GETTING THE DEAL THROUGH

Climate Regulation

in 19 jurisdictions worldwide

2013

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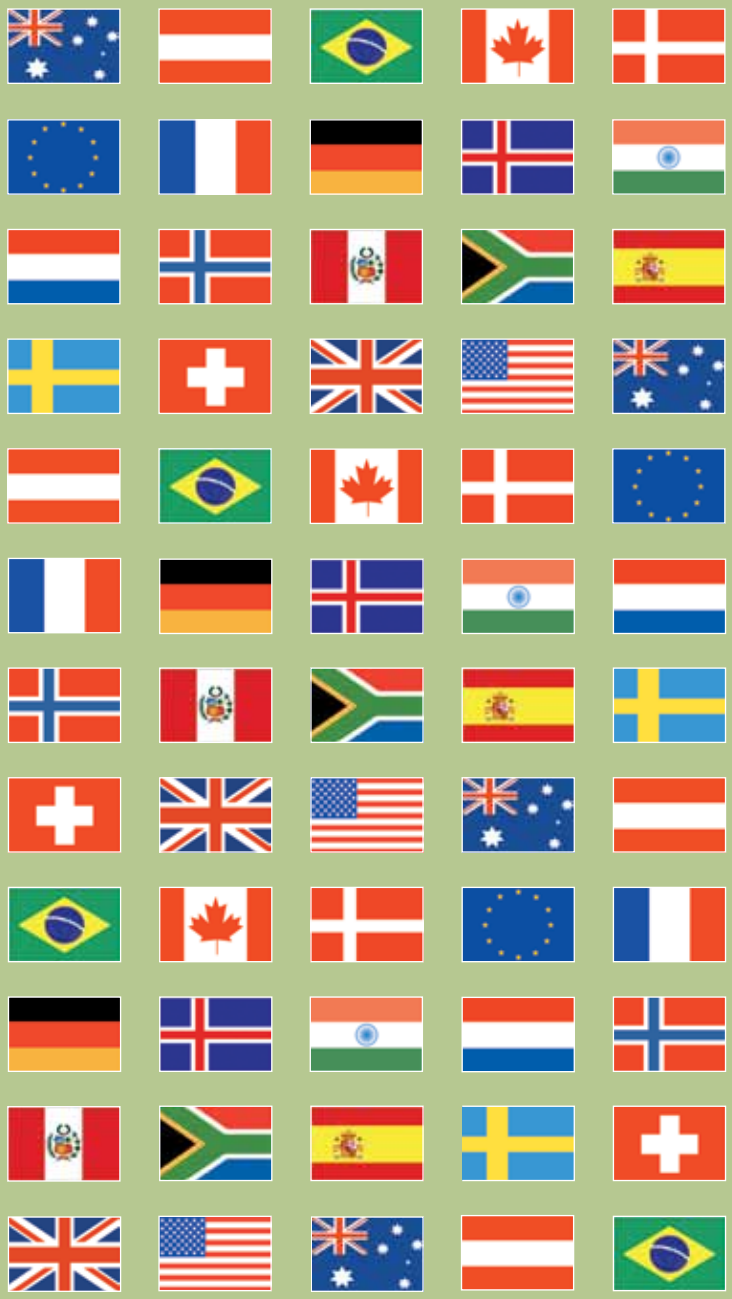

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Main climate regulations, policies and authorities

1 International agreements

Do any international agreements or regulations on climate matters apply in your country?

Like almost all of the industrialised countries Switzerland has joined the two major global initiatives on climate change and the reduction of greenhouse gases.

The United Nations Framework Convention on Climate Change (UNFCCC) was ratified by Switzerland in 1993. The Kyoto Protocol to the UNFCCC was adopted by Switzerland and entered into force on 16 February 2005. Switzerland strongly endorses the international activities on climate change and actively participates in the 'post-Kyoto' process, including the 17th United Nations Climate Change Conference in Durban in December 2011 where it in principle agreed to a second commitment period after 2012 and to reduce its greenhouse gas emissions by at least 20 per cent compared to 1990 levels.

Switzerland is located in the heart of Europe and is almost entirely surrounded by member states of the European Union (EU), but it is not a member state of the EU. In the current political climate it is not foreseeable that this is likely to change within the next years or even decades. As a result, the EU's ordinances and directives, including the EU climate change regulations (eg, the Emissions Trading Scheme (EU ETS) Directive 2003/87/EC), are not binding for Switzerland; instead it conducts its relations with the EU on the basis of bilateral agreements. Specific questions and issues are regulated with the EU via a series of treaties in clearly defined areas. Since the Free Trade Agreement of 1972, an dense network of agreements has been developed in several steps. After the rejection by Swiss voters of Swiss accession to the European Economic Area (EEA) in 1992, Switzerland and the EU concluded, among other things, seven agreements in 1999 (Bilateral Agreements I). These were followed by the Bilateral Agreements II (nine agreements and one exchange of letters) in 2004. These agreements provide both parties with extensive market access and form the basis for close cooperation in key policy areas such as research, security, asylum, the environment and cultural affairs. In respect of environmental matters and climate change regulations, Switzerland has (within the framework of the Bilateral Agreements II) become a member of the European Environment Agency, which is an important instrument of European cooperation in the environmental field, including climate matters. Its main task is to provide the European Commission with data and information and to assist the Commission in drafting environmental legislation. Other than that, Switzerland has so far not made any legally binding commitments on climate regulations or emissions reductions towards the EU. There is, however, a general accord that it would be appropriate to link the Swiss emissions trading scheme with the European emissions trading scheme (EU ETS) and in 2011 Switzerland and the EU started negotiations in this field (see question 15).

