

## JAPAN

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Japan is the world's fourth-biggest island state, and with around 127 million inhabitants, the third-biggest industrialised nation. In 2010–11 its most important energy sources were nuclear power (approx. 30 percent), gas (approx. 30 percent), coal (approx. 23 percent), oil (approx. 5 percent) and hydropower (approx. 8 percent). Other renewable energies, such as solar power, wind power and biomass, played a very minor role. Since Japan has next to no natural resources for the production of energy, it has to import almost all of its fossil fuels.

In response to the nuclear disaster in Fukushima in March 2011, Japan has removed its 48 commercial nuclear power plants from the grid in order to overhaul them and to conduct safety tests. The resulting “energy gap” has been bridged only thanks to considerable reductions in electricity consumption and a dramatic increase in imports of oil, gas and coal. Their combined share of the energy mix in 2013–14 was 90 percent. In 2013 gas imports rose particularly sharply, by 17.5 percent. In summer last year, electricity consumption was almost ten percent (17 gigawatts) less than in 2010. The amount of energy saved is thus equivalent to the amount generated by 15 nuclear reactors.

### ENERGY EMERGENCY IN THE WAKE OF FUKUSHIMA

The energy emergency is having a negative impact on Japan. First of all, it is inhibiting the economic reforms introduced by Prime Minister Shinzō Abe in late 2012. The reform policy, known as “Abenomics”, depends on monetary easing and yen depreciation. This is benefiting Japanese exports as it makes Japanese goods more inexpensive abroad. On the other hand, the costs of imports are rising – including those for coal, gas and oil. As well as creating a record deficit in the trade balance, these developments were largely to blame for a current account deficit that lasted several months, up until February 2014.

On top of that, since Japan cannot generate its own nuclear energy and is therefore almost entirely dependent on fuel supplies from abroad, any direct or indirect conflicts with supplier states and any supply bottlenecks or sudden price hikes on the global market have an immediate effect on the country's energy security. Relevant in this regard are the terri-



*Geothermal power plant in Iwate Prefecture.*

torial disputes in the East and South China Seas, and the contention over Chinese military ambitions in the region.

Since April 2014, the Japanese government has thus been preparing to reactivate some nuclear reactors as part of a new energy plan that foresees stricter safety controls. This will solve part of the problem but make others worse. One challenge facing Japan is that it does not have a permanent repository for nuclear waste. Already there are around 17,000 tonnes of spent fuel rods waiting for disposal in the reactors' spent fuel pools.

The government in Tokyo also intends to decentralise the country's energy supply and to separately organise electricity production and distribution by 2020 at the latest, reasoning that this should guarantee a stable electricity supply in the case of a renewed energy emergency.

As it had no nuclear power, Japan was forced to reboot its thermal power plants and to fire them with fossil fuels to a much greater degree than previously. This meant that an increase in carbon emissions from 300 million tonnes in the 2010–11 financial year to 400 million in 2012–13 was unavoidable. During the negotiations at the UN Climate Change Conference in Warsaw in November 2013, the Japanese government withdrew its goal, announced four years previously, of emitting 25 percent less greenhouse gases in 2020 than in 1990. This goal was now, it stated, “unrealistic”.

Public debate on global climate change has been overtaken to some degree by that on the direct and indirect consequences of Fukushima on energy supply and Japan's economic development. Policy makers and the media are focusing on the conflicting issues of a high dependency on energy imports, the economic impact of rising fuel prices and the risks of recommissioning Japanese nuclear plants a good three years after the incident at Fukushima.

The Japanese are aware of European climate and energy policy, but they have become much less interested in the German energy transition since 2012. Europe in general is considered a possible example to follow, but only to a limited degree. One of the reasons for this is the difficult situation following the Fukushima disaster. Yet considerable investment would be required in order to trigger a real "energy transformation" in Japan, since the island nation's power system is not linked up to that of any neighbouring states and consists of two main power grids, one with a frequency of 50 hertz and another with 60 hertz.

With regard to public awareness in Japan of the UN's role in the debate on climate change, we need to distinguish between the scientific findings and recommendations of the IPCC and the standards laid down in the UNFCCC – as well as the discussions on actual emissions targets (i. e. the Kyoto Protocol).

The COP3, held in 1997, received particular attention from the Japanese media, primarily because it was held in Kyoto. This has ensured a high level of Japanese interest in the Kyoto Protocol. According to an analysis by the University of Minnesota, published in *Globality Studies Journal* in mid-2013, the subsequent UN Climate Change Conferences and policy making in general continued to make up the majority of Japanese reporting on climate issues and on the role of the United Nations in the following years. The figure in 2007 to 2008 was 70 percent of related content.

Yet there was considerably less reporting on the scientific findings of the IPCC, with one exception being when it was awarded the Nobel Prize for Peace in 2007. Perhaps that was one of the reasons why members of the IPCC were invited to Yokohama in March 2014 to put the final touches to their most recent report – not to mention the particularly difficult situation following Fukushima and the discussions on the future Japanese energy plan. In any case, this year the IPCC and its recommendations received considerable attention in the Japanese media.

According to the analysis in *Globality Studies Journal*, a little more than half of Japanese media reporting on climate change is dedicated to international climate issues. This puts Japan slightly above the global average of 50 percent. On the other hand, Japan appears to be much less interested in the economic and ecological impact of climate change or in civil society engagement in climate change advocacy than other Asian countries such as Taiwan, Korea and India. In 2007 to 2008 these topics made up less than 30 percent of Japanese reporting on climate change, compared to an average figure of almost 60 percent worldwide.

