacturers and importers of specified products), to fulfil the efficiency targets by the targeted years, which encourages competition and innovation among the companies without increasing market prices. Manufacturers are required to achieve such targets (by a weighted average method) for all of their products per category for each predetermined target year.

The programme was introduced in 1998 to curb energy consumption in residential, commercial and transport sectors. This programme initially covered 11 items in 1998, and expanded to 31 items in 2013.

LINKS

Top Runner: http://www.enecho.meti.go.jp/category/saving_and_new/saving/data/toprunner2015e.pdf

Benchmark system

OBJECTIVE

To promote energy efficiency in the industry, commercial and electricity sector through intra-business comparison.

OUTLINE

The benchmark system is an energy efficiency standard for industrial processes and the commercial sector. Companies that belong to the top 10-20% of each specified category are better rated in the regular reporting system under the Energy Conservation Law. Ten categories in six industry sub-sectors, accounting for approximately 80% of the total manufacturing energy consumption, are under this system. The government plans to expand the system to the commercial sector, targeting to cover 70% of the total industry plus commercial energy consumption. A benchmark system for convenience stores started the 2017-18 fiscal year.

LINKS

METI Benchmark: http://www.enecho.meti.go.jp/category/saving_and_new/benchmark/

METI Benchmark report:

http://www.meti.go.jp/committee/sougouenergy/shoene shinene/sho_ene/koujo_wg/2016/pdf/001_03_00.pdf

17. INDUSTRY ENERGY EFFICIENCY INITIATIVES

Prefecture level emissions trading scheme

OBJECTIVE

To curb GHG emissions in the specified sector

OUTLINE

Prefecture level emissions trading schemes have been implemented in Tokyo, Kyoto and Saitama prefectures. Specified business operators, for example, in Tokyo, factories and business establishments in the industry and commercial sectors with an energy consumption of 1,500kl-oil equivalent/year, are required to meet emissions regulations. Sectoral coverage varies by prefectures; Tokyo focuses on the industry and commercial sectors, while Kyoto includes transport as well. The level of regulation in Tokyo, as an example, is as follows: 8% and 17% reductions in commercial buildings, and 6% and 15% in factories in FY2010-14 and FY2015-19, respectively, from the averaged emissions in the consecutive three years in FY2002-07.

LINKS

METI: http://www.meti.go.jp/report/whitepaper/data/pdf/20170414001_02.pdf

Tokyo Government Site: http://www.metro.tokyo.jp/tosei/hodohappyo/press/2016/11/04/10_01.html

18. TRANSPORT ENERGY EFFICIENCY INITIATIVES

Labelling programme for light vehicles fuel economy

OBJECTIVE

To enrich information provision about light vehicles fuel economy.

OUTLINE

Japan has decided to introduce an international labelling standard-WLTC mode-for measuring the fuel economy of light vehicles. WLTC stands for worldwide-harmonised Light vehicles Test Cycle. Ministry of Land, Infrastructure, Transport and Tourism (MLIT) announced that all labels for light vehicles will be based on the WLTC mode from Oct 2018. Vehicle manufacturers are switching their labels from the current JC08 mode to the WLTC since summer 2017. The existing labels show a fuel economy based on the JC08 mode, whereas the new labels indicate fuel economy based on the WLTC mode as well as "city-driving" mode, "suburb-driving" mode and "Highway-driving" mode.

LINKS

METI: http://www.meti.go.jp/committee/sougouenergy/shoene shinene/sho ene/pdf/024_02_00.pdf

Prefecture level emissions trading scheme

OBJECTIVE

To curb GHG emissions in the specified sector

OUTLINE

Prefecture level emissions trading schemes have been implemented in Tokyo, Kyoto and Saitama prefectures. Specified business operators, for example, in Tokyo, factories and business establishments in the industry and commercial sectors with an energy consumption of 1,500kl-oil equivalent/year, are required to meet emissions regulations. Sectoral coverage varies by prefectures; Tokyo focuses on the industry and commercial sectors, while Kyoto includes transport as well. The level of regulation in Tokyo, as an example, is as follows: 8% and 17% reductions in commercial buildings, and 6% and 15% in factories in FY2010-14 and FY2015-19, respectively, from the averaged emissions in the consecutive three years in FY2002-07.