2 International regulations and national regulatory policies

How are the regulatory policies of your country affected by international regulations on climate matters?

Swiss national regulatory policies on climate change are governed by the commitments that Switzerland has made within the framework of the UN conventions on climate regulations (see question 1), and any national laws generally are and must be in accordance with these international treaties.

However, these UN treaties are non-self-executing for Switzerland, which means that they need to be implemented in Swiss domestic legislation in order to be binding for private parties. Switzerland has implemented and adopted its international commitments in the CO_2 Act (see question 3), which codifies Swiss climate regulations in line with said UN treaties. It is worth mentioning that the Swiss CO_2 Act already accounts for future commitments of Switzerland on an international level by authorising the competent executive bodies to increase the current greenhouse reduction targets provided for in the CO_2 Act and in line with future international agreements.

3 Main national regulatory policies

Outline recent government policy on climate matters.

In December 2011 the Swiss parliament passed the entirely revised Swiss Federal Act on Reduction of CO_2 Emissions (the CO_2 Act), which codifies the climate policy goals and measures from 2013 to 2020 (see also question 4). The revised CO_2 Act is based on the Swiss Federal Constitution, which states that the Confederation shall legislate on the protection of the population and its natural environment against damage or nuisance and also implements the international commitments made by Switzerland under the UN conventions. At the same time, the revised CO_2 Act is considered an indirect counterproposal to the Swiss federal 'People's Initiative for a Healthy Climate' that was submitted in 2008 by an initiative committee backed by all major environmental groups in Switzerland, and that requested a CO_2 reduction target of 30 per cent by 2020 in comparison with 1990 to be established on the level of the Swiss Federal Constitution.

In line with the international accord to limit global warming to 2 degrees Celsius, the revised CO_2 Act stipulates a reduction of domestic CO_2 emissions by 2020 by at least 20 per cent compared with 1990 levels, which equals a reduction target of 10.5 million tonnes of greenhouse gas emissions. In deciding the measures to be provided for by the revised CO_2 Act, the Swiss parliament has chosen continuity by continuing and improving the following tried and tested measures:

- the CO_2 tax on thermal fuels that has been levied since 2008 continues to apply, with an exemption being offered to companies that give the government an undertaking to make specific CO_2 reductions (see question 12);

- the existing Swiss emissions trading scheme (Swiss ETS) for energy-intensive installations has been continued and improved with a view to linking-up with the EU ETS (see question 15);
- the national programme to promote the renovation of buildings introduced in 2010 has been continued and consolidated. In future it is planned to channel a third of the revenues from the CO_2 tax on thermal fuels into the programme on buildings. In a new move, the maximum amount has been raised from 200 to 300 million Swiss francs per year. In this way, Switzerland intends to increase its efforts in the construction sector;
- the private sector initiative 'climate cent' (a price surcharge levied on all petrol and diesel imports at a rate of 1.5 cents per litre since 2005) has been replaced by an obligation for fossil motor fuel importers to pay compensation according to which motor fuel importers have to implement measures to compensate for 5 to 40 per cent of traffic-related CO_2 emissions. The maximum permitted price surcharge is 5 cents per litre of fuel;
- a binding CO_2 emissions target value of an average of 130g CO_2/km by 2015 on new cars has been introduced; and
- operators of fossil fuel power stations have to compensate in full for the CO_2 emissions they cause and thus guarantee that the greenhouse gas balance in Switzerland is not upset by new power stations. Parliament has reduced the minimum domestic share from the current 70 per cent to 50 per cent in order to allow more flexibility (see question 10).

In addition, Parliament has introduced three brand new measures in the new CO_2 Act:

- increased efforts in education, research and development relating to reducing greenhouse gas emissions and adapting to climate change;
- assignation of up to 25 million Swiss francs every year from CO_2 tax revenues from heating fuels to a technology fund. The money will be used to guarantee loans to companies developing and marketing low-emission installations and processes; and
- the possibility of crediting CO_2 stored in timber used in construction.

The revised CO_2 Act also aims to reduce consumption of fossil energy sources and thus Switzerland's dependence on foreign fuel suppliers. Investment in low-emissions technology should contribute to Switzerland's long-term competitiveness.

It is worth mentioning that the revised CO_2 Act not only defines the required reduction targets and measures but also addresses the need to adapt to climate change. In this context the Swiss Federal Council issued a report in March 2012 that defined the targets, challenges and field of action in Switzerland for adaptation to climate change. This report will be followed by a second report, expected by the end of 2013, which shall identify an action plan for specific measures to be taken.

The measures provided for in the CO_2 Act are the primary measures to achieve the CO_2 reduction target. However, measures in other policy areas also aim to influence the carbon balance in line with Swiss climate policy. For example, the action plans on energy efficiency and renewable energy comprise a package of mixed measures aiming to reduce the consumption of fossil fuels in line with the declared objectives of Swiss climate policy, to increase the share of renewable energy, and to limit the increase of electricity consumption. Switzerland has further developed an integrated transport policy comprising a variety of measures designed to reduce specific energy consumption and involving a reduction of unnecessary motorised mobility, shifting traffic from roads to more sustainable modes and improving intermodal transport chains and interconnectivity. Such measures include:

- improvements to rail infrastructure, a so-called 'agglomeration programme' aimed at promoting public and non-motorised transport in suburban regions;
- the mileage-related heavy vehicle tax aiming to support the financing of the construction of the new Alpine railway and thus facilitating the shift from road to rail freight;
- a tax exemption on biofuels (including biogas) to promote vehicles with better environmental performance;
- the timber action programme that supports greater use of native, climate-neutral timber as raw material and energy feedstock; and
- a sustainable agricultural policy that strives for higher ecological standards, thereby reducing fertiliser application.