But that does not mean that climate change is irrelevant to the Japanese public – quite the contrary.

According to the Global Attitudes survey conducted by the Pew Research Center in Washington D.C. in mid-2013, 72 percent of Japanese people are worried about global climate change. Even more (74 percent) are worried about the growing influence of China, and yet more (78 percent) by North Korea's nuclear programme. Of all the Asian countries included in the survey, only South Korea (85 percent of respondents) was more worried about climate change than its neighbour Japan.

What is more, according to the Ministry of the Environment, almost 70 percent of Japanese people think that reducing energy consumption is more important now than before Fukushima. More than half of the population assign a greater value to renewable energies than previously. And a survey conducted by the daily newspaper Asahi Shimbun in March 2014 shows that almost 60 percent of the Japanese population are opposed to firing up the nuclear reactors.

Japanese industry considers that environmental and climate protection is a promising area for business development. While expectations for this segment were still very negative in late 2012 (-9 points), just one year later the sentiment index produced by the Ministry of the Environment reported a figure of +9 points. Companies operating in the environment segment gave an above-average assessment of the segment's prospects, awarding 9 points in 2012 and 17 points in 2013. They feel that business activity and investments in climate protection have more potential than other sectors within the environment segment, such as waste management, for instance. Sentiment improved from 18 points in 2012 to 27 points in 2013. A rating of 36 points is predicted for 2023.

One of the reasons for the positive expectations of the Japanese environment sector is the feed-in tariff introduced in summer 2012. This enabled Japan to expand its solar power capacity by almost a third last year alone, to over twelve gigawatts. The country is

now one of the fastest-growing solar power markets in the world. Japan also intends to increase its use of offshore wind farms. By 2030, the share of renewable energies (including hydropower) in the energy mix is to grow to more than 20 percent.

## KAZAKHSTAN

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### EFFECTS OF CLIMATE CHANGE AND THEIR PERCEPTION IN SOCIETY

The risks associated with serious climate change are already being felt in Kazakhstan. Periodic heatwaves have been placing a burden on Kazakhstan's transmission grids,<sup>1</sup> and increasing water deficits and adverse weather conditions are already impacting on the country's agriculture sector.<sup>2</sup> Also, climate change is harming human health<sup>3</sup> and natural ecosystems.

In the past few years, the majority of the Kazakh population (83 percent) have noticed changes to the climate. Though 43 percent are seriously worried about possible consequences, 40 percent do not assess the climate changes as severe.<sup>4</sup> The people in Kazakhstan say that the problems associated with climate change are primarily discussed in society (41 percent), the media (17 percent), social networks (11 percent) and in environmental NGOs (6 percent). Elected officials are seen as being the least worried about the topic (2 percent), despite the fact that 40 percent of survey respondents expect the government to direct more attention towards researching the problem and finding a solution to it. Around 53 per-

cent of respondents think that the government's attention to the matter is little more than perfunctory; they sense a lack of actual concrete measures. At the same time, the active policies of European countries to stop climate change are judged positively by a third of respondents (34 percent) in Kazakhstan, and almost 50 percent of respondents gave a positive assessment of Germany's energy-saving policies, its use of alternative energy sources and its reduced use of nuclear power.

### STRATEGIC INSERTION OF CLIMATE AND ENERGY PLANS IN STATE POLICY

Uncertainty about climate change scenarios for Kazakhstan is due to the uncertainty surrounding the changing scenarios of greenhouse gas concentrations. Kazakhstan has one of the world's highest emissions per capita. The potential of renewable energies has been largely untapped, primarily due to the boom in the energy and construction sectors.<sup>5</sup> However, the new political goal is for Kazakhstan to become a regional pioneer in green growth.

Projects focusing on renewable energies are one of Kazakhstan's three most promising ways to reduce its emissions.<sup>6</sup> There is enormous potential for developing wind and solar power, for instance, and for wasting much less energy. One pilot project is a wind park currently being constructed in Jereimentau, around 150 kilometres east of Astana. The facility is intended to provide electricity for Expo 2017 in Astana. In 2012, state-owned nuclear holding company Kazatomprom opened a factory producing solar cells and modules. Kazakhstan is also set to build its first nuclear power

1 | Cf. Marianne Fay, Rachel Block and Jane Ebinger, "Adapting to Climate Change in Eastern Europe and Central Asia", The World Bank, 1 June 2009, [http://worldbank.org/eca/climate/ECA\\_CCA\\_Full\\_Report.pdf](http://worldbank.org/eca/climate/ECA_CCA_Full_Report.pdf) [31 July 2014].

2 | Cf. Republic of Kazakhstan, Ministry of Environment Protection, "Kazakhstan's Second National Communication to the Conference of the Parties of the United Nations Framework Convention on Climate Change", 2009, <http://unfccc.int/resource/docs/natc/kaznc2e.pdf> [31 July 2014].

3 | Ibid.

4 | Demoscope (The Bureau for Express Monitoring of Public Opinion), "83% of people in Kazakhstan know about climate changes, while 43% being seriously concerned about it", 31 March 2014, <http://demos.kz/eng/index.php?article=25> [31 July 2014].

5 | Marton Kruppa, "Kazakhstan to launch carbon market next year", Thomas Reuters Point Carbon, 12 April 2012, <http://pointcarbon.com/news/1.1825513> [31 July 2014].

6 | Climate Focus, "Option Review for Kazakhstan to Participate in the International Carbon Market", 6 January 2010, <http://ebrd.com/downloads/sector/eccc/kaz.pdf> [28 July 2014].