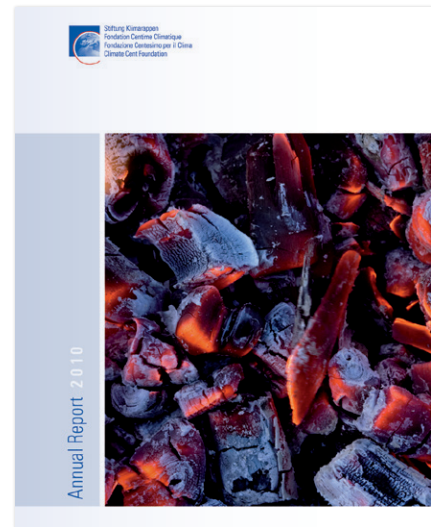
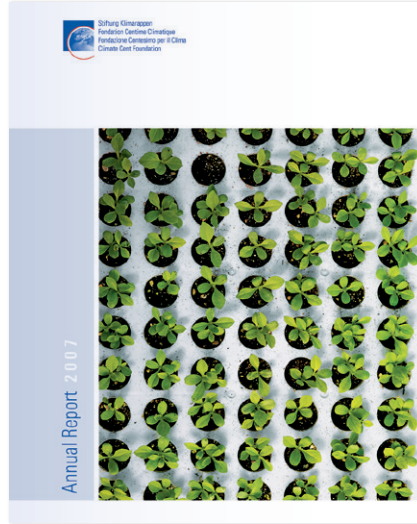




Stiftung Klimarappen
Fondation Centime Climatique
Fondazione Centesimo per il Clima
Climate Cent Foundation

Revised Final Report 2005 – 2013



Dieser Bericht ist auch in Deutsch erhältlich.
Ce rapport est également disponible en français.

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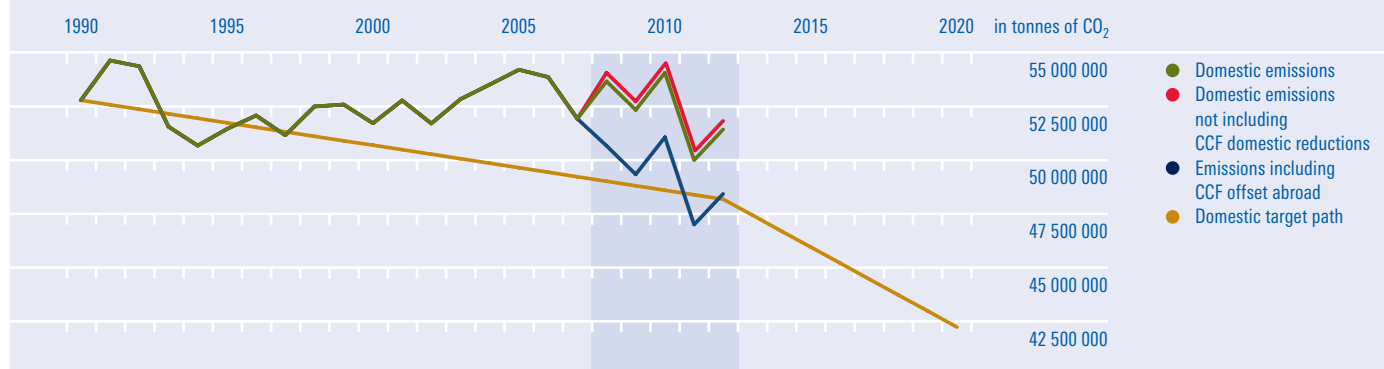
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Purpose of this report

With the present final report, the Climate Cent Foundation meets its obligation according to clause 2.1 of its agreement with the Swiss Confederation dated 8 October 2013. The report looks back at the Climate Cent Foundation's activities since it launched its operations on 1 October 2005 and explains that and how the Foundation has fulfilled its commitments vis-à-vis the Swiss Confederation as set out in the agreements dated 30 August 2005, 17 February 2009 and 17 January 2012. The Foundation's annual reports for the years 2008 to 2012 form an integral part of this final report.

Targets and framework of the Foundation

Greenhouse gas emissions in Switzerland 1990 to 2020 and contribution of the Climate Cent Foundation 2008 to 2012



Within the framework of the Kyoto Protocol's first commitment period, Switzerland has taken the international commitment to reduce its greenhouse gas emissions by an average of 8% compared to their 1990 level over the period 2008 to 2012. The national CO₂ Law, which has since undergone a total revision as of 1 January 2013, similarly required CO₂ emissions stemming from the use of fossil energy carriers to be reduced by 10%.

