CLIMATE ACTION TRACKER

Switzerland

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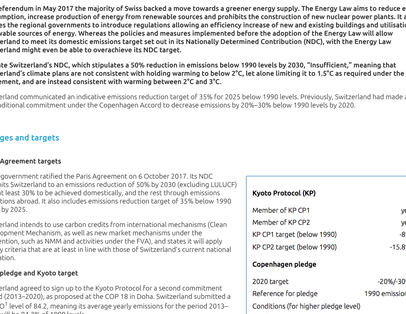
History: 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011

Rating

CRITICALLY INSUFFICIENT | HIGHLY INSUFFICIENT | INSUFFICIENT | 2°C COMPATIBLE | 1.5°C PARIS AGREEMENT COMPATIBLE | ROLE MODEL

Current Rating: INSUFFICIENT

Basic | Intermediate | Complex



Assessment

In a referendum in May 2017 the majority of Swiss backed a move towards a greener energy supply. The Energy Law aims to reduce energy consumption, increase production of energy from renewable sources and prohibits the construction of new nuclear power plants. It also obliges the regional governments to introduce regulations allowing an efficiency increase of new and existing buildings and utilisation of renewable sources of energy. Whereas the policies and measures implemented before the adoption of the Energy Law will allow Switzerland to meet its domestic emissions target set out in its Nationally Determined Contribution (NDC), with the Energy Law Switzerland might even be able to overachieve its NDC target.

We rate Switzerland's NDC, which stipulates a 50% reduction in emissions below 1990 levels by 2030, "Insufficient," meaning that Switzerland's climate plans are not consistent with holding warming to below 2°C, let alone limiting it to 1.5°C as required under the Paris Agreement, and are instead consistent with warming between 2°C and 3°C.

Switzerland communicated an indicative emissions reduction target of 35% for 2025 below 1990 levels. Previously, Switzerland had made an unconditional commitment under the Copenhagen Accord to decrease emissions by 20%–30% below 1990 levels by 2020.

Pledges and targets

Paris Agreement targets

Swiss government ratified the Paris Agreement on 6 October 2017. Its NDC commits Switzerland to an emissions reduction of 50% by 2030 (excluding LULUCF) with at least 30% to be achieved domestically, and the rest through emissions reductions abroad. It also includes emissions reduction target of 35% below 1990 levels by 2025.

Switzerland intends to use carbon credits from international mechanisms (Clean Development Mechanism, as well as new market mechanisms under the Convention, such as NMM and activities under the FVA), and states it will apply quality criteria that are at least in line with those of Switzerland's current national legislation.

2020 pledge and Kyoto target

Switzerland agreed to sign up to the Kyoto Protocol for a second commitment period (2013–2020), as proposed at the COP 18 in Doha. Switzerland submitted a QELRO[1] level of 84.2, meaning its average yearly emissions for the period 2013–2020 will be 84.2% of 1990 levels.

Switzerland's commitment under the Convention (Copenhagen Pledge) for 2020 is to reduce emissions in the range of 20% to 30% below 1990 emissions (excluding LULUCF). While the 20% reduction commitment is unconditional, the 30% is conditional on a global and comprehensive climate agreement. According to Switzerland's submission, such an agreement would include other developed countries pledging comparable emissions reductions, and developing countries contributing according to their capabilities.

Long-term goal

Switzerland's NDC contains an indicative long-term goal to reduce emissions by 2050 to 70%–85% below 1990 levels by 2050, including use of international credits.

Kyoto Protocol (KP)

Member of KP CP1	yes
Member of KP CP2	yes
KP CP1 target (below 1990)	-8%
KP CP2 target (below 1990)	-15.8%

Copenhagen pledge

2020 target	-20%/-30%
Reference for pledge	1990 emissions
Conditions (for higher pledge level)	Global and comprehensive agreement, other developed countries take comparable emission reductions, developing countries contribute according to their capabilities, bunker fuels form part of global reduction objectives covered under a sectoral approach

Paris Agreement target

Ratified	**No**
Reference for pledge	1990 emissions
2030 target:	-50% by 2030
Long term goal(s)	
Long term goal(s)	-70-85% below 1990 by 2050

Footnotes

[1] The quantified emission limitation and reduction objectives (QELRO), expressed as a percentage in relation to a base year, denotes the average level of emissions that an Annex B Party could emit on an annual basis during a given commitment period.

