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Offsetting CO₂ emissions: projects and programmes Eligible and ineligible project and programme types

Annex L to the communication 'Offsetting CO₂ emissions: projects and programmes'

1 In Switzerland: Eligible project and programme types

Table 1 gives a non-exhaustive list of project and programmes types, classified by category, whose emission reductions can be taken into account and for which attestations can be issued, provided that the requirements of the CO₂ Ordinance are met. Projects and programmes of all categories and types may be submitted to the FOEN for assessment as long as they are not explicitly precluded by Annex 3 of the CO₂ Ordinance (see section below).

Table 1 – In Switzerland: Eligible project and programme types, by category

Category	Project or programme type	Description	Examples
1. Energy efficiency (supply side)	1.1 Use and avoidance of waste heat	Waste heat is defined as heat loss resulting from energy conversion or chemical processes (including waste incineration), which is unavoidable given the state of the art. The heat from installations whose primary and equivalent purposes are the simultaneous production of electricity and thermal energy is not considered as waste heat (Art. 2 let. e and f of the Ordinance of 1 November 2017 on the Promotion of the Production of Electricity from Renewable Energy; SR 730.03).	<ul style="list-style-type: none"> • Use of steam in industry • Use of waste heat from wastewater treatment plants • Recovery of unusable process heat • Use of waste heat from existing nuclear power plants, provided this does not affect the phase-out of these plants • Use of waste heat from municipal waste incineration plants • Enhanced thermal insulation in power generation facilities
	2. Energy efficiency (demand side)	2.1 More efficient use of process heat by the end user or system optimisation	Includes activities that improve a system's output (efficiency per unit produced). After the intervention, a unit can be produced with fewer greenhouse gas emissions (usually CO ₂) than was the case before the intervention.
2.2 Enhancement of energy efficiency in buildings		Includes measures that enhance efficiency relative to a defined state of the building (a given ambient temperature, air humidity or light level). After the intervention, the defined state can be achieved with fewer greenhouse gas emissions (usually CO ₂) than was the case before the intervention.	<ul style="list-style-type: none"> • Energy renovation of old buildings • Enhancement of building automation

3. Renewable energy	3.1 Use of biogas	<p>Production of biogas in industrial¹ or agricultural² plants using biogenic feedstocks for direct use or for injection into the natural gas network.</p> <p>The direct use of biogas as a renewable energy agent in a project or programme rather than natural gas or other fossil energy agents leads to a reduction in CO₂ emissions that can generate attestations.</p> <p>The treatment and injection of biogas into the natural gas network is deemed to have been placed on the market. If the project or programme applies for attestation for its production for injection, the biogas injected can no longer generate attestations when it leaves the natural gas network.</p> <p>In general, with projects of this type, it is not only the emission reductions resulting from the use of renewable energy that are taken into account, but also those resulting from the avoidance of methane emissions from the biowaste. If only the methane reduction is taken into account for the issue of attestations, the project falls under type 6.2 Avoidance of methane from biowaste.</p>	<ul style="list-style-type: none"> • Production and treatment of biogas from biogenic waste and injection into the natural gas network. Both the avoidance of methane emissions in the production of biogas and the injection of biogas into the network can be attested. • Production of biogas by an agricultural biogas plant to produce heat and electricity at a combined heat and power (CHP) plant for use in the offset project or programme³. Both the avoidance of methane emissions for the production of biogas and the use of the heat produced from the biogas can generate attestations
	3.2 Heat production by biomass combustion with or without local heating	Replacement of heat produced from fossil fuels with heat from renovated or new production facilities (e.g. thermal power plants) powered by renewable fuels (for projects relating to local heating networks, Annex 3a of the CO ₂ Ordinance applies).	<ul style="list-style-type: none"> • Replacement of a fossil-fuel heating system with a wood-chip system to serve existing residential or industrial buildings • Construction of a new heating system with local heating network to replace the decentralised fossil heat supply serving existing residential or industrial buildings • Conversion/expansion/replacement of existing facilities for heat production from renewable energy
	3.3 Use of ambient heat	Replacement of heat produced from fossil fuels with heat from the soil, water or air.	<ul style="list-style-type: none"> • Replacement of a fossil-fuel heating system with a heat pump (all the substituted heat can be taken into account, after deducting the CO₂ impact of the electricity consumed by the heat pump)
	3.4 Solar energy	Replacement of fossil fuels in hot water production and auxiliary heating from the boiler Replacement of mains electricity ⁴ with photovoltaic power.	<ul style="list-style-type: none"> • Solar thermal systems (solar collectors) and photovoltaic systems

¹ Plants that mainly use biowaste from the production industry or households.