The Climate Cent Foundation was launched in August 2005 by the organisations *economiesuisse*, Swiss Petroleum Association, *Schweizerischer Gewerbeverband* and *strasseschweiz* as a voluntary measure of the Swiss business community according to the terms of the Swiss CO₂ Law. By investing in greenhouse gas reduction projects within Switzerland and abroad, its aim was to provide an efficient "polluter pays" contribution to Switzerland meeting its climate policy commitments.

The Foundation was funded by a charge of 1.5 cent per litre levied on all petrol and diesel oil imports from 1 October 2005 to 31 August 2012.

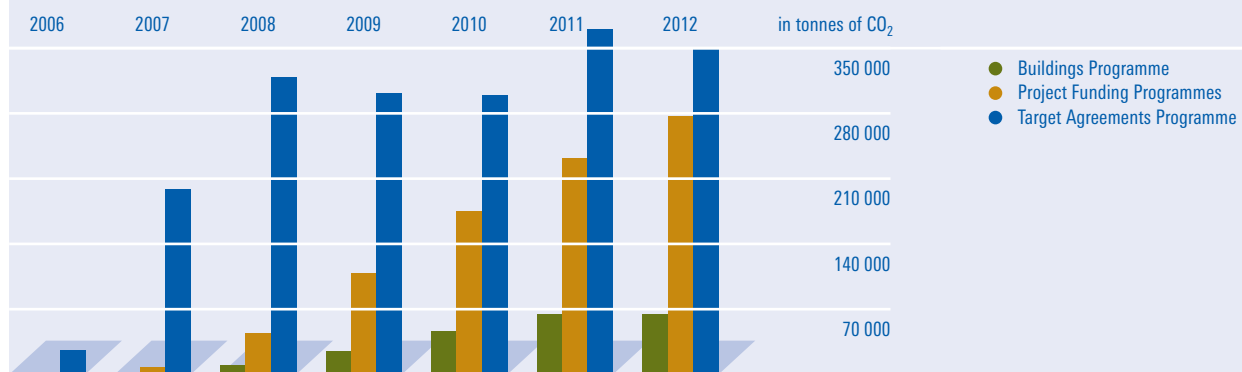
On 30 August 2005, the Federal Department of the Environment, Transport, Energy and Communications (DETEC) and the Climate Cent Foundation signed an agreement, which was extended on 17 February 2009 and on 17 January 2012. Following the terms of these agreements, the Foundation must deliver to the Swiss Confederation 17 million tonnes of CO₂ emission reductions that may be imputed toward the goals of the Swiss CO₂ Law resp. the Kyoto Protocol. Of these, at least 2 million tonnes must be generated within Switzerland and at most 15 million tonnes may originate from climate protection projects carried out abroad.

The Foundation may only submit for imputation certificates (covering emission reductions realised in climate protection projects carried out abroad) that are delivered by the competent Executive Council according to the rules of the Kyoto Protocol of the United

Nations Framework Convention on Climate Change (UNFCCC). The rules governing the imputation of CO₂ emission reductions triggered within Switzerland have been set by the "Climate Cent Coordination Group".

Activities within Switzerland

Annual CO₂ reductions by programme within Switzerland (2006 to 2012)



Overview

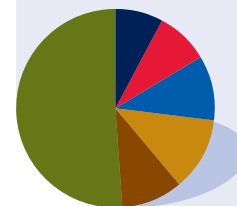
The Foundation has fulfilled its mandate to trigger CO₂ emission reductions of at least 2 million tonnes within Switzerland over the period 2008 to 2012. Over the stated period, imputable emission reductions of 2 692 038 tonnes of CO₂ have been achieved. A further 234 895 proven tonnes of CO₂ had already been reduced in the years 2006 and 2007. Sourcing these reductions generated direct and indirect costs of 434 487 305 Swiss francs.

Three programmes were in place to source CO₂ emission reductions within Switzerland:

- The **Buildings Programme** funded the energy renovation of building envelopes of existing residential and commercial buildings heated using fossil energy.
- The **Project Funding Programmes** funded CO₂ emission reduction projects in the fields of motor fuels, heating, industrial heat or waste heat recovery.
- The **Target Agreements Programme** served to purchase overfulfillments resp. emission reductions stemming from target agreements in the fields of combustibles and motor fuels that had been concluded between firms and the Swiss Confederation under the stewardship of the Energie-Agentur der Wirtschaft (Swiss Business Energy Agency EnAW).