Fair share

We rate Switzerland's NDC "Insufficient." The "Insufficient" rating indicates that Switzerland's climate commitment in 2017 is not consistent with holding warming to below 2°C, let alone limiting it to 1.5°C as required under the Paris Agreement, and is instead consistent with warming between 2°C and 3°C. If all countries were to follow Switzerland's approach, warming would reach over 2°C and up to 3°C. This means Switzerland's climate commitment is at the least stringent end of what would be a fair share of global effort, and is not consistent with the Paris Agreement's 1.5°C limit, unless other countries make much deeper reductions and comparably greater effort.

If the CAT were to rate Switzerland's projected emissions levels in 2017 under current policies, Switzerland's would also be rated "Insufficient."

For further information about the risks and impacts associated with the temperature levels of each of the categories click here.

Current policy projections

With currently implemented policies (based on the "with existing measures" scenario of the 2nd Biennial Report), Switzerland is expected to reach an emissions level of 44 $MtCO_2e$ by 2020 and 37 $MtCO_2e$ by 2030 (excluding LULUCF), and is thus expected to meet its domestic target of a 30% emissions reduction below 1990 levels.

The Energy Law adopted in the referendum in May 2017 (Schweizerische Eidgenossenschaft, 2016a) is a major step in the implementation of the Swiss Energy Strategy 2050, the work on which was initiated after the nuclear catastrophe in Fukushima (Schweizerische Eidgenossenschaft, 2017). The three strategic objectives of this Strategy are increasing energy efficiency, increasing the use of renewable energy, and withdrawing from nuclear energy. It also requires fossil fuel and electricity operators to compensate for their emissions either domestically or abroad (Schweizerische Eidgenossenschaft, 2011). These policies will sit alongside the ETS and CO_2 tax already in place in Switzerland, with the CO_2 tax funding some of the initiatives.

Energy sector

As part of the Energy Strategy 2050, the Energy Law will go into effect in January 2018 with indicative targets to achieve a reduction in per capita energy consumption by 43% in 2035 on 2000 levels and a reduction in per capita electricity consumption of 13% below 2000 levels by 2035. With a decrease in per capita energy consumption between 2000 and 2015 of almost 18%, Switzerland is on the path towards achieving the first target, even if some acceleration is needed (The World Bank, 2017). As a result of this decrease, per capita energy consumption in Switzerland is - at 113 GJ per capita - slightly lower than the EU average per capita energy consumption (134 GJ). The situation looks different for power: in 2015 an average Swiss citizen consumed 7520 kWh of power, over 27% more than an average EU citizen (The World Bank, 2017).

Decreasing energy consumption, especially if combined with a decreasing carbon intensity of the energy sector, will have a positive impact on reducing emissions. In 2013, almost 79% of Switzerland's greenhouse gas emissions were coming from the energy sector (Schweizerische Eidgenossenschaft, 2016b). With 33 tCO_2/TJ, the carbon intensity of its energy was 48% lower than that of the energy consumed in the EU (The World Bank, 2017). With only 2.3% of electricity generated in Switzerland coming from fossil fuel power plants, and the rest mostly from hydro power plants, nuclear and, increasingly, wind and solar, the carbon intensity of its power sector is relatively low (Verband Schweizerischer Elektrizitätsunternehmen, 2017).

To replace nuclear energy in the long-term and decrease electricity imports, the Energy Law also includes an indicative target for 11.4 TWh of domestically produced renewable energy (excluding hydro) by 2035 and 37.4 GWh in 2035 of hydropower (Schweizerische Eidgenossenschaft, 2016a). For non-hydro renewables, that means a more than fivefold increase in comparison to 2015 (The World Bank, 2017). This corresponds to the share of 20% of power consumed in Switzerland (excluding hydro), and almost 67% for hydropower. It is expected that 480 million Swiss Francs (USD5498 million) will be allocated to fund the investment in energy each year (Climate Action, 2017).

Industry

Similarly to the EU, Switzerland also uses an emissions trading scheme (ETS) to lower emissions from large energy intensive entities. However, the Swiss ETS is much smaller than the European ETS, not only because of the smaller market but also due to the fact that it only covers 10% of the overall emissions generated by 54 companies in the cement, pharmaceutical, refinery, paper, district heating, and steel sectors. As with the EU, its cap - set at 5.63 $MtCO_2$ for 2013 - is reduced by 1.74% a year to reach 4.91 $MtCO_2$ in 2020 (13% reduction on 2013 levels) (Mission of Switzerland to the European Union, 2017).

An examination by the Swiss Federal Audit Office came to the conclusion that, in its current form, the Swiss ETS "generates hardly any incentives for reduction" (Swiss Federal Audit Office, 2017). The audit office found several regulatory shortcomings, calling the impact of the ETS into question. High number of emissions allowances allocated free of charge decreased the willingness of companies to invest in energy efficiency.

