

Japan: from frontrunner to laggard

Climate Action Tracker

Policy Brief

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Summary

- Adoption of the new target of 3.8% reduction relative to Japan's 2005 fiscal year emissions represents an increase of 3.1% in 2020 relative to 1990 levels. This a major degradation if its original pledge of 25% below 1990 and its Kyoto target of -6% from 1990 levels in the 2008-2012 period.
- The 2011 shutdown of Japan's nuclear industry cannot account for this massive degradation of ambition. Replacing all nuclear production projected for 2020 with the present fossil fuel mix would reduce the original 25% reduction to a 17-18% reduction. Even a shift to coal to replace nuclear would halve the original reduction – still far from explaining the planned increase in emissions.
- The new target will widen the global 2020 emissions gap by 3-4%/year or 356 MtCO₂eq. The UNEP Emissions Gap report (2013) established that even if all pledges are fully implemented, the emissions gap between pledges and a 2°C consistent pathway would be 8-12 GtCO₂eq.
- Japan climate rating is now 'Inadequate' - formerly it was rated 'Sufficient' - only one of two Annex I countries with such a high rating.
- Japan's massive degradation of its pledge could trigger a tipping point in global ambition - instead of a race to the top with countries being inspired towards higher ambition we could now see a downward spiral.
- Instead of inspiring additional ambition at the national level, Japan's new target reflects currently implemented policies and would require few additional measures to 2020.
- Much of the new targets emission increases must represent a change in Japan's political will and ambition to reduce emissions. Taking the original pledge and replacing all nuclear production projected for 2020 with all coal – which is very unlikely – would still result in a reduction of 9% from 1990 levels. Replacing with natural gas would result in an 18% reduction from 1990 levels.
- Mitigation activities heavily focus on bilateral offset mechanisms that are not recognised under the UNFCCC. The total effect of such measures is unclear.

New target will increase emissions.

Japan has revised its 2020 reduction target from a 25% drop **below** 1990 to an effective **3.1% increase in emissions in 2020 relative to 1990**. This is about the same as 2011 emissions and much higher than the -6% from 1990 level agreed in the Kyoto Protocol first commitment period 2008-2012.

Formally, the new target is a 3.8% reduction relative to 2005 emissions in the Japanese fiscal year ending 31 March 2006 and is **even weaker than previously expected**.¹

Such a substantial degradation of Japan's pledge is unlikely to be due to the shutdown of nuclear plant: even if present plants remain shutdown and replaced by either the present mix of fossil fuel supply or by natural gas the revised target would be in the range -17% to -18% from 1990 levels.

Japan is the world's sixth largest emitter (including the EU as one party), and is responsible for ~4% of current global emissions. Adoption of this new target represents an increase in 2020 emissions of 356 MtCO₂eq compared to the former target.

This shift increases global emissions by 0.7% in 2020. In the CAT rating, Japan has now moved from sufficient to inadequate.

	Target (% reduction below 1990)
Kyoto first commitment period	- 6 % average 2008-2012
Old 2020 target	- 25%
New 2020 target	+ 3.1%

Emissions Gap increases by 3-4%

The UNEP Emissions Gap report (2013)² established that even if all pledges are fully implemented, the emissions gap between pledges and a 2°C consistent pathway would

be 8-12 GtCO₂e. An additional 356 MtCO₂eq from Japan will increase this gap by **another 3-4%**, depending on the range of pledges from individual countries and the stringency with which accounting rules are applied.

New target requires little additional action.

Since the reduction in energy supply from nuclear power in 2011, Japan's energy shortfall has primarily been taken up by coal-fired generation. Coal use increased by 6% in 2012 and is expected to continue to grow in the near future.³

Recent analysis by the Climate Action Tracker team indicates that currently implemented policies put Japan on track for an emissions level of 1,370 MtCO₂eq in 2020, excluding LULUCF (1,451 MtCO₂eq incl. LULUCF). This is based on the latest projections released by the IEA in November 2013³ and includes a reduced use of nuclear in the power supply in 2020. To achieve their new 2020 target, Japan would in this case need to reduce emissions by 64 MtCO₂eq through additional policies that are not yet in place.

Decreased pledge a necessary response to reduction in contribution from nuclear energy?