Total CO₂ reductions by programme within Switzerland (2008 to 2012)

	in tonnes of CO ₂
● Buildings Programme	212 067
● Auction Programme	231 233
● Intermediaries Programme	283 177
● Large-Scale Projects Programme	323 851
● Target Agreements Programme (motor fuels)	266 226
● Target Agreements Programme (combustibles)	1 375 483
Total	2 692 038



Buildings Programme

The Buildings Programme ran from 1 June 2006 to 31 December 2009. Over the course of its existence, almost 10 000 projects were submitted, requesting total subsidies of 205 million Swiss francs. Of these, around 9 500 were approved and granted total subsidies of 200 million Swiss francs. Almost 500 projects had to be rejected because they did not meet formal or content-related criteria. In the case of more than 800 of approved projects, the contract was terminated by one of the two parties – either because the project had not been implemented within the set deadline by the end of 2010 or because the follow-up programme set up by the Swiss Confederation and the cantons proved more attractive to the building owner. More than 400 approved projects received no payment because it emerged when reviewing building accounts that they had not been implemented according to specifications.

8 219 projects were actually implemented and received total subsidies of 176 497 778 Swiss francs. These funds, paid upon presentation of a project's building accounts, only deviated from requested funds by 2 per mill. Two effects roughly cancelled each other out: on the one hand, renovations

on average took place at a higher energetic level than had been set out in applications, leading to higher subsidies; on the other hand, the realised project volume was lesser than planned.

For the period 2008 to 2012, the Foundation requests the imputation of 205 470 tonnes of CO₂ reductions yielded by implemented projects. CO₂ reductions of 31 resp. 1 858 tonnes had already been achieved in 2006 and 2007.

The CO₂ reduction impact of implemented projects was actually even higher, as part of the impact was transferred to the cantons of Aargau, Bern, Fribourg, Lucerne, Neuchâtel, St. Gallen, Vaud, Valais and Zurich, which in 2009 had taken part in the “Booster Programme (Aktion Konjunkturförderung)” by topping up subsidies. The CO₂ reduction impact was divided between the Foundation and participating cantons according to effectively paid subsidies. Overall, the aforementioned nine cantons paid 42.1 million Swiss francs to 3 316 projects, laying claim to 24 584 tonnes of CO₂ reductions over the period 2009 to 2012.

The canton Aargau, in which the “Booster Programme” had met with a particularly large response, sold its share of the impact of jointly subsidised projects to the Foundation.

Overall, the canton Aargau transferred to the Foundation 6 597 tonnes of CO₂ reductions achieved by 872 projects in the years 2009 to 2012, whose imputation the Foundation also requests.

Project Funding Programmes

The Project Funding Programmes ran from 1 July 2006 to 31 December 2009. Over the course of their existence, 181 projects were approved, of which 135 were still under contract at last count. Over the period 2008 to 2012, the initially approved 181 projects were expected to yield 1.06 million tonnes of CO₂ reductions in return for 109 million Swiss francs in subsidies. The 135 projects still active at last count were to yield 0.88 million tonnes in return for 92 million Swiss francs. The delivery shortfall due to contract terminations thus amounted to 17.5%.

For the period 2008 to 2012, the Foundation requests the imputation of 838 262 tonnes of CO₂ reductions yielded by implemented projects. Of these, 26 090 tonnes of CO₂ will be backed by CHUs. CO₂ reductions of 8 144 tonnes had already been achieved in 2007.

The 26 090 CHUs were supplied in replacement for the shortfall in emission reductions of project n° 2019 and belonged to Kronospan Switzerland Ltd. Compared to contractually expected CO₂ reductions of 876 594 tonnes, this implies a delivery shortfall of 4.4%. In total, projects received payments of 77 887 386 Swiss francs.

