

Switzerland's INDC: first in, but room for improvement

Climate Action Tracker policy brief

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Summary

- Switzerland is the first government to formally submit an INDC to the UNFCCC. It aims at halving greenhouse gas emissions by 2030 compared to 1990 levels, with at least a 30% reduction by 2030 domestically.¹ The remainder of the emission reductions would come from “emissions reduction measures abroad”.
- Switzerland's proposal includes forestry accounting, which prevents an unambiguous quantification of its target, and will likely result in weaker emissions reductions across all other sectors.
- The INDC is in line only with the least-stringent equity proposals.
- Switzerland's INDC includes the option of fulfilling a substantial share of its 50% reduction by 2030 through emissions reduction measures undertaken in other countries. The expenditure to achieve this could range from virtually zero to USD\$1.3 billion.
- To bring Switzerland's INDC in line with fair emissions reductions that are 2°C compatible, it needs to increase its target and clarify and limit the role of abatement in its LULUCF sector.

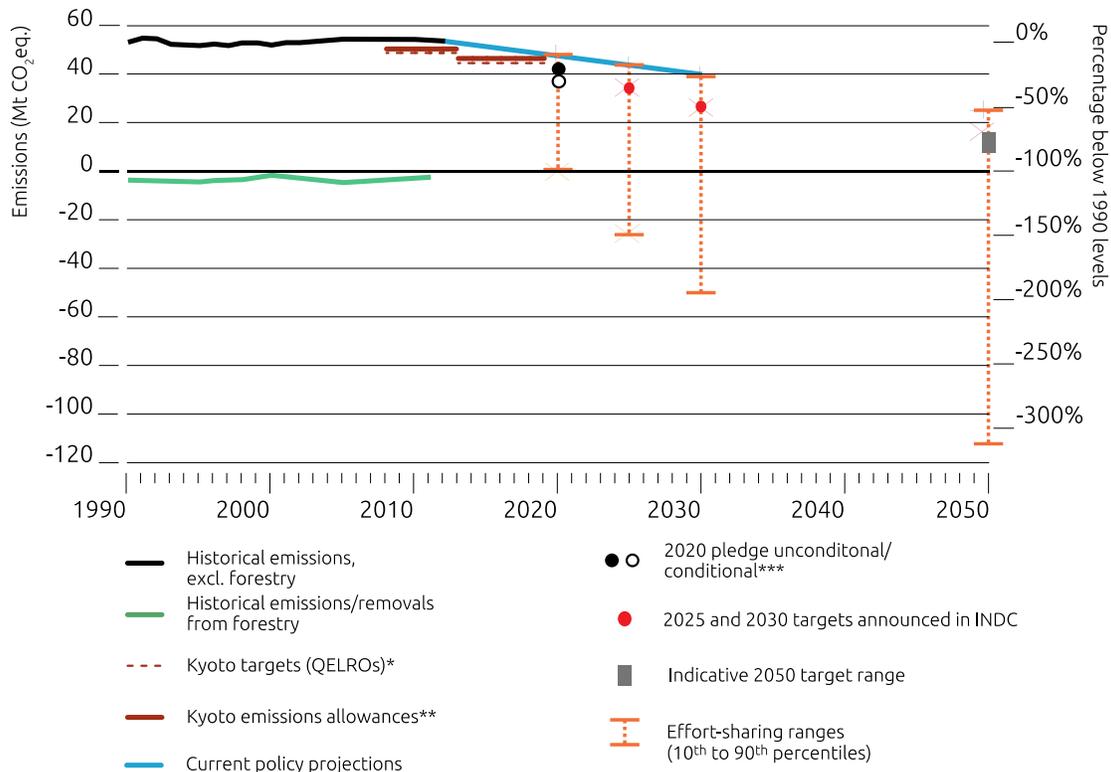
Introduction

All countries “in a position to do so” are asked to submit an “intended nationally determined contribution” (INDC) to a future international climate agreement by 31 March this year. The intention is that all countries transparently present their proposed action, so that during the

¹ “At least 30% of this reduction must be achieved within Switzerland itself.”

course of 2015, proposals can be adjusted and strengthened if they are, in aggregate, insufficient to meet the globally-agreed long-term goal of holding warming below a 2°C increase.

Switzerland submitted its INDC on 27 February 2015, announcing it would aim to achieve a 50% greenhouse gas (GHG) emissions reduction by 2030 compared to 1990, with at least 30% to be achieved domestically and the rest potentially through emission reduction measures abroad.² The INDC will build on existing measures and is still subject to approval by the Swiss Parliament.



* 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 unconditional/conditional pledge. This differs from the Kyoto pathways as it depicts final 2020 levels whereas the Kyoto pathway considers the average level of emissions over the second commitment period (2013-2020).

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Figure 1. Switzerland's emissions and reduction targets including recently submitted INDC

² As specified in the Government's page <http://www.bafu.admin.ch/klima/03449/12696/index.html?lang=en&msg-id=56394>

Overall assessment and equity principles

Switzerland's 2030 target is broadly consistent with a continuation of a linear trend between the current level of emissions and the 2020 target, formulated in the Kyoto Protocol and announcements under the Convention. Switzerland specifies in its INDC communication that it expects to achieve emissions reductions of 35% below 1990 in 2025. The Swiss government will formulate a clear mitigation plan for the period 2021–2030 by mid-2016.

For the long term, Switzerland has put forward an indicative target of a 70%–85% reduction by 2050, relative to 1990 levels (or 71-85% below 2010 levels). The INDC document states that this is in line with the IPCC recommendation (40–70% reduction below 2010 emissions by 2050).