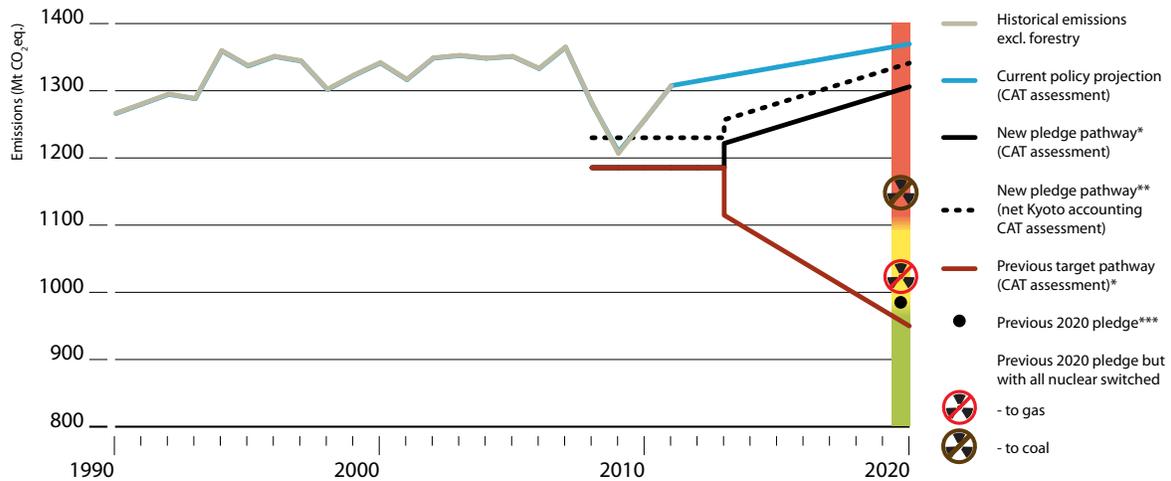
In the just-released IEA World Energy Outlook's Current policies scenario,³ nuclear energy would contribute 220 TWh to Japan's electricity supply. If all nuclear power in this scenario were to be replaced by coal-powered generation, an extra 197 MtCO₂eq would be emitted. This is equivalent to 15% of Japan's current emissions. As the policies scenario assumes current economic growth rates and no other mitigation, this value represents the upper end of emissions that can be expected from a total abandonment of nuclear power generation in Japan.

Even in this worst-case scenario the expected increase represents only 55% of the increase in emissions from the original Copenhagen pledge to the new 2020 target. The remaining 45% must therefore represent a

¹ See Climate Action Tracker (2013). [Climate Shuffle](#), June 2013

² UNEP (2013). [Emissions Gap Report](#).

³ IEA World Energy Outlook, 2013



* Excl. LULUCF credits and debits, excl. LULUCF base year emissions accounting rules and without application of historical threshold on emissions allowances in 2020 under the Doha decision.
 ** Incl. LULUCF credits and debits, incl. LULUCF base year emissions accounting rules and application of historical threshold on emissions allowances in 2020 under the Doha decision.
 *** Emissions level in 2020 resulting from previous unconditional pledge. Because this includes LULUCF credits and debits, this differs from the „previous target pathway“ 2020 level.

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change in Japan’s political will to reduce emissions.

If the shortfall in supply from nuclear were to be taken up by oil, gas, or renewables, instead of coal, the portion of the revision in target attributable to national circumstances would be much lower. If replaced by oil, the shut-down of nuclear production would represent 38% of the overall reduction in ambition, 23% in the case of gas, and 0% for a scenario where it is fully replaced by renewables.

Even analysis done by the Japanese Ministry of the Environment presented in September 2012⁴ indicated that a nuclear-free scenario would lead to a zero to 7% reduction below 1990 levels in 2020.

Alternative strategies

Two approaches are available to Japan for increasing their ambition and retaining an ambitious 2020 target.

First, the contribution of renewables can be increased. WWF⁵ and CASA⁶ have

⁴ Ministry of the Environment (2012). [Recent development of environmental policies in Japan](#)

⁵ WWF Energy Scenario Proposal for Decarbonizing Japan

⁶ Citizens’ Alliance for Saving the Atmosphere and the Earth (CASA): ‘Japan’s 25% reduction target is achievable without nuclear’, CASA 2020 model, v.4 simulation results

demonstrated that the contribution of solar PV, solar heat, onshore wind, and biomass to the energy supply mix can be significantly increased by 2020. WWF suggest a 30% renewables target for electricity, and 15% for heat and fuel.

Secondly, in order to achieve the original Copenhagen pledge with a reduced or zero contribution from nuclear energy, efficiency improvements will also be required. WWF⁴ estimate that a 20% increase in energy efficiency is needed.

Focus on offsets

Japan’s efforts to deal with climate change have shifted focus from domestic to international emissions reduction through their new domestic offsetting (J-credit scheme) and the bilateral Carbon Offsetting Scheme (JCOS).

