

Economic and Energy Outlook of Japan for FY2019

*Concerns over a slowdown could shadow stable economic growth.
Energy demand will slightly rebound from this year's decline*

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Summary of economic and energy outlook [Reference Scenario]

Macro economy and production activity | Growth will continue in FY2019 but will decelerate slightly

In FY2018, the Japanese economy slows down from the previous fiscal year to a moderate growth rate of 0.9%. Domestic demand is strong, but foreign demand does not contribute as in the past. In FY2019, the growth rate will be as much as the potential growth rate at 0.8%, reflecting a slowdown in private demand, while public demand will support the growth, in part because of measures to raise the VAT. Industrial production will increase at a much slower rate than in FY2017 at slightly less than 1% through FY2019. The trade surplus shrinks to JPY300 billion in FY2018 due to rises in energy prices but will recover to JPY800 billion in FY2019. As a result, the changes in the trade balance over the two years will be in line with changes in fossil fuel imports.

Energy supply and demand | Primary energy supply will increase slightly after a decrease in FY2018. CO₂ will decrease for its sixth consecutive year, but just a little

Primary energy supply decreases for the first time in two years in FY2018 due to a slowdown from the earlier higher economic growth and a milder winter compared to a record severe winter in FY2017 (-0.9%). In particular, oil and natural gas fall sharply. In FY2019, primary energy supply will return to a slight increase due to the expansion of basic materials production and a return to normal winter temperatures (+0.2%). The trend from fossil fuels to nuclear and renewable energy continues but will not accelerate in FY2019.

CO₂ emissions will be reduced to 1,069 Mt in FY2019, a reduction of -13.5% from FY2013. Although energy conservation and low-carbonisation progress every year, the degree of low carbon is still inferior to that before the Great East Japan Earthquake.

Energy sales | In FY2019, electricity and city gas sales will increase, whilst fuel oil sales will decline for a seventh consecutive year

In FY2018, overall electricity sales decline by 1.2%. Lighting services decrease sharply due to factors such as the impact of temperatures and the spread of residential solar PV power generation, while power services also decline slightly reflecting a slower growth in production activities on the back of a slowdown in exports. In FY2019, sales both for lighting services and for power services will increase, for an overall increase of 0.6%. That for lighting services will increase by 0.7% due to advances in electrification of water heating and cooking, despite the continued penetration of energy-efficient equipment. Sales for power services will increase by 0.6% due to the gradual expansion of production activities.

Although the sales of city gas for general industrial use increase in FY2018, total sales decrease for the first time in three years due to the influence of the severe winter of the previous fiscal year and the mild winter of this fiscal year, as well as the decrease of city gas for electric utility use (-2.3%). In FY2019, sales for industrial use will be driven by an increase for electric utility due to the operation of a new power plant, the continuous demand development for general industrial use, and sales for residential use will also return to increase. The overall figure will turn upward again, hitting a record high but only slightly higher than in FY2017 (+2.6%).