Furthermore, the Ordinance on Chemical Risk Reduction (to control the use of synthetic greenhouse gases) and the Technical Ordinance on Waste that prohibits the landfilling of combustible waste) also contribute to the reduction of emissions.

Another key element of Switzerland's climate policy is the Swiss 'Energy Strategy 2050' that sets out the policies, targets and measures for the reduction of Switzerland's fossil energy consumption. Approximately one-quarter of Switzerland's CO_2 emissions are caused by the combustion of fossil fuels (in the industry section it is almost 55 per cent) and, thus, the targets of Swiss policy on climate and energy are to a large extent aligned and complement each other. Distinguished from the 'Energy Strategy 2050' the CO_2 Act also accounts for further sources of emissions, for example, cement production, refineries, waste, agriculture, refrigerants and CO_2 storage in the forest and timber industry.

4 Main national legislation

Identify the main national laws and regulations on climate matters.

The centrepiece and the legal framework for Switzerland's climate policy and measures is the CO_2 Act, which was initially enacted in 2000. After several partial revisions the act was entirely replaced by a new act that enters into force on 1 January 2013 (see question 3). The CO_2 Act is supplemented by a number of executive ordinances regulating the measures on climate matters in greater detail. The implementing executive ordinances and guidelines were only available in draft form at the time of the submission deadline for this issue and may still change. The most important one is the Ordinance on Reduction of CO_2 Emissions by the Swiss Federal Council (the CO_2 Ordinance) which, among other things, further details the type of greenhouse gases subject to Swiss CO_2 regulations, the sectorial interim reduction targets, the use of emission reductions achieved abroad, the certification of domestic emissions reduction projects, the technical measures for emissions reductions for buildings and cars, the Swiss ETS and the monitoring, reporting and verification of emissions data as well as the levy of the CO_2 tax, its exceptions and the distribution of proceeds.

5 National regulatory authorities

Identify the national regulatory authorities responsible for climate regulation and its implementation and administration. Outline their areas of competence.

The Federal Office for the Environment (FOEN) is the federal government's centre of environmental expertise, including matters on climate change, and is part of the Federal Department of the Environment, Transport, Energy and Communications (DETEC), one of seven federal executive departments in Switzerland.

The climate division of the FOEN is competent for climate policy in Switzerland. For instance, it is responsible for the implementation of the Kyoto Protocol and of national legislation on climate protection (the CO_2 Act). Furthermore it develops strategies for emissions reduction and adaptation to climate change and reviews the effectiveness of the policies and measures. Most of the administrative competences regarding climate regulation are with the FOEN.

Some of the competences regarding the reduction of CO_2 emissions are also with the Swiss Federal Office of Energy (SFOE), which is also a subdivision of the DETEC. It is responsible for the definition and implementation of a coherent energy policy, and the drafting and enforcement of the necessary legislation and special programmes in this field. It also executes the regulations for new cars, in coordination with the Federal Roads Office. Enforcement and collection of the CO_2 tax is by the Swiss Federal Customs Administration.

General national climate matters

6 National emissions and limits

What are the main sources of emissions of greenhouse gases (or other regulated emissions) in your country and the quantities of emissions from those sources? Describe any limitation or reduction obligations. Do they apply to private parties in your country?

According to Switzerland's National Inventory Report 2012 the greenhouse gases released into the atmosphere in Switzerland in 2010 amounted to 54.22 million tonnes of CO_2 equivalents (not accounting for the 4 million tonnes from international air traffic), which results in a per capita greenhouse gas release of approximately 6.9 tonnes. By far the most important greenhouse gas is CO_2 (84.7 per cent). The greenhouse gas emissions are attributed to the following sources:

- traffic – 31 per cent;
- industry and waste management – 28 per cent;
- private households (especially heating but not including transport) – 21 per cent;
- agriculture and forestry – 11 per cent; and
- services – 9 per cent.

Under the Kyoto Protocol, Switzerland committed to an annual average greenhouse gas emission reduction target of 8 per cent for the period from 2008 to 2012 compared with 1990 levels. It is forecast that Switzerland will not be able to achieve this target by domestic reductions, but will offset excess emissions by the purchase of foreign emissions reduction units from CDM/JI projects. For the period from 2013 to 2020 the CO_2 Act stipulates a reduction of domestic CO_2 emissions by 2020 of at least 20 per cent in comparison with 1990 levels. The Federal Council is authorised to raise this target percentage to 40 per cent in accordance with international agreements. The CO_2 Ordinance provides for the following national sectorial interim targets compared with 1990 levels:

- sector buildings: in 2015 a maximum of 70 per cent and in 2019 a maximum of 60 per cent;
- sector traffic: in 2015 a maximum of 100 per cent and in 2019 a maximum of 90 per cent; and
- sector industry: in 2015 a maximum of 90 per centand in 2019 a maximum of 85 per cent.

Private parties are not directly bound by the emission limitations and reductions stipulated by the UN climate regulations and the CO_2 Act.