However, the IPCC numbers are for global emissions. A comparison with different effort-sharing calculations based on equity principles reveals that the Swiss mitigation proposal is in line only with a minority of burden-sharing principles. For the most stringent equity principles, Swiss GHG emissions should fall below zero in 2020. Figure 1 shows the ranges³ of what is considered Switzerland's "fair" contribution to the globally-agreed 2°C warming limit. The effort-sharing studies in the CAT's database include over 40 studies used by the IPCC (Höhne et al. 2014; Clarke et al., 2014) plus additional analyses the CAT has performed to complete the dataset.

LULUCF

Switzerland's proposal to reduce emissions by 50% below 1990 levels by 2030 will include forestry accounting. This could effectively weaken the reductions by all other sectors and represents an obstacle to transparency and unambiguous quantification of the "real" emission reductions. The government communicated that it will apply IPCC methodologies to account for forest management for the second commitment period (CP2) of the Kyoto Protocol and has indicated that it intends to include non-forest land in its accounting rules after 2020. However, a clear methodology for this has not yet been defined, and a quantification of the impact of those rules on final emissions levels is therefore not possible. Including LULUCF credits in the Kyoto Protocol's CP2 effectively weakens the Swiss target for all other sectors by about 3.5%.

Emissions reduction measures abroad

The Swiss INDC clarifies that a maximum of a 20% reduction below 1990 emissions levels will be met through emission reduction measures abroad. Such measures could include use of CDM⁴ units, carbon credit offsets, new market mechanisms or direct investment in emissions reduction measures. With transparency provisions still to be negotiated for many of these approaches, significant uncertainty remains as to the actual level of emissions reductions likely to be achieved in practice.

We quantify domestic reduction and carbon credits to achieve the 2030 target and the associated expenditure. Given the prospects of linking the SWISS ETS market with the EU ETS⁵, the range of CO₂ prices in Europe can be used as a proxy for the Swiss carbon market. Future carbon prices

³ 10th to 90th percentile

⁴ The Clean Development Mechanism allows countries to accomplish abatement through action in other countries.

⁵ http://ec.europa.eu/clima/policies/ets/linking/index_en.htm

depend on the level of planned climate action, which, in the case of the EU, is in line with 2°C compatible scenarios.⁶ Under 2°C scenarios, the 2030 European carbon price ranges from USD\$39 to USD\$127/tCO₂ in 2030.⁷

However, considering current oversupply and the level of ambition in other countries being very low, the implied price of carbon of the new market mechanisms and CDM could be as low as few US dollars. Taking that into account, we consider that the price of such credits could be in the order of a few dollars to around USD\$127. Achieving a 20% reduction below 1990 levels “abroad” would require the purchase of roughly 10 MtCO₂ of credits by 2030. Accordingly, the associated expenditure for the use of international carbon credits ranges between virtually zero to USD\$1.3 billion⁸.

Long-term targets and mitigation actions

Switzerland has relatively low emissions from electricity generation due to the high share of hydropower. The transport and building sectors are the main sources of current GHG emissions. In particular, the contribution of the building sector to CO₂ emissions can be as high as 86% in the Alpine regions, due to harsh climate conditions (Walz et al. 2008).

As a result, the Swiss government has, in the past, mainly focussed on energy efficiency initiatives, such as the 2000-Watt Society. These initiatives aim at reducing household energy consumption in the long-term, suggesting per capita emissions should not be higher than 1 tCO₂ in 2050 (Heeren et al. 2012).

In its INDC submission, the Swiss Government proposes an indicative target of reducing emissions by 70–85% by 2050, including the use of carbon credit offsets. According to our calculation, this corresponds to an emission per capita of 0.7–1.4 tCO₂ per capita by 2050⁹, consistent with emissions per capita levels communicated in the INDC (1–1.5 tCO₂).

To bring Switzerland’s INDC in line with fair emissions reductions that are 2°C compatible, it needs to increase the target and clarify and limit the role of abatement in its LULUCF sector.

⁶ Source: CAT calculations based on LIMITS database

⁷ Source: LIMITS database, 20th to 80th percentile. In order to avoid an overestimation of carbon prices, we opted to consider a narrower range (20th to 80th percentiles) of projected carbon prices. The majority of the models (around 70%) in the LIMITS database envision a carbon price lower than 100USD/tCO₂.

⁸ The 10MtCO₂e abatement by 2030 would not be achieved in one year, but rather as a gradual reduction during 2021-2030. It is therefore fair to assume a linear decay of emissions throughout the decade, which would result in a total reduction of 50MtCO₂e during 2021-2030. Such reductions could cost Switzerland a total of USD\$6.35 billion during the 2030’s.

⁹ Population projections source: World Population Prospect (medium fertility rate)– 2012 Revision

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The Climate Action Tracker is an independent science-based assessment that tracks the emission commitments and actions of countries. It is a joint project of the following organisations:

Climate Analytics

Climate Analytics is a non-profit organization based in Berlin, 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. Contact: Dr. h.c. Bill Hare, +49 160 908 62463

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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. Contact: Dr. Louise Jeffery, louise.jeffery@pik-potsdam.de

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NewClimate Institute

NewClimate Institute is a non-profit institute established in 2014. NewClimate Institute supports research and implementation of action against climate change around the globe, covering the topics international climate negotiations, tracking climate action, climate and development, climate finance and carbon market mechanisms. NewClimate Institute aims at connecting up-to-date research with the real world decision making processes. Contact: Dr. Niklas Höhne, +49 173 715 2279

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