Comparative overview of CO₂ reductions and delivery shortfall rates for programmes carried out in Switzerland

	Contractually expected CO ₂ reductions (in mio. t)	Delivery shortfall due to contract terminations (in %)	Delivery shortfall due to underdeliveries (in mio. t)	Verified CO ₂ reductions (in mio. t)
Buildings Programme	0.27	12.3	9.4	0.21
Intermediaries Programme	0.32	10.3	0.6	0.28
Auction Programme	0.37	33.0	6.6	0.23
Large-Scale Projects Programme	0.37	8.3	5.7	0.32
Target Agreements Programme (combustibles)	1.56	3.8	8.3	1.37
Target Agreements Programme (motor fuels)	0.23	9.9	-27.3	0.27

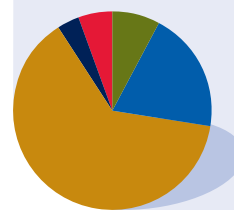
The Project Funding Programmes encompassed three different programmes:

- The **Intermediaries Programme** was in place from 1 July 2006 to 30 June 2007. Using selected intermediaries who were paid a fee in the event of successful procurement, it aimed to source emission reduction projects in a targeted manner.
- The **Auction Programme** was in place from 1 July 2006 to 31 December 2009. Over a total of 10 auction rounds, emission reduction projects were able to bid for part of a predefined auction sum.
- The **Large-Scale Projects Programme** was in place from 1 July 2006 to 31 December 2008. It targeted large-scale emission reduction projects generating over 10 000 tonnes of CO₂ reductions over the period 2008 to 2012, which the Foundation processed separately.

The three programmes met with varying degrees of success. The delivery shortfall was relatively low in the Intermediaries Programme (10.8%) and very high in the Auction Programme (37.5%). This last figure was due mainly to a high rate of contract terminations (one third). Intermediaries' often intimate knowledge of the projects they were procuring obviously allowed them to cull uncertain projects, while projects entered the Auction Programme relatively unfiltered. Projects procured by intermediaries also ranked highest by far in terms of the performance displayed by projects realised according to contract. In such cases, the delivery shortfall rate amounted only to the exceptionally low figure of 0.6%.

Project Funding Programmes: total CO₂ reductions 2008 to 2012 by project type

	2008 to 2012	in tonnes
● Motor fuels: renewables		66 345
● Motor fuels: efficiency		164 660
● Heat: renewables		532 315
● Heat: efficiency		28 749
● Waste heat recovery		46 192
Total		838 262



The rate of success also varied greatly with regard to project type. The most frequent type of project, the substitution of fossil heat by heat stemming from renewable energy sources, displayed a moderate shortfall rate of 10.4%. Projects carried out according to contract even delivered slightly more CO₂ reductions than had been expected. In contrast, projects aiming to increase energy efficiency in fossil heat production, projects aiming for the recovery of waste heat as well as projects aiming for the production resp. use of biofuels displayed delivery shortfall rates of up to 60%. Only in the case of projects aiming to increase energy efficiency in the use of fossil motor fuels did CO₂ reductions meet expectations. Biofuel projects presented a special case: the restrictive framework conditions set by the Swiss Confederation not only led to the failure of one third of the planned project volume, even projects that were implemented were only able to deliver around 60% of their planned output.

Target Agreements Programme

The Target Agreements Programme was developed in collaboration with the Energie-Agentur der Wirtschaft (Swiss Business Energy Agency EnAW). It targeted firms that, within the framework of the Swiss CO₂ Law, had committed to limiting their CO₂ emissions in a target agreement with the Swiss Confederation. The programme comprised two sections: combustibles and motor fuels.

Combustibles

The Foundation signed contracts with firms in order to purchase emission reductions stemming from the outperformance of the target trajectory set in their target agreements. For firms with a target agreement in the field of combustibles, an auction was held in each of the years 2007, 2009 and 2012. At these auctions, firms were invited to offer the Foundation overfulfillments of their target agreement staggered according to price per tonne of CO₂. In the first auction, the highest bid was set at 80 Swiss francs per tonne, at the later auctions it was set at 100 Swiss francs per tonne. The auction sum was 80 million Swiss francs at the first auction, 40 million Swiss francs at the second auction and 10 million Swiss francs at the last auction. In the event of a full use of available funds at the highest price, the first auction was thus to yield at least 1.0 million tonnes of CO₂ reductions, the second auction 0.4 million tonnes and the last auction 0.1 million tonnes. The aim of this procedure was to purchase reductions at as favourable a price as possible.