7 National emission projects

Describe any major emission reduction projects implemented or to be implemented in your country. Describe any similar projects in other countries involving the participation of government authorities or private parties from your country.

To comply with its reduction commitments Switzerland has established a mix of domestic measures and initiatives (see question 3) but also participates in international projects.

Private parties that are obliged to compensate for their CO_2 emissions (see question 10) or that have committed to a binding reduction target (see question 12) may to a certain extent compensate for their emissions through emissions reduction credits generated through domestic or foreign emissions reduction projects. Those eligible are CDM and JI emissions reduction projects certified in compliance with the UNFCCC (CERs/ERUs), provided that certain additional Swiss quality requirements are met. Voluntary domestic emissions reduction projects aiming to generate emissions reduction credits must meet particular requirements and need validation and certification by the FOEN.

Domestic emission reduction projects include measures regarding energy efficiency, for example, for buildings or projects in the renewable energy industry.

On an international level Switzerland accepts those projects foreseen by UNFCCC, with certain reservations made by the new CO_2 Ordinance. Projects in the area of nuclear energy or with regard to coal-burning power plants are not permitted.

Domestic climate sector

8 Domestic climate sector

Describe the main commercial aspects of the climate sector in your country, including any related government policies.

The Swiss federal government and the cantons have promoted energy-saving projects and subsidised the renewable energy sector for many years. The hydropower industry in particular is very important in Switzerland. This is mainly true for the mountainous area, where the barrier lakes and their respective power stations are located (see question 22). The hydropower industry produces electricity for almost 2 billion Swiss Francs ex factory. The electricity market has a total volume of approximately 10 billion Swiss francs regarding the final consumption. The hydropower industry is responsible for more than half of the production.

The Swiss solar industry is – probably due to limited subsidies – not as important as, for example, in Germany. Nevertheless there are some bigger companies in this field in Switzerland. Currently, the solar industry (especially in Europe) is facing a major crisis.

General emissions regulation

9 Regulation of emissions

Do any obligations for emission limitation, reduction or removal apply to your country and private parties in your country? If so, describe the main obligations.

For Switzerland's international and domestic greenhouse gas reduction targets please refer to questions 4 and 6.

With the exception of fossil fuel power stations and fossil motor fuel importers, which are required to compensate for their CO_2 emissions (see question 10), the Swiss emissions allowance regime is, as a rule, based on incentivised voluntary measures provided for in the CO_2 Act and the CO_2 Ordinance. Private parties, be it mandatorily or upon application, are exempted from the CO_2 tax (see question 12) but must comply with their individual reduction targets (see questions 12, 14 and 15).

10 Emission permits or approvals

Are there any requirements for obtaining emission permits or approvals? If so, describe the main requirements.

Fossil fuel power plants require a permit by the government and may only be established and operated if the operator commits to compensating for all emissions in full and to operate the power plant on the most technically advanced level. The details of these requirements are set forth in a compensation agreement to be concluded between the operator and the government. Non-compliance

by the operator triggers a contractual penalty. The compensation requirement is not primarily a measure to ensure compliance with the domestic emissions reduction target set forth by the CO_2 Act (see question 6), but is meant as a stabilisation measure in order to ensure that the greenhouse gas reductions are not offset by new power stations. Power station operators – regardless of the domestic reduction target – are entitled to compensate for up to 50 per cent of their emissions by the purchase of foreign emissions reduction certificates. The remaining 50 per cent must be compensated by domestic measures. As fossil fuel power stations are not involved in the Swiss ETS (see question 15), no domestic emission allowances may be purchased to meet the compensation obligation. Other operators or installations do not require a permit to emit CO_2.

11 Oversight of emissions

How are emissions monitored, reported and verified?

Monitoring, reporting and verification duties are set forth in the CO_2 Act and are detailed the CO_2 Ordinance. Companies participating in the Swiss ETS must implement and submit a monitoring plan, which needs to be approved by the FOEN, setting out the measures to monitor and report emissions data for the purpose of the allocation and redemption of emission allowances. Swiss ETS participants as well as companies that do not participate but have committed themselves to an emission-reduction target must report annually on their emissions for the preceding year by no later than 31 March. In addition, certain ad hoc reporting duties apply in the case of extraordinary circumstances, such as changes to the corporate structure. Particular monitoring and reporting requirements apply in other areas covered by the CO_2 Act, such as for importers of cars and fossil motor fuels and applicants for domestic emission-reduction projects.

Emission allowances (or similar emission instruments)

12 Regime

Is there an emission allowance regime (or similar regime) in your country? How does it operate?

With the exception of fossil fuel power stations, which are required to compensate in full for their CO_2 emissions (see question 10), the Swiss emissions allowance regime is, as a rule, based on incentivised voluntary measures provided for in the CO_2 Act and the CO_2 Ordinance. A key element of the regime is the CO_2 tax levied on thermal fuels (currently 36 Swiss francs per tonne of CO_2, but the Swiss Federal Council is authorised to increase the amount up to 120 Swiss francs). Companies, especially those industries with substantial CO_2 emissions from the use of heating fuels, may apply for exemption from the CO_2 tax, provided the company commits to emission reductions until 2020. The company has to compile an emission reduction target based on past emissions, the technological potential and economic viability of various measures within the company. There are different approaches to define a reduction target, an individual standardised or a measure-based reduction target, depending on the size of the company and on whether or not it was already exempted from the CO_2 tax during the first Kyoto Protocol commitment period from 2008 to 2012. Application has to be made to the FOEN that determines the legally binding reduction commitment granting exemption from the CO_2 tax.