An annual decrease of the cap by 1.74%, which was below the overall emissions reduction, has led to an oversupply of allowances and consequently low prices (ICAP, 2017). Without any reforms, the audit office found the oversupply of allowances would reach 4.5 million certificates in 2020, equivalent to 95% of the overall cap in 2013 (Swiss Federal Audit Office, 2017). The small size of the market further worsens the oversupply of allowances in case of an unexpected production stoppage or increase, and the resulting sudden changes in demand or supply of allowances.

To deal with the allowances' price volatility, in 2010 the European Commission and Swiss government opened negotiations on linking both carbon markets. In August 2017, the European Commission tabled a proposal to finalise the agreement with Switzerland. Conditional on European Parliament and EU Council of Ministers approval, it will enter into force in 2018 (European Commission, 2017). Integration of both markets would allow companies to trade emissions on a bigger market, although the European Union's Emissions Trading Scheme is also plagued by a significant and growing oversupply of emissions allowances (see CAT's assessment of the EU). The Federal Audit Office recommends the establishment of an appropriate control mechanism "at the legislative level whereby over or undersupply of the market can be responded to and unused emission allowances can be removed from the system" (Swiss Federal Audit Office, 2017).

Transport

Energy consumption in the transport sector will be reduced, for example through tightened regulations on CO_2 emissions for new cars. In line with the EU standards, the Swiss Energy Law introduces emissions limit that will decrease to 95 gCO_2/km in passenger cars by 2020, and to 147 gCO_2/km for utility vehicles and light semi-trailers (Schweizerische Eidgenossenschaft, 2016a). Incentives for Zero Emissions Vehicles (ZEVs) are currently relatively few compared to frontrunner countries such as Norway or the Netherlands (with, respectively, 29% and 6% new electric cars in 2015). Buyers do not receive a premium as they do, for example, in Germany, but are freed from the annual motor vehicle tax (KfZ-Steuer). In 2016 2% of new passenger cars in Switzerland were electrically charged vehicles, above the 1.5% average among Western European new cars (ACEA, 2017).

Buildings

Energy efficiency standards for buildings are decided at the level of regions. Communes are allowed to introduce even stricter standards (Immopro, 2017). In 2014 the regional governments agreed that new standard - MuKEn14 – should be implemented by all regions before 2018 and become binding in 2020. For new buildings, the standard amounts to 35 kWh/m^2 for both, single and multi-family houses. For warehouses the standards are even stricter and do not exceed 20 kWh/m^2. Each house should also be equipped with renewable, source of power amounting to at least 10 W pro m^2 of the living space (EnFK, 2014).

These targets have already been met by some of the buildings complying with the Swiss "Minergie" standards. There are three major categories: Minergie houses shouldn't consume more than 55 kWh/m^2 for new single houses and 90 kWh/m^2 for renovations. For Minergie-P the standards are 50 kWh/m^2 and 80 kWh/m^2 respectively. For Minergie-A the standards are 35 $kWh/m2$ for both, new builds and renovations. By April 2017 there were a total of 43.148 Minergie certified buildings in Switzerland (Minergie, 2017).

The Energy Strategy 2050 will allocate 450 million Swiss francs (USD5 467 million) from the Cantons and CO_2 levy to reduce buildings' energy use by 43% below 2000 levels by 2035. It plans to achieve this by allowing an option for allocating energy-efficiency investment costs to the two following tax periods, and a tax deduction of demolition costs when replacing older buildings (Federal Office of Energy, 2017).

Agriculture

The Climate Strategy Agriculture aims to reduce agricultural emissions by at least one third, and includes both adaption to climate change in the agricultural sector and reducing emissions. Switzerland, for example, recognises that climate change challenges in the agriculture sector require changes in agronomic practices and procedures as well as industry, trade, and consumer behavioural changes (Federal Office for Agriculture, 2017).

Forestry

The Forest Policy 2020 aims to coordinate the ecological, economic and social demands on forests, managing forests in a sustainable manner. One objective of the Policy is to utilise forest management and wood use to contribute to reducing CO_2 emissions and conserve Swiss forests to enhance their resilience (Federal Office for the Environment, 2013).

Assumptions

Pledge

We calculated targets for 2020, 2025, and 2030 from the most recent national inventory submissions (2016) and based on the latest UNFCCC information on Convention pledges and Kyoto targets.