Project Funding Programmes: CO₂ reductions and delivery shortfall rates by project type

	Contractually expected CO ₂ reductions (in mio. t)	Delivery shortfall due to contract terminations (in %)	Delivery shortfall due to underdeliveries (in mio. t)	Verified CO ₂ reductions (in mio. t)
Motor fuels: efficiency	0.16	14.5	- 20.5	0.16
Motor fuels: renewables	0.17	33.2	40.2	0.07
Heat: efficiency	0.07	4.6	54.0	0.03
Heat: renewables	0.58	12.0	- 1.8	0.52
Waste heat	0.09	38.6	- 2.5	0.06

In the first auction, the offers received led to an exhaustion of the auction sum at a price of 70 Swiss francs per tonne with a reduction volume of 1.16 million tonnes of CO₂, of which 0.97 million tonnes fell within the time period 2008 to 2012. The aforementioned price was set as the rate of compensation for all CO₂ reductions sold. The quantities offered ranged from 250 tonnes (prescribed minimum) to 230 000 tonnes.

At the second auction, the highest bid only led to offers amounting to 377 789 tonnes of CO₂ reductions in total, leading to a price corresponding to the set maximum offer of 100 Swiss francs per tonne and a reduction volume equal to the volume offered at this price. The smallest quantity purchased was once again 250 tonnes, the largest 65 000 tonnes. 123 firms took part in the auction process, of which 40 had already taken part in the first auction.

The third auction was directed exclusively at firms who had been issued emission allowances in the context of the Swiss emissions trading scheme.

For the first time, firms furthermore had to provide a guarantee of delivery covering the quantity they were offering. At the highest bid, the 92 participating firms offered CO₂ reductions of 525 863 tonnes. The hammer fell at a price of 40 Swiss francs per emission allowance, at which the Foundation purchased 211 739 tonnes. Individual quantities ranged from 100 tonnes (prescribed minimum) to 30 000 tonnes. Of the 31 successful firms, 11 had already taken part in one of the previous auctions.

Over the three auction rounds, the Foundation concluded a reduction agreement with 267 firms with a target agreement in the field of combustibles: these were expected to deliver a total of 1.56 million tonnes of CO₂ in overfulfillments over the period 2008 to 2012, which would have triggered payments of 123 million Swiss francs.

The 249 contracts still active at last count were expected to deliver overfulfillments of 1.50 million tonnes of CO₂ over the period 2008 to 2012 in return for payments of 121 million Swiss francs. The delivery shortfall due to contract terminations was thus 3.8%.

Over the period 2008 to 2012, overfulfillments of 1 375 483 tonnes of CO₂ were delivered. This includes overfulfillments of 15 828 tonnes of CO₂ delivered by the 18 firms whose contract was terminated. Compared to the contractually expected amount of CO₂ reductions of 1 498 928 tonnes, this implies a delivery shortfall of 8.3%. Overall, firms with a target agreement in the field of combustibles were paid 111 371 066 Swiss francs.

Of the overfulfillments that were delivered, 1 175 469 tonnes of CO₂ were backed by CHUs. Overfulfillments of 200 014 tonnes of CO₂ thus stemmed from firms with a commitment who had not been issued emission allowances ("Benchmark" and "SME" models), as well as from firms with a voluntary

For the period 2008 to 2012, the Foundation requests the imputation of 683 445 tonnes of CO₂ reductions yielded by overfulfillments of firms with a target agreement in the field of combustibles. Of these, 483 431 tonnes of CO₂ are backed by CHUs. In 2007, CO₂ reductions of 165 012 tonnes had already been achieved.

CO₂ reductions over the period 2008 to 2012 stemming from firms with a voluntary target agreement

	Total	2008	2009	2010	2011	2012
1 st auction	74 372	27 173	14 846	13 540	11 328	7 485
2 nd auction	48 391	4 437	14 121	13 175	7 279	9 379
Total	122 763	31 610	28 967	26 715	18 607	16 864

Purchase of CHUs or CERs by firms before 31 December 2012

Firm	ZVB	Quantity (tCO ₂)	Type	Transaction	Contract termination
Dailyzer Switzerland GmbH	ZVB 122	500	CER	2012	
Molkerei Biedermann AG	ZVB 420	443	CHU	2012	
Pavatex SA	ZVB 184	9 500	CER	2012	
Albert Spiess AG	ZVB 600	86	CHU	2011	2009
Hotel Continental Zürich	ZVB 105	110	CER	2012	2012
Brönnimann	ZVB 890	200	CER	2012	2012
Härtereier Gerster AG	ZVB 970	1 000	CER	2012	2012
Alu Menziken Extrusion AG	ZVB 870	1 000	CER	2012	2011
Mitloedi Textildruck AG	ZVB 188	300	CER	2012	2012
AG Cilander	ZVB 206	319	CHU	2012	
Saint-Gobain Isover SA	ZVB 232	2 390	CER	2012	2012