A company has three options to use to comply with the agreed emission reduction:

- increasing energy efficiency within the company (eg, by the measures determined in an action plan);
- buying emission allowances from other companies that are exempt from the CO_2 tax and that have achieved larger reductions than agreed in their reduction target; or
- buying emission credits from certified domestic or international mitigation projects (eg, CERs/ERUs) up to a defined maximum level of the company's emissions.

CO_2 tax exempted companies that do not use all their emission allowances are permitted to sell them on the market. Companies that are unable to cover their CO_2 emissions must, as a sanction, pay 125 Swiss francs per emitted tonne of CO_2 above the commitment; such sanction, however, does not exempt the company from covering excess emissions by allowances or reduction certificates. For allocation of allowances and trading on the Swiss ETS see questions 14 and 15.

Out of the proceeds from the CO_2 tax, one-third, up to a maximum amount of 300 million Swiss francs, is channelled into the programme on buildings (refurbishment of buildings, upgrade of heating systems, and use of renewable energy). Up to 25 million Swiss francs will be set aside to fund a newly introduced technology fund (which shall guarantee loans to companies developing and marketing low-emission installations and processes). The remaining revenues are equally refunded to the Swiss population and to the business community in proportion to wages paid.

13 Registration

Are there any emission allowance registries in your country? How are they administered?

The registry for emissions allowance in Switzerland is the Swiss Emissions Trading Registry (SETR) administered by the FOEN. It is an electronic online accounting system, which ensures that all transactions of emission allowances or credits (which are in electronic form only) are administered in an accurate matter. The main purpose of the SETR is to aid the Swiss emissions trading system (Swiss ETS; see question 15) with allocation, cancellation and transfer of emissions allowances and emission reduction units as well as for supervising compliance with reduction targets. Besides Swiss ETS participants the SETR is also open for other parties that wish to trade with emission allowances or credits. Companies and persons that are allocated emissions allowances, or that wish to deal with such allowances, must apply for an account in the SETR through which they can manage their transactions.

14 Obtaining, possessing and using emission allowances

What are the requirements for obtaining emission allowances? How are allowances held, cancelled, surrendered and transferred?

The total amount of annual allowances (cap) available for the period from 2013 to 2020 is determined in advance by the Swiss Federal Council taking into account the reduction targets of the Swiss CO_2 Act. The cap is calculated on the basis of the annual average of the sum of past emissions for the period from 2008 to 2012 plus an annual average of the sum of past emissions for 2009 to 2011 for installations that will be newly covered in the Swiss ETS as of 2013. For the determination of the cap for the years 2013 to 2020 the total amount of allowances (starting from 2010) is gradually reduced by 1.74 per year. Of the cap a reserve of 5 per cent is set aside for new market entrants and substantial capacity increases of existing installations. The remaining 95 per cent will be allocated to the Swiss ETS participants (see question 15) free of charge, but only to the extent required for a CO_2-efficient operation (based on a benchmark model, subject to certain adjustment factors). Any remaining emissions allowances will be auctioned. If, however, the total allowances to be allocated to the ETS participants free of charge exceeds the cap, the allowances for each ETS participant will be cut on a pro rata basis. Swiss ETS participants must open an operator account in the SETR on which the allocated allowances are credited. In

order to comply with its obligations a Swiss ETS participant must cover its reported, monitored and verified emissions (see question 11) for a year by emission allowances or, to the extent permissible, by emission-reduction units. Such allowances and certificates must be surrendered by 30 April of each year by way of a cancellation transaction in the SETR initiated by the account holder itself. All transactions of allowances and credits are administered and carried out through the SETR (see question 13). For coverage of excess emissions and sanctions in case of non-compliance see question 12.

Trading of emission allowances (or similar emission instruments)

15 Emission allowances trading

What emission trading systems or schemes are applied in your country?

Switzerland maintains its own domestic ETS, a cap-and-trade system implemented in 2008 on the basis of the legal framework of the Kyoto Protocol and the CO_2 Act. One of the aims of the revised CO_2 Act (see questions 3 and 4) was to align the Swiss ETS to a large extent with the EU ETS in order to link up the Swiss system with the one of the EU in the near future. The Swiss ETS deviates only a little from the EU system: fossil fuel power stations, which are obliged to compensate for their emissions in full (see question 10), are currently not included in the Swiss ETS. In contrast most EU member states' waste combustion stations are covered by the Swiss ETS and medium-sized installations have the option to voluntarily participate. Also, until linked with the EU ETS, the auction of allowances is governed by different rules. The interconnection with the EU ETS would lead to an equal treatment of Swiss and EU emissions allowances that, from a Swiss perspective, would grant Swiss companies more flexibility and access to a well-established and liquid market. Negotiations with the EU are currently ongoing but an interconnection between the two systems in not expected before 2014.

As of 2013 companies of certain categories designated in the CO_2 Ordinance with very high CO_2 output (except for fossil fuel power stations; see question 10), ie, with a total rated thermal input of at least 20MW, are mandatorily included in the Swiss ETS with the possibility of applying for an exemption if a threshold of 25,000 tonnes CO^2 emissions was not exceeded during the past three years (opt-out), but such exempted installations remain subject to reporting and monitoring obligations. It is estimated that approximately 50 to 70 Swiss installations will be mandatorily covered by the scheme. Other emitters of certain categories designated in the CO_2 Ordinance with high or medium CO_2 output (ie, with a total rated thermal input between 10MW and 20MW) may voluntarily apply for inclusion in the system (opt-in). Emitters included in the Swiss ETS, be it mandatorily or upon application, are exempted from the CO_2 tax (see question 12) and are eligible for allocation of emissions allowances free of charge (see question 14).

