

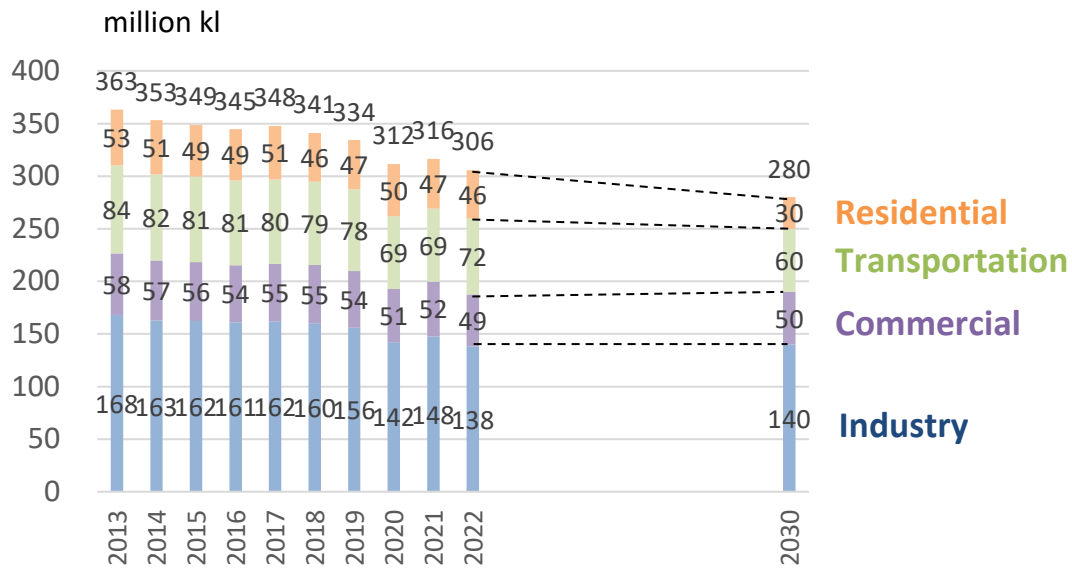
Japan on Track in FY2022 to Achieve Energy Consumption Reduction Target While Falling Behind in Cutting Energy Intensity

Ryo Eto, Energy Data and Modelling Center

1. Final energy consumption in FY2022 (revised report) was the lowest since FY2013, making smooth progress in achieving the FY2030 target

Japan's final energy consumption in FY2022 declined by 3.3% from the previous year to 11,842 PJ (306 million kl oil equivalent), the lowest since FY1990, according to the revised Comprehensive Energy Statistics released on April 12 (Figure 1). The decline was the first in two years. Energy consumption, though increasing by 4.0% in the transportation sector due to traffic volume recovery from the COVID-19 disaster, decreased by 6.4% in the industrial sector, by 5.3% in the commercial sector, and by 2.3% in the residential sector.

Japan's final energy consumption target for FY2030 is set at 280 million kl in the Outlook for Energy Supply and Demand in FY2030 released in October 2021 together with the Sixth Strategic Energy Plan. This is based on the assumption that energy efficiency improvement will make progress from the base year of FY2013, when final energy consumption totaled 363 million kl. Energy consumption in FY2022 represented a decrease of 57 million kl or 69% from FY2013, against a decline of 83 million kl from FY2013 to the FY2030 target. If energy consumption is assumed to decrease at an equal annual pace from FY2013 to FY2030, a decline from FY2013 to FY2022 comes to 53%, compared with the actual decrease of 69%, indicating that Japan was well on track to achieving the FY2030 target. By sector, the transportation and residential sectors in FY2022 posted respective energy consumption cuts of 48% and 31% from FY2013, falling behind the target reduction of 53% for overall energy consumption. However, the industry and commercial sectors reduced their energy consumption below their respective FY2030 target levels as of FY2022.



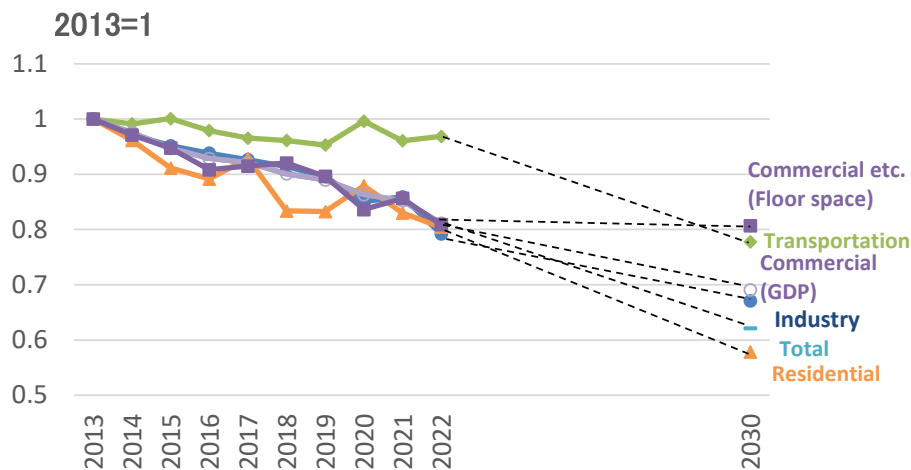
Source: Ministry of Economy, Trade and Industry “Comprehensive Energy Statistics”