The follow-up agreement dated 17 February 2009 (clause 4) set a limit for the quantity of overfulfillments stemming from voluntary target agreements that may be imputed by 2012. More precisely, a maximum of 81 000 tonnes of CO₂ may be imputed from the first auction and a maximum of 100 000 tonnes of CO₂ from later auctions. The reductions that have effectively been achieved in firms with a voluntary target agreement and are to be imputed can be found in the topmost table. The caps defined in the follow-up agreement have thus not been reached.

In order to ensure that achieved overfulfillments do indeed result from reduction efforts undertaken within the firm, firms with a commitment had to prove two things: (1) In the context

of monitoring, each overfulfillment can be shown to result from in-house measures going beyond the target trajectory. (2) Emission allowances supplied to the Foundation are not backed by foreign certificates, i.e. no CER-CHU swap is allowed to take place for the duration of the contract. Firms were furthermore informed that they should proceed carefully when transferring CHUs to the Foundation. If a company were to knowingly supply so many CHUs that it would find itself unable to meet its obligation towards the Swiss Confederation without resorting to CERs, the Foundation would return excess CHUs to the firm at the purchase price.

As requested by clause 2.1 of the agreement with the DETEC dated 8 October 2013, the middle table on page 8 lists all purchases of emission allowances or emission reduction certificates transacted by firms before 31 December 2012. In the case of firms that terminated their agreement with the Foundation ahead of schedule, a purchase of CHUs or CERs presents no problem, as they have either delivered no emission allowances under their agreement with the Foundation or at least stopped supplying emission allowances as it became clear that they would not be able to meet their obligation towards the Swiss Confederation if they tried to fulfil their agreement with the Foundation. The following further remarks can be made:

- Dailycer Switzerland GmbH: The contract was not terminated but no emission allowances were delivered in the monitoring years 2011 and 2012.
- Molkerei Biedermann AG: This concerns a transaction within the Emmi Group with no implication for compliance with the firm's existing obligation.
- Pavatex SA: This purchase of CERs was probably undertaken with the intention of handing over to the Swiss Confederation CERs instead of CHUs in order to fulfil existing obligations (swap). However, at the time of transaction the contract with the Foundation had already been fulfilled and the contractual relationship had thus ended.

– AG Cilander: The emission allowances shown above are CHUs that came into the firm's possession as a result of its take-over of the firm Kopp AG, which was later dissolved. AG Cilander only sold emission allowances made available by measures carried out within the company.

– Centravo AG (ZVB 139): After presentation of the monitoring report for the year 2012, the Foundation handed back to the firm (not listed on the middle table on page 8) 344 CHU at their purchase price of 70 Swiss francs per CHU, in order to prevent it having to resort to CERs to meet its obligations.

Motor fuels

In the case of firms with a voluntary target agreement in the field of motor fuels, the Foundation's subsidy created an incentive to actually achieve targets that had been declared on a purely voluntary basis. At last count, a contract was in place with 79 firms, which over the period 2008 to 2012 were expected to yield a total of 209 202 tonnes of CO₂ reductions at a price of 125 Swiss francs per tonne. Initially, 104 firms had signed a contract with the Foundation, promising the delivery of 232 264 tonnes of CO₂ reductions. The delivery shortfall due to contract terminations thus stood at 9.9%.

Monitoring revealed that some firms displayed negative overfulfillments, i.e. excess emissions compared to the emission target agreed with the Swiss Confederation. In such cases, it would not have been correct to value negative overfulfillments as simple "zero" deliveries. The decisive question is rather to what extent net emissions lie below the target trajectory that forms the baseline for the years 2008 to 2012. In determining overfulfillments achieved

in one year, negative overfulfillments were therefore on principle deducted from positive overfulfillments (netting out rule). Negative overfulfillments recorded for one year thus had to be offset in the following years before any further positive overfulfillments were remunerated. This rule was also applied to firms with a voluntary target agreement in the field of combustibles.

For the period 2008 to 2012, the Foundation requests the imputation of 266 226 tonnes of CO₂ reductions yielded by firms with a target agreement in the field of motor fuels. In 2006 and 2007, CO₂ reductions of 26 001 resp. 33 849 tonnes had already been achieved.