In the last year, joint implementation agreements have been signed with Mongolia, Bangladesh, Ethiopia, Vietnam, Kenya, Maldives, Lao PDR, and Indonesia⁷. However, these schemes are not recognised under the UNFCCC. If reductions under the J-credit schemes are counted towards the new target then domestic ambition can be considered even weaker.

⁷ [Japanese Ministry of Economics, Trade and Industry](#)

Finance commitments trying to compensate for lack of ambition?

At the same time that Japan announced the severe degradation of its mitigation goals it announced funding of USD 16 billion by 2015. With this it - again - is leading contributions to climate finance, although lessons from the fast start finance period show that effective additional contributions remain unclear. Politically it is clear that the offer of further funding is aimed at limiting the adverse diplomatic consequences its mitigation reversal.

With a share of approximately 42.6% of the total envelope, Japan was by far the largest contributor to fast start finance, followed by the EU with approximately 24.7% and the US with 18.8%.

During the 2010-2012 fast start finance period Japan provided a self-reported USD 13.5 billion in public climate finance and USD 3.4 billion in private finance mobilized by its export credit agencies.

Of this contribution only USD 2.8 billion was reported to be grants while the rest was reported to be provided in forms of loans and other official flows such as risk guarantees.

	Emissions (all Kyoto GHG) excl. LULUCF MtCO₂eq/yr
1990¹	1,267
2005²	1,358
New 2020 target	1,306
Old 2020 target	950
Increase in emissions due to revision of 2020 target	356
Projected emissions in 2020 with implemented policies³	1,370

1 According to CRF 2013

2 Fiscal year (1 April 2005 – 31 March 2006), Japan's fifth National Communication

3 Analysis by the CAT team based on WEO 2013 and Japan's national policies.

Background on the Climate Action Tracker

The "Climate Action Tracker", www.climateactiontracker.org, is a science-based assessment by Ecofys, Climate Analytics and the Potsdam Institute for Climate Impact Research (PIK) that provides regularly updated information on countries' reduction proposals.

The Climate Action Tracker⁸ reflects the latest status of the progress being made at international climate negotiations. The team that performed the analyses followed peer-reviewed scientific methods (see publications in Nature and other journals)⁹ and significantly contributed to the UNEP Emissions Gap Report¹⁰.

The Climate Action Tracker enables the public to track the emission commitments and actions of countries. The website provides an up-to-date assessment of individual country pledges about greenhouse gas emission reductions. It also plots the consequences for the global climate of commitments and actions made ahead of and during the Copenhagen Climate Summit.

The Climate Action Tracker shows that much greater transparency is needed when it comes to targets and actions proposed by countries. In the case of developed countries, accounting for forests and land-use change significantly degrades the overall stringency of the targets. For developing countries, climate plans often lack calculations of the resulting impact on emissions.

Contacts

Dr. Niklas Höhne (n.hoehne@ecofys.com) - Director of Energy and Climate Policy at Ecofys and lead author at the IPCC developed, together with Dr. Michel den Elzen from MNP, the table in the IPCC report that is the basis for the reduction range of -25% to -40% below 1990 levels by 2020 that is currently being discussed for Annex I countries.

Dr. h.c. Bill Hare (bill.hare@climateanalytics.org) (PIK and Climate Analytics) was a lead author of the IPCC Fourth Assessment Report, is guest scientist at PIK and CEO at Climate Analytics.

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⁸ www.climateactiontracker.org

⁹ e.g. <http://www.nature.com/nature/journal/v464/n7292/full/4641126a.html> and <http://iopscience.iop.org/1748-9326/5/3/034013/fulltext>

Ecofys – experts in energy

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Climate Analytics

CLIMATE ANALYTICS is a non-profit organization based in Potsdam, Germany. It has been established to synthesize climate science and policy research that is relevant for international climate policy negotiations. It aims to provide scientific, policy and analytical support for Small Island States (SIDS) and the least developed country group (LDCs) negotiators, as well as non-governmental organisations and other stakeholders in the ‘post-2012’ negotiations. Furthermore, it assists in building in-house capacity within SIDS and LDCs.

www.climateanalytics.org

Potsdam Institute for Climate Impact Research (PIK)

The PIK conducts research into global climate change and issues of sustainable development. Set up in 1992, the Institute is regarded as a pioneer in interdisciplinary research and as one of the world’s leading establishments in this field. Scientists, economists and social scientists work together, investigating how the earth is changing as a system, studying the ecological, economic and social consequences of climate change, and assessing which strategies are appropriate for sustainable development.

www.pik-potsdam.de