² Plants that mainly use manures to which co-substrates have been added.

³ Since electricity production in Switzerland generates few CO₂ emissions, the production of electricity from biogas does not generate a significant number of attestations.

⁴ The emission factor for mains electricity is the same as that for the Swiss generation mix (see Annex A3).

	3.5 Use of off-grid power	Use of off-grid and predominantly renewable power (e.g. supplied by batteries or hydrogen cells) to replace or increase the efficiency of fossil-fuelled, mobile and off-grid electricity generation (e.g. diesel engines). This type of project explicitly excludes cogeneration plants since these produce power and heat and therefore have other characteristics.	<ul style="list-style-type: none"> • Use of batteries to reduce the fossil-fuel consumption of decentralised fossil-fuelled generators • Use of fuel cells to replace fossil-fuelled mobile generators
4. Fuel switching	4.1 Fuel switching in process heating plants	Switching from fossil fuels to CO ₂ -neutral fuels.	<ul style="list-style-type: none"> • Replacement of fuel oil with wood in industrial plants
5. Transport	5.1 Improving the efficiency of passenger and freight transport	Switching from a type of passenger or freight transport with high CO ₂ emissions to one that generates relevant and lasting reductions in CO ₂ emissions.	<ul style="list-style-type: none"> • Shift from road to rail • Traffic avoidance • Vehicle fleet management
	5.2 Use of liquid biofuels	Use of fuels derived from renewable raw materials, meeting the requirements of the Mineral Oil Tax Act of 21 June 1996 and the corresponding implementing provisions.	<ul style="list-style-type: none"> • Construction and operation of a biofuel production plant and use of biofuel for road transport in Switzerland
	5.3 Use of gaseous biofuels	Use of hydrogen from biomass or renewable energy sources that meet the requirements of the law of 21 June 1996 on the Mineral Oil Tax.	<ul style="list-style-type: none"> • Use of hydrogen as a vehicle fuel
6. Avoidance of methane (CH ₄) emissions	6.1 Flaring or use of methane for energy	Capture and use for energy or destruction of methane from landfills and wastewater treatment plants, which is not regulated by legal provisions (e.g. Ordinance on the Avoidance and the Disposal of Waste [Waste Ordinance (ADWO), or Air Pollution Control Ordinance]).	<ul style="list-style-type: none"> • Destruction of methane generated in landfills (e.g. using a lean gas flare) • Avoidance of methane generated in landfills by means of aerobisation (potentially combined with lean gas flaring) • Destruction or avoidance of methane generated on farms or in wastewater treatment plants
	6.2 Avoidance of methane generated by biowaste	Avoidance of methane by composting biogenic feedstocks to produce biogas rather than anaerobically digesting them. Where electricity and/or heat are also produced, thus generating attestations, the project is classed as type 3.1 Use of biogas.	<ul style="list-style-type: none"> • Construction or operation of industrial biogas plants, without claiming any emission reductions resulting from use of the biogas/methane
7. Reduction of fluorinated gases or CO ₂	7.1 Avoidance and substitution of synthetic gases (HFCs, NF ₃ , PFCs or SF ₆) or of CO ₂	Activities in industrial and commercial air-conditioning and refrigeration technology, the automotive and pharmaceutical industry, semiconductor manufacturing, aluminium production, window manufacturing or synthetic foam production, which result in the avoidance and substitution of synthesis gas or CO ₂ .	<ul style="list-style-type: none"> • Avoidance of leaks in refrigeration systems in supermarkets or ice rinks • Replacement of HFCs with alternative refrigerants • Replacement of SF₆ with SO₂ in a magnesium foundry • Avoidance and substitution of CO₂ as a raw material in industry
8. Reduction of nitrous oxide (N ₂ O)	8.1 Avoidance and substitution of N ₂ O (mainly in agriculture)	Activities in agriculture (particularly land use adaptation) and wastewater treatment which result in the avoidance and substitution of N ₂ O.	<ul style="list-style-type: none"> • Avoidance and substitution of fertilisers in agriculture, e.g. by switching to extensive farming • Destruction of N₂O through thermal oxidation by adding an extra treatment stage at wastewater treatment plants