Smaller emitters falling below a threshold of a total rated thermal input of 10MW are not eligible for participation in the Swiss ETS but may nonetheless apply for exemption from the CO_2 tax, provided, however, that they assume a legally binding commitment to reduce their CO_2 emissions. These exempted small emitters are also not eligible for allocation of an allowance free of charge but may, to a limited extent, use certified emission reduction units in order to achieve their reduction targets.

Unlike the EU ETS, aviation emissions from international flights are not included in the Swiss ETS (nor account for the Swiss reduction targets stipulated by the CO_2 Act) but will be addressed in context with the planned linking of the Swiss ETS and the EU ETS. In order to facilitate the interconnection by 2014, Switzerland has implemented an ordinance that requires aircraft operators to collect the required tonne-kilometres data in 2013.

16 Trading agreements

Are any standard agreements on emissions trading used in your country? If so, describe their main features and provisions.

Switzerland's emission-trading scheme is no success story. For several reasons, very few transactions have been executed until now. Any that have been, have been conducted on a strictly bilateral basis between two companies that participate in the Swiss ETS. An OTC-trading platform, provided by the Bernese Cantonal Bank (BEKB), has never been used. Therefore standard agreements, especially for transactions under the Swiss ETS, do not exist. Companies trading emissions in Switzerland sometimes use the standard agreements provided by the European Federation of Energy Trader, the International Emissions Trading Association or the International Swaps and Derivatives Association. They also rely strongly on the principle of good faith.

Sectoral regulation

17 Energy production, use and efficiency

Give details of (non-renewable) energy production and consumption in your country. Describe any regulations on emissions. Describe any obligations on the state and private persons for minimising energy use and improving efficiency. Describe the main features of any scheme for registration of energy savings and for trade of related accounting units or credits.

The SFOE compiles statistics on energy supply and consumption in Switzerland. The following data is primarily derived from the overall energy statistics and the statistics on renewable energy for 2011.

The total energy production in Switzerland in 2011 was 229,070TJ, of which 198,879TJ was produced by renewable energy. The net electricity energy production in 2011 was 217,494TJ. 98,943TJ (45.5 per cent) is from non-renewable energy. An important source is nuclear energy. The 10-year average annual of nuclear energy used for producing electricity is 39 per cent, which is above the European average of 33 per cent.

In 2011 energy consumption decreased by 6.5 per cent compared to 2010; the total energy consumption (including consumption of renewable energy) amounted to 852,330TJ. The consumption of 690,690TJ derived from non-renewable sources, mainly from oil (457,460TJ), gas (103,700TJ) and coal (5,990TJ).

The legal framework for Switzerland's policy on energy matters is set by article 89 of the Swiss Federal Constitution pursuant to which the Confederation and the Cantons shall, within the scope of their powers, endeavour to ensure a sufficient, diverse, safe, economic and environmentally sustainable energy supply as well as the economic and efficient use of energy. The Confederation shall establish principles on the use of local and renewable energy sources and on the economic and efficient use of energy. On the national level the Federal Energy Act (FEA), the CO_2 Act, the Nuclear Energy Act and the Electricity Supply Act are the main regulations concerning energy production and consumption and the reduction of energy use and improvement of efficiency. In addition to federal legislation, Swiss cantons have passed subordinated supplemental legislation.

Emissions from energy are mainly governed by the CO_2 Act (see question 4). The legal measures relating to the use of energy in buildings and especially for the construction of new houses are in the competence of the cantons. The cantonal legislation in the building sector are to a large extent based on model provisions that, for example, define a maximum portion of energy from non-renewable sources that is allowed to be used in a new building for heating and for hot water.

The main targets on energy consumption are set forth in the FEA. Pursuant to article 1 FEA, the consumption of energy by private households must not increase until 2030 compared to 2009. One of the main focuses of the FEA is to increase energy efficiency

detailed in the Federal Energy Ordinance (FEO). The FEO, for example, defines efficiency requirements for electrical appliances such as refrigerators and other household appliances as well as for commercial and electronic devices. It further provides for an energy label for such appliances as well as for electric lamps, TV sets, motor vehicles, tyres and bathroom products, designed to allow consumers to identify the most energy-efficient models.

Other than the Swiss ETS (see question 15) there is no scheme for registration or trading of energy savings or similar in Switzerland (concerning trade with renewable energy, see question 19).

18 Other sectors

Describe, in general terms, any regulation on emissions in connection with other sectors.

Emissions from other sectors are in general governed by Swiss climate regulation described in question 3.

An important regulation in connection with the reduction of emission is the performance-related Heavy Vehicles Fee. It is a federal tax for heavy vehicles levied on the basis of total weight, kilometres driven in Switzerland and the emission level of the vehicle, but it does not provide for an emission limitation for such vehicles.

Renewable energy and carbon capture

19 Renewable energy consumption, policy and general regulation

Give details of the production and consumption of renewable energy in your country. What is the policy on renewable energy? Describe any obligations on the state and private parties for renewable energy production or use. Describe the main provisions of any scheme for registration of renewable energy production and use and for trade of related accounting units or credits.