Note: Actual figures for FY2013 to FY2022 and targets for FY2030 in the Outlook for energy Supply and Demand in FY2030

Figure 1 Trends in final energy consumption and targets

2. Energy consumption intensity reduction falls short of achieving the target

However, the low energy consumption in FY2022 is attributable to a delay in the achievement of economic activity targets. Therefore, the decline in final energy consumption intensity from FY2013 to FY2022 was limited to 50%, slipping below 53% as assumed for the case where the intensity will be reduced at an equal annual pace from the FY2013 level to the FY2030 target (Figure 2). Although the industry sector reduced its energy consumption intensity by 63% from FY2013 to FY2022, production per GDP for raw materials (including crude steel, ethylene, and cement while excluding paper/paperboard) slipped far below the levels required for achieving the FY2030 target, indicating that the intensity reduction was attributable primarily to industrial structure changes (Figure 3). The commercial sector posted a 99% reduction in energy consumption intensity on a floor area basis as the floor area continued to increase amid GDP’s recovery from the COVID-19 disaster. On a GDP basis, the reduction in the sector’s energy consumption intensity was limited to 61%. The transportation and residential sectors reduced energy consumption intensity by 14% and 46%, respectively, from FY2013 to FY2022, indicating that they fell behind in making progress toward achieving energy consumption intensity reduction targets.

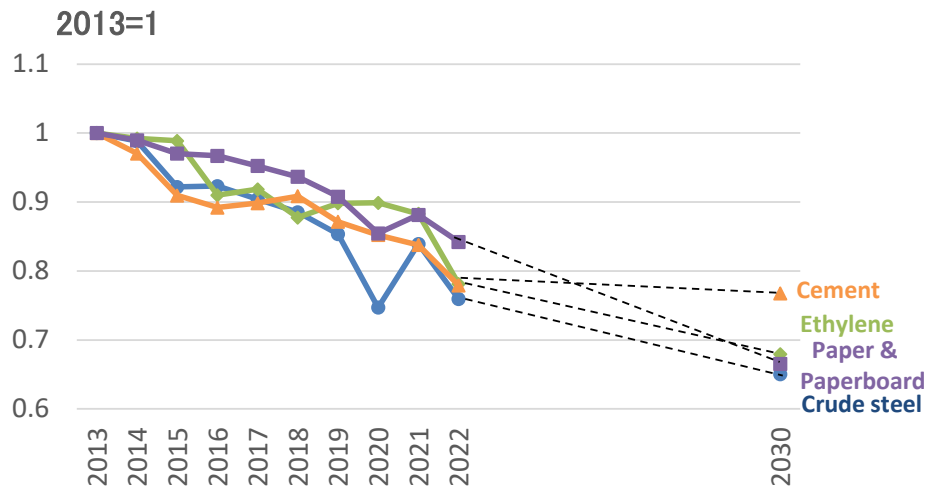


Sources: Ministry of Economy, Trade and Industry, “Comprehensive Energy Statistics”; Cabinet Office, “National Accounts”; Ministry of Internal Affairs and Communications, “Basic Resident Register”; Institute of Energy Economics, Japan, “Handbook of Japan’s and World Energy and Economic Statistics.”

Note 1: Data represent historical between FY2013 and FY2022 and estimates for FY2030 based on targets in the Outlook for Energy Supply and Demand in FY2030.

Note 2: Activity indicators are GDP for total final energy consumption and the industrial sector, floor area and GDP for the commercial sector, ton-kilometers for the transportation sector, and the number of households for the residential sector. Passenger-kilometers were converted to ton-kilometers under the assumption of 0.065 tons/person.

Figure 2 Changes in final energy consumption intensity and targets



Sources: Ministry of Economy, Trade and Industry, “Current Survey of Production”; Cabinet Office, “National Accounts.”

Note: Data represent historical between FY2013 and FY2022 and estimates for FY2030 based on targets in the Outlook for Energy Supply and Demand in FY2030.

Figure 3 Trends and targets for raw materials production per GDP

3. Promote energy efficiency in all sectors

Although Japan in FY2022 was on track to achieve its final energy consumption reduction target for FY2030, the reduction in FY2022 was primarily attributable to a slowdown in economic activities mainly in industrial materials industries. Japan was thus falling behind in cutting its energy consumption intensity. In the Outlook for Energy Supply and Demand in FY2030, the economy is expected to become active towards FY2030. In addition to the transportation and residential sectors that lagged behind other sectors in making progress towards achieving energy consumption reduction targets, the industrial and commercial sectors should be prepared to see energy consumption increasing due to economic recovery. In order to achieve the FY2030 energy consumption reduction target, Japan is required to cut energy consumption intensity through comprehensive efforts, including the appropriate utilization of the amended Act on Temporary Measures for Promotion of Rational Uses of Energy and Recycled Resources in Business Activities, the Japan Climate Transition Bond, and carbon pricing.

Contact: report@tky.ieej.or.jp