9. Carbon sequestration	9.1 Carbon sequestration in wood	Activities in the forestry and timber industry which increase/extend carbon storage (absorption of CO ₂ from the air, meaning that storage takes place in Swiss forests).	• Forest management measures that promote regeneration
	9.2 Carbon sequestration in soils	Activities in agriculture resulting in increased carbon storage in the soil.	• Rewetting of bogs • Use of biochar as a fertiliser • Land use adaptation
	9.3 Carbon sequestration in inorganic materials	Activities involving a mineral carbonation process allowing the near-permanent conversion of carbon into solid matter.	• Carbon storage in concrete • Use of biochar as insulation or building materials
	9.4 Carbon sequestration in the subsoil	Trapping carbon in a layer of rock to prevent it from moving back up to the surface.	• CO ₂ storage in a saline aquifer

2 In Switzerland: Ineligible project and programme types

According to Annex 3 of the CO₂ Ordinance, no attestations are issued for a domestic emission reduction project or programme if the emission reductions are achieved through any of the project or programme types listed in Table 2:

Table 2 – In Switzerland: Ineligible project and programme types

Ineligible project and programme types	Explanation
<ul style="list-style-type: none"> • use of nuclear energy (let. a) • replacement of fossil fuels with fossil fuels (e.g. in boilers or total or partial replacement of petrol with diesel or natural gas) (let. d) 	Projects and programmes must be in line with Switzerland's overall energy policy.
<ul style="list-style-type: none"> • research and development (let. b) • information and consultation (let. b) 	Such projects and programmes would have only an indirect effect.
<ul style="list-style-type: none"> • use of biofuels that do not meet the ecological and social requirements of Article 12b of the Mineral Oil Tax Act and the associated implementing provisions (let. c) 	Projects and programmes must meet the economic and social requirements set out in Article 12b of the Mineral Oil Tax Act and the associated implementing provisions.
<ul style="list-style-type: none"> • use of hydrogen irrespective of the technology used if the requirements under Article 19a letter f of the Mineral Oil Tax Ordinance of 20 November 1996 are not met (let. e) 	Projects and programmes must be in line with Switzerland's overall energy policy (no replacement of fossil fuels with fossil fuels).
<ul style="list-style-type: none"> • use of electricity instead of fuels for process heat, except where used in heat pumps (let. f) 	It does not make sense from an energy-policy perspective to use high-value energy in the form of electricity to produce heat.
<ul style="list-style-type: none"> • non-utilisation or underutilisation (let. g) 	Examples of underutilisation include a forest that is not managed according to the principles of sustainable forestry, or an industrial enterprise at risk of bankruptcy that deliberately curtails its output in order to achieve emission reductions and so still acquire attestations.

<ul style="list-style-type: none"> · use of biochar that does not meet the requirements of the Ordinance on the Placing on the Market of Fertilisers (FertO) and where the quantity used exceeds 8 tonnes per hectare per crediting period (let. h) 	<p>This helps to meet the relevant quality and monitoring requirements, and to protect the soil.</p>
<ul style="list-style-type: none"> · use of adsorption and absorption techniques, except in connection with the decentralised use of waste heat of which there is sufficient availability (Art. 2 let. e of the Ordinance on the Promotion of the Production of Electricity from Renewable Energy) (let. i) 	<p>The energy advantage of chillers using sorption technology over compression chillers is negated if this requires the temperatures of a heat distribution network to be increased or if it prevents a subsequent increase in efficiency through a reduction in temperature. Also, producing heat solely to run a sorption chiller does not make sense from an energy perspective.</p>

3 Abroad: Eligible project and programme types

Abroad, eligible project and programmes types include those relating to energy efficiency or the use of renewable energy in households, electric mobility, the use of renewable energy in industry, and methane reduction in agriculture.

4 Abroad: Ineligible project and programme types

According to Annex 2a of the CO₂ Ordinance, no attestations are issued for emission reductions or increases in carbon storage achieved through:

- a) investments in the use of fossil fuels for energy production or the extraction of fossil energy sources, with the exception of investments that contribute to increasing energy efficiency without any modification being made to the installation using fossil fuels for energy production;
- b) the use of nuclear energy;
- c) the use of hydropower plants with installed production capacity of over 20 MW;
- d) projects in large industrial plants that do not meet the global state of the art;
- e) activities in the waste sector, with the exception of projects and programmes involving landfill gas projects in accordance with Annex 2a, para. 1, let. e of the CO₂ Ordinance, whose suitability for the deferred energy use of landfill gas is being verified, and for which attestations are only issued for the remaining 55 % once the energy use has taken place;
- f) biological CO₂ sequestration projects;
- g) the reduction of deforestation or forest degradation;
- h) the abandonment of fossil fuel extraction;
- i) activities that conflict with environmental and human rights conventions ratified by Switzerland;
- j) activities that have significant negative social or ecological effects;
- k) activities that contravene Swiss foreign and development policy.