We calculated Switzerland's LULUCF accounting quantities in 2020 for afforestation, reforestation and deforestation using the current Kyoto rules and for forest management using a net-net approach with a projected reference level for 2013–2020. Switzerland has excluded emissions from extreme events (e.g. forest fires) in calculating their reference level.

Current policy projections

Greenhouse gas emission inventories are available from 1990 to 2014 in the CRF 2016 submitted to UNFCCC. We use these historical values up to 2014 and then use growth rates based on the "with measures" scenario submitted to the UNFCCC in Switzerland's second biennial report (Switzerland, 2016), where currently implemented and adopted measures are encompassed.

Sources

ACEA. (2017). Trends in fuel type of new cars between 2015 and 2016, by country. Retrieved from http://www.acea.be/statistics/article/trends-in-fuel-type-of-new-cars-between-2015-and-2016-by-country

Climate Action. (2017). Swiss referendum votes in favour of renewables - Climate Action Programme. Retrieved August 24, 2017, from http://www.climateactionprogramme.org/news/swiss-referendum-votes-in-favour-of-renewables

EnFK. (2014). Mustervorschriften der Kantone im Energiebereich. Retrieved from https://www.energie-zentralschweiz.ch/fileadmin/user_upload/Downloads/Fachinformationen/MuKEn/17_Zusammenfassung_MuKEn14_170912.pdf

European Commission. (2017). EU and Switzerland to link their Emissions Trading Systems. Retrieved from http://europa.eu/rapid/press-release_MEX-17-2583_en.htm

Federal Office for Agriculture. (2017). Climate. Retrieved August 25, 2017, from https://www.blw.admin.ch/blw/de/home/nachhaltige-produktion/umwelt/klima.html - dokumentation_ content_blw_de_home_nachhaltige-produktion_umwelt_klima_icr_content_par_tabs

Federal Office for the Environment. (2013). Forest Policy 2020. Retrieved from https://www.bafu.admin.ch/bafu/en/home/topics/forest/publications-studies/publications/forest-policy-2020.html

Federal Office of Energy. (2017). Energiestrategie 2050. Retrieved August 24, 2017, from http://www.bfe.admin.ch/energiestrategie2050/index.html?lang=de&dossier_id=06702

Immopro. (2017). Energieeffizientes Bauen: gesamthaft planen. Retrieved from http://www.immopro.ch/energieeffizientes-bauen-gesamthaft-planen/?lang=en

Minergie. (2017). Anzahl der nach einem Minergie-Baustandard zertifizierten Gebäude: Retrieved from https://www.minergie.ch/de/verstehen/wissenswert/

Mission of Switzerland to the European Union. (2017). Linking of the Swiss and European emissions trading systems: big step forward - Media release. Retrieved August 25, 2017, from https://www.dfae.admin.ch/missions/mission-eu-brussels/en/home/news/news.html/dea/en/meta/news/2017/8/16/67745

Schweizerische Eidgenossenschaft. (2011). Bundesrat konkretisiert Stossrichtung der Energiestrategie 2050. Retrieved from https://www.admin.ch/gov/de/start/dokumentation/medienmitteilungen.msg-id-42478.html

Schweizerische Eidgenossenschaft. (2016a). Energiegesetz. Retrieved from https://www.admin.ch/opc/de/federal-gazette/2016/7683.pdf

Schweizerische Eidgenossenschaft. (2016b). Switzerland's Second Biennial Report under the UNFCCC. Retrieved from https://unfccc.int/files/national_reports/biennial_reports_and_iar/submitted_biennial_reports/application/pdf/switzerland_br2_2016.pdf

Schweizerische Eidgenossenschaft. (2017). Energiestrategie 2050: Chronologie. Retrieved from http://www.bfe.admin.ch/energiestrategie2050/index.html?lang=de&dossier_id=06603

Swiss Federal Audit Office. (2017). Evaluation der Lenkungswirkung des Emissionshandelssystems. Retrieved from http://www.efk.admin.ch/images/stories/efk_dokumente/publikationen/evaluationen/Evaluationen (51)/16393BE.pdf

Swiss parliament green lights Paris climate accord. (2017, June 8). The Local. Retrieved from https://www.thelocal.ch/20170608/swiss-parliament-green-lights-paris-climate-accord

The World Bank. (2017). World Development Indicators. Retrieved from http://databank.worldbank.org/data/views/reports/tableview.aspx

Verband Schweizerischer Elektrizitätsunternehmen. (2017). Strom und Verbrauch. Retrieved from https://www.strom.ch/de/energie/energiefakten/strom-und-verbrauch.html

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