The total energy production from renewable sources in Switzerland in 2011 was 198,879TJ. The net electricity production of energy in 2011 was 217,494TJ of which 118,551TJ (54.5 per cent) was derived from renewable energy sources. Hydropower accounted for 51.9 per cent of the electricity production. Non-renewable energy consumption accounted for19 per cent or 161,640TJ.

Switzerland's most important source of renewable energy is hydropower. But other renewable energy sources like solar, wood, biomass, wind, geothermal and ambient heat play an increasingly important role.

The centrepiece of Switzerland's policy on renewable energy is the 'Energy Strategy 2050', published by the government in May 2011. One of the key points of that policy is to safeguard a future energy supply without nuclear energy that leads to an emphasis on energy efficiency and the expansion of renewable energy, especially solar energy.

In Switzerland there are only a few regulations on state or private parties to produce or to use renewable energy. As already mentioned in question 17, cantonal provisions can define a maximum portion of energy from non-renewable sources that is allowed to be used in a new building for heating and to heat water. On a national level the FEA states that one of the goals of Switzerland's energy production is to increase the use of domestic and renewable energy. Another target of the FEA is to increase the proportion of electricity produced from renewable energy by 5,400GWh, or 10 per cent of the country's present electricity consumption, by 2030 compared with 2000. To achieve these goals the following measures were implemented.

Pursuant to article 7 FEA energy supply companies are obliged to also purchase renewable energy from independent producers. This often produces additional costs for the companies. The FEA and FEO determines that these additional costs shall be distributed evenly among all end-consumers and relieve energy supply companies in regions with a high level of independent producers. In addition, the FEA regulates the 'feed-in remuneration at cost'. This is an instrument that was developed for the purpose of promoting electricity production from renewable energy sources. It covers the difference between production and the market price, and guarantees producers of electricity a price that corresponds to their production costs. The feed-in remuneration at cost applies to hydropower (output up to 10MW), photovoltaic, wind, geothermal, biomass and biological waste. The application to receive this financial support must be submitted to Swissgrid, the national grid company.

The Ordinance of the Federal Department of the Environment, Transport, Energy and Communications on the Certification of Production Methods and Origin of Electricity obliges all electricity supply companies to provide end-users with information on the delivered electricity mix. Certificates of origin are issued by Swissgrid. This ensures that the electricity can be traced back to its origin and facilitates trading in electricity produced from renewable energy sources.

As to trade with renewable energy there is the 'Ökostrombörse Schweiz', a stock exchange for eco-friendly electricity where producers of renewable energy can sell their energy to energy supply companies. In Switzerland there is the association 'Energy Certificate System' that supports trade activities in this field and, among other things, the participation in the European renewable energy certificate system.

20 Wind energy

Describe, in general terms, any regulation of wind energy.

Even though wind energy does not play an important role in Switzerland the government plans to promote the construction of windmills and the production of energy from this renewable energy source more extensively. In 2011 it was only about 0.12 per cent of the total electricity production. After the implementation of the feed-in remuneration at cost as described in question 19 the construction of windmills increased. The building of a windmill requires a building permit that is granted by the Swiss cantons and municipalities and subject to local law. As a matter of fact, the planning of wind plants is often delayed or eventually prohibited due to objections and oppositions in the building permit procedure. What is more, it often conflicts with provisions concerning nature, homeland and landscape protection. Therefore in 2010 the national government developed a Swiss wind energy concept that should serve as a planning instrument for the cantons and municipalities and aims to promote wind energy. The general recommendation of the concept is to focus on larger windmills and to concentrate them in specific areas, rather than establishing large numbers of small windmills all over Switzerland. The main criteria for identifying suitable sites are wind frequency, exploitation, distance from residential areas and compatibility with nature and landscape protection.

21 Solar energy

Describe, in general terms, any regulation of solar energy.

According to analyses made by the Swiss government the potential of solar power in Switzerland is considerable and it is estimated that it would be possible to generate approximately 20 per cent of the present electricity demand by 2050. In 2011 only 0.25 per cent of the electricity in Switzerland was produced by solar panels. The SFOE recently estimated that all the heating requirements of Swiss households could be satisfied with the use of solar collectors, provided that all existing buildings are optimised.

For this reason Switzerland has adopted different measures to promote the production of solar energy like the feed-in remuneration at cost (see question 19) or the programme to reduce emissions

Update and trends

In the wake of the Fukushima nuclear catastrophe Swiss government decided to abandon nuclear energy in the medium term and the government adopted the 'Energy Strategy 2050' in May 2011. The main goals are that Switzerland should produce as much energy as possible on its own to increase the energy savings and efficiency and to expand renewable energy. If necessary, fossil fuel based electricity production (cogeneration facilities, gas-fired combined-cycle power plants) and imports will be also expanded. Subsequent several research on the energy situation in Switzerland as done, among other things, to evaluate the potential of non-renewable energy in Switzerland. The Federal Council in April 2012 commissioned the DETEC to draw up draft legislation based on these analyses. This has been done and on 28 September 2012 the Federal Council commissioned the DETEC to carry out a public consultation on the Energy Strategy 2050. The consultation procedure will end on 31 January 2013. For the future we can therefore expect several changes in national and cantonal energy legislation.

from heating (the 'Gebäudeprogramm', see questions 7 and 12), a programme that intends to give financial support to homeowners to reconstruct their house in order to reduce heating costs and emissions. The emphasis is thereby on the construction of solar collectors.