LINKS

METI: http://www.meti.go.jp/report/whitepaper/data/pdf/20170414001_02.pdf

Tokyo Government Site: http://www.metro.tokyo.jp/tosei/hodohappyo/press/2016/11/04/10_01.html

19. BUILDING ENERGY EFFICIENCY INITIATIVES

Energy saving labelling programme

OBJECTIVE

To assist consumers to purchase energy efficient products

OUTLINE

The labels affixed to the products indicate the achievement ratio of the energy efficiency and conservation standards. There two types of label: the Energy Saving Label and the Uniform Energy Saving Label.

The Energy Saving Label is a labelling programme for manufactures to indicate energy-saving performance under the Top Programme. This label is displayed in the brochure or product itself. As of March 2015, the programme now includes 21 categories of products are subject to labelling.

The Uniform Energy Saving Label, another labelling programme that applies to retailers, is a multistage rating scheme of energy-saving performance based on an achievement ratio under the Top Runner Programme. This label is designed to assist consumers to purchase efficient products. The programme is covering six categories of products (air conditioners, TVs, electric refrigerators, electric freezers, electric toilet seats, and lighting equipment for fluorescent lamps). The Simplified Uniform Energy Saving Label is displayed for other 10 products that are not covered by the Uniform Energy Saving Label.

LINKS

Labelling programme: <https://www.eccj.or.jp/labeling/>

Unified labelling programme: http://www.shouene-kaden2.net/learn/eco_label.html

Mandatory Compliance on Building Energy Efficiency Standard

OBJECTIVE

To improve energy-saving performance of buildings and houses.

OUTLINE

The Energy Conservation Law requires housing manufacturers that supplies +150 houses/year to comply energy efficiency standard. The Law also requires building owners and manufactures to submit energy-saving plans when they construct middle- to large-size new buildings (with floor area larger than or equal to 300 square meters).

LINKS

No link provided.

Prefecture level emissions trading scheme

OBJECTIVE

To curb GHG emissions in the specified sector.

OUTLINE

Prefecture level emissions trading schemes have been implemented in Tokyo, Kyoto and Saitama prefectures. Specified business operators, for example, in Tokyo, factories and business establishments in the industry and commercial sectors with an energy consumption of 1,500kl-oil equivalent/year, are required to meet emissions regulations. Sectoral coverage varies by prefectures; Tokyo focuses on the industry and commercial sectors, while Kyoto includes transport as well. The level of regulation in Tokyo, as an example, is as follows: 8% and 17% reductions in commercial buildings, and 6% and 15% in factories in FY2010-14 and FY2015-19, respectively, from the averaged emissions in the consecutive three years in FY2002-07.

LINKS

METI: http://www.meti.go.jp/report/whitepaper/data/pdf/20170414001_02.pdf

Tokyo Government Site: http://www.metro.tokyo.jp/tosei/hodohappyo/press/2016/11/04/10_01.html

20. ENERGY EFFICIENCY COOPERATION

COOPERATION AGREEMENTS WITH OTHER ECONOMIES OR ORGANISATIONS

METI, NEDO and JICA offer a number of energy efficiency cooperation programmes, such as capacity building, technology transfer, as well as financing (so-called ODA loan), for emerging economies. For example, JICA's projects include: establishment of energy conservation training centre in Iran, assistance for developing a master plan for energy conservation in Oman and Viet Nam, and transfer of high-efficient coal-fired technologies to Indonesia.

BILATERAL, REGIONAL OR MULTILATERAL COOPERATION AGREEMENTS

Japan has been involved in discussions related to energy efficiency, such as capacity building, technology transfer as well as data collection, through various multilateral cooperation schemes, including IEA, APEC, ASEAN+3, EAS and IPEEC. Japan is also enhancing bilateral cooperation with Asian countries as well as energy producing countries in order to promote energy efficiency and conservation.

LINKS

JICA: https://www.jica.go.jp/activities/issues/energy_minig/case.html

JICA: https://www.jica.go.jp/english/our_work/thematic_issues/energy/study.html

METI: <http://www.enecho.meti.go.jp/about/whitepaper/>

METI: <http://www.enecho.meti.go.jp/about/whitepaper/2017html/3-9-1.html>

21. OTHER ENERGY EFFICIENCY EFFORTS

No information provided.