Table 1 | Summary of Reference Scenario

	Historical				Projection		Year-to-year changes			
	FY2010	FY2015	FY2016	FY2017	FY2018	FY2019	FY2017	FY2018	FY2019	
Energy	Primary energy supply (Mtoe) ¹	514.5	466.2	463.0	464.9	460.6	461.6	0.4%	-0.9%	0.2%
	Oil ² (GL)	232.3	211.6	205.1	202.6	194.7	193.5	-1.2%	-3.9%	-0.6%
	Natural gas ² (Mt of LNG equiv.)	73.3	86.0	88.1	85.6	82.3	82.0	-2.8%	-3.9%	-0.3%
	Coal ² (Mt)	184.7	190.1	188.0	192.2	191.6	191.9	2.2%	-0.3%	0.1%
	Nuclear (TWh)	288.2	9.4	17.3	31.3	61.2	65.4	80.8%	95.5%	7.0%
	Renewable electricity ³ (TWh)	111.2	149.0	150.8	163.8	175.7	183.7	8.6%	7.3%	4.5%
	FIT generation (TWh)	63.9	99.2	108.7	117.5	126.6	134.5	8.2%	7.7%	6.3%
	Self-sufficiency ratio	20.2%	7.4%	8.3%	9.5%	11.7%	12.3%	1.2p	2.2p	0.6p
	Electricity sales ⁴ (TWh)	(926.6)	(837.5)	850.5	863.2	853.1	858.4	1.5%	-1.2%	0.6%
	City gas sales ⁵ (Billion m ³)	39.28	39.91	41.53	42.48	41.52	42.61	2.3%	-2.3%	2.6%
	Fuel oil sales (GL)	196.0	180.5	176.9	174.7	167.7	166.7	-1.2%	-4.0%	-0.6%
	Energy-related CO ₂ emissions (Mt)	1,138	1,148	1,128	1,112	1,073	1,069	-1.4%	-3.5%	-0.4%
	(FY2013=100)	92.1	92.9	91.3	90.0	86.8	86.5
Prices	Crude oil, import, CIF (\$/bbl)	84	49	48	57	70	67	19.6%	22.0%	-3.8%
	LNG, import, CIF (\$/MBtu)	11.3	8.7	7.0	8.5	10.9	10.4	20.5%	28.6%	-4.2%
	Steam coal, import, CIF (\$/t)	114	76	81	102	117	103	26.4%	13.9%	-11.9%
	Coking coal, import, CIF (\$/t)	175	88	111	146	161	143	31.8%	10.0%	-11.0%
Economy	Real GDP (JPY2011 trillion)	493.0	517.4	522.0	531.7	536.2	540.4	1.9%	0.9%	0.8%
	Industrial production (CY2010=100)	99.4	97.5	98.5	102.5	103.4	104.3	4.1%	0.8%	0.9%
	Balance of trade (JPY trillion)	5.3	-1.1	4.0	2.4	0.3	0.8	-38.6%	-88.7%	171%
	Fossil fuel imports (JPY trillion)	18.1	16.1	13.1	16.2	19.0	18.6	23.6%	17.0%	-2.3%
	Exchange rate (JPY/\$)	86.1	120.4	108.4	111.1	111.2	114.8	2.4%	0.2%	3.2%
	Cooling degree days	560	322	431	397	489	381	-7.7%	23.2%	-22.2%
Heating degree days	1,077	875	966	1,071	932	1,019	11.0%	-13.0%	9.3%	

Notes:

1. Mtoe = 10¹³ kcal

2. Conversion factors for oil: 9,126 kcal/L; Natural gas: 13,043 kcal/kg; Steam coal: 6,139 kcal/kg; Coking coal: 6,928 kcal/kg until FY2012.

Conversion factors for oil: 9,145 kcal/L; Natural gas: 13,016 kcal/kg; Steam coal: 6,203 kcal/kg; Coking coal: 6,877 kcal/kg since FY2013.

3. Including large hydro 30 MW or more. 4. Figures in parentheses are old statistical figures. 5. Conversion factor: 1 m³ = 10,000 kcal

Fuel oil sales in FY2018 continues to decline for many use, including a decline in naphtha due to periodic maintenance at petrochemical plants, a decline in the use of oil-fired power plants, and a decline in the demand for kerosene heating (-4.0%). In FY2019, the sales of naphtha will increase due to fewer periodic maintenance at ethylene plants. The sales of diesel oil will also increase in response to firm demand. The increase, however, will be more than offset by a drop in the operation of oil-fired power plants and a drop in gasoline sales, the result of continuous improvement in automobile fuel efficiency, marking the seventh consecutive year of decline (-0.6%).

Renewable power generation | The FIT power generation capacity will reach 73 GW at the end of FY2019

Regarding FIT power sources, more economical and reasonable promotion measures are pursued with the enforcement of the revised FIT Law in April 2017. The law is expected to be amended to further strengthen the revocation of accreditation of non-operating projects, however, plants under construction are expected to be operational, with a FIT capacity of 73 GW by the end of FY2019, including 43 GW for non-residential solar PV. The amount of electricity generated is 134.5 TWh in FY2019, accounting for 13% of Japan's total electricity generation (excluding pumped hydro). On the other hand, in exchange for promoting the introduction of the system, the burden on consumers is increasing. If all of the 86 GW of approved equipment as of March 2018 were in operation, the cumulative cost to consumers, including operating and transition

equipment, would be JPY61 trillion in the purchase period, equivalent to boosting electricity rates by JPY3,500/MWh – 15% for households and 21% for industries.

Topic | The effect of restarting nuclear power plants

We assessed the impact of nuclear power generation on 3Es – economy, energy security and environment. In the High Case, in which there are five more operating plants than in the Reference Scenario, the amount of fossil fuel imports would be reduced by JPY300 billion, the self-sufficiency rate would be improved by 2.1 points, and CO₂ emissions would be reduced by 13 Mt. The degree of utilisation of nuclear would greatly affect 3Es.

Figure 1 | Effect of the nuclear power generation [FY2019, compared with the Reference Scenario]