A building permit is required to fix a solar collector. As mentioned in question 20, this area of law is mainly governed by cantonal law. The Federal Act of Spatial Planning has been enacted that aims to overcome domestic obstacles of local laws and to promote solar collectors. The Act provides the most important guidelines that have to be respected by the cantons. According to article 18a of the Act, solar collectors that can be integrated carefully in the facade or roof of a building in a construction and agriculture zone must be permitted if they do not affect national or cantonal cultural or natural monuments.

22 Hydropower, geothermal, wave and tidal energy

Describe, in general terms, any regulation of hydropower, geothermal, wave or tidal energy.

As already mentioned hydropower is now by far the most important source of renewable and CO_2-free energy resource in Switzerland. Hydropower accounts for around 56 per cent of domestic electricity production. In Switzerland there are large-scale hydropower plants mainly operated by the cantons that account for approximately 90 per cent of the total hydropower energy production. Also, there are over 1,000 small-scale hydropower plants that produce up to 10MW each. Hydropower is mainly governed by article 76 of the Federal Constitution, the Federal Act on the Utilisation of Hydropower, the FEA and the Federal Electricity Supply Act. According to the FEA the production of electricity from hydropower should be increased by 2,000GWh per year until 2030 compared with 2000 levels. A hydropower plant may only be installed if a construction permit and a concession has been granted by the relevant canton or municipality where it is located. This procedure is complex due to numerous provisions that must be respected, such as regulations on the protection of water or on the protection of nature and landscape. However, the Swiss Federation and the cantons aim to support such projects with financial aids and other measures to simplify the permission process.

Concerning geothermal energy Switzerland is currently the world leader in the use of geothermal sensors. They are often used in combination with a heat pump to heat private households but also larger buildings. To install a geothermal sensor a construction permit is needed and normally has to be issued from a special cantonal department. The provisions on the protection of groundwater often set limits to the construction of geothermal sensors. At present no electricity is produced from geothermal sources. Overall the potential for geothermal electricity production in Switzerland is estimated to be high but at the moment there are still too many uncertainties and open questions concerning costs and feasibility.

As Switzerland is not located on the sea it has no wave and tidal energy production.

23 Waste-to-energy

Describe, in general terms, any regulation of production of energy based on waste.

The production of energy based on waste plays an important role in Switzerland and is mainly governed by the FEA and the FEO. Waste incineration plants are important as they produce more than 90 per cent of their electricity from renewable sources. Many waste incineration plants sell electricity produced by renewable sources to local electricity companies. Under certain conditions incineration plants can benefit from the feed-in remuneration at cost programme. Furthermore, waste incineration provides cities and industries with district heat that comes from ecological resources.

24 Biofuels

Describe, in general terms, any regulation of biofuels.

After hydropower, biofuel is the second most important domestic source of renewable energy and Swiss policy promotes the increase of the production of energy from biomass. In Switzerland biofuel is produced from biomass such as material from forests or fields or waste and surplus wood. Manure and bio-waste from foodstuffs is also used to produce biofuels. Biofuel plants, cultivated solely for producing biofuels, are insignificant in Switzerland.

The construction and operation of a biofuel plant requires a permit. The provisions of the national and cantonal legislation on spatial planning and the Environment Protection Act in particular must be respected. Otherwise the domain of biofuels is governed mainly by the FEA. The FEO specifies under what conditions energy supply companies must purchase the energy and the feed-in remuneration at cost.

25 Carbon capture and storage

Describe, in general terms, any policy on and regulation of carbon capture and storage.

At present there are no regulations implemented in Switzerland concerning carbon capture and storage (CSS). Nevertheless, CSS is a topic discussed in Switzerland. There are Swiss companies that develop machines in this field and sell them to other countries. The Swiss research Carbon Management in Power Generation programme (Carma) that is carried out by a team of scientists (among others from the Swiss Federal Institute of Technology Zurich) explored the potential and the feasibility of CCS deployment in Switzerland. Now these scientists plan to implement the results of this research in practice by testing the carbon capture in Switzerland. The FOEN generally endorses projects in this field. However, there are a lot of uncertainties such as its financing and public acceptance.

Climate matters in transactions

26 Climate matters in M&A transactions

What are the main climate matters and regulations to consider in M&A transactions and other transactions?

As a general rule, the due diligence to be observed in M&A transactions in general applies to the same extent to transactions in the climate sector. There are, however, certain particular aspects that may need to be taken into consideration.

In particular, where, for example, the target company (especially an energy-intensive one) has committed to CO_2 reductions in order to be exempted from the CO_2 tax (see question 12) or in case of Swiss ETS participants (see question 15), M&A transactions or other corporate restructurings may trigger particular ad hoc reporting requirements and may, for example, lead to adjustments of the reduction targets or eligibility for emission allowances or, if relevant thresholds are reached due to consolidation or divestment, the status as to mandatory or voluntary inclusion in the Swiss ETS may change.

In addition, a buyer may want to verify whether and to what extent the target holds or is eligible for the allocation of emission allowances and whether they are accurately registered. Furthermore, a buyer should verify whether foreign allowances or emission reduction units held by the target company are effectively valid under the Swiss regulations (CO_2 Act and CO_2 Ordinance).

In all transactions, due diligence should verify whether and to what extent the target company is subject to climate regulations, and if so, whether it is compliant.

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