This figure includes 126 tonnes of CO₂ reductions supplied by 25 firms whose contract was terminated over time. Compared to contractually expected CO₂ reductions of 209 202 tonnes, this implies a surplus delivery of 27.3%. In total, firms with a target agreement in the field of motor fuels were paid 40 830 010 Swiss francs.

Indirect costs of the Buildings Programme	
Activity	Cost (mio. CHF)
Programme design	0.1
Management, IT	3.4
Application processing	5.6
Preliminary examination by cantons	0.8
Project advisors	2.3
Communication	2.0
Assessments	0.2
Cantonal share of costs "Booster Programme"	- 2.1
Total	12.4

Indirect costs

Over the full course of its existence, the **Buildings Programme** generated indirect costs of 14.4 million Swiss francs, of which 2.0 million Swiss francs were covered by the cantons within the context of the "Booster Programme". For the Foundation, this meant a share of indirect costs of 6.6% of overall expenses. 3.4 million Swiss francs went to TNC AG for setting up and managing the programme as well as for developing and maintaining the IT application. Another 5.6 million Swiss francs went to Gebäudeprogramm AG, which processed applications in terms of their content and employed 8 persons for this task toward the end of the programme.

Project advisors accredited by the Foundation received 2.3 million Swiss francs for their procurement of a total of 3 561 projects. 0.8 million Swiss francs went to the cantons that carried out a preliminary formal examination of applications. A total of 2.0 million Swiss francs were spent on communication activities, of which 1.3 mil-

Indirect costs of the Project Funding Programmes			
Activity	Intermediary Programme (mio. CHF)	Auction Programme (mio. CHF)	Large-Scale Projects Programme (mio. CHF)
Programme design	0.02	0.14	–
IT	0.06	0.06	–
Application processing	0.17	1.26	0.14
Procurement fees	1.61	–	–
Communication	–	0.09	–
Total	1.86	1.55	0.14

lion Swiss francs went to cantons that assisted the Foundation in its communication activities. Finally, 0.3 million Swiss francs were spent on the scientific design and supervision of the programme.

In terms of verified CO₂ reductions over the period 2008 to 2012, this amounts to costs of 58.50 Swiss francs per tonne. Average expenses per successfully implemented project were around 1 500 Swiss francs. For the median project, which received 11 180 Swiss francs, this represents a percentage of transaction costs of 11.8%.

In the **Project Funding Programmes**, indirect costs amounted to 3.55 million Swiss francs in total. In terms of verified CO₂ reductions over the period 2008 to 2012, this amounts to costs of 4.25 Swiss francs per tonne. Given average direct costs of 93 Swiss francs per tonne, the percentage of transaction costs is thus 4.4%. Indirect costs in the Intermediary Programme and in the Auction Programme were almost the same (6.60 resp. 6.70 Swiss francs per tonne). In contrast, the Large-Scale Projects Programme entailed almost no indirect costs (0.43 Swiss francs per tonne).

In the Target Agreements Programme, indirect costs were given by the commissions received by EnAW for its role as intermediary. This covered on the one hand advising firms in the development of measures whose implementation triggered verified CO₂ reductions, on the other hand carrying out monitoring duties. EnAW received commissions of 7.83 million Swiss francs for the procurement of contracts with firms with a target agreement in the field of combustibles. In terms of verified CO₂ reductions over the period 2008 to 2012, this amounts to costs of 5.68 Swiss francs per tonne. Given average direct costs of 81 Swiss francs per tonne, the share of transaction costs was thus 6.6%.

EnAW received commissions of 2.07 million Swiss francs for the procurement of contracts with firms with a target agreement in the field of motor fuels. In terms of verified CO₂ reductions over the period 2008 to 2012, this amounts to costs of 7.78 Swiss francs per tonne. Given direct costs of 125 Swiss francs per tonne, the share of transaction costs was thus 5.9%.

Appraisal

Overall, the Foundation's **Buildings Programme** may be viewed as a significant success. When the programme was conceived in 2005, only three cantons were making available subsidies for the energetic renovation of existing buildings. As the country's first long-term and nationwide buildings renovation programme, it triggered a lasting dynamic in the market and in public awareness, lifting the issue to the top of the agenda for investors, the building envelope sector and policy makers. It thus created good conditions for a seamless transition to the buildings programme set up by the Swiss Confederation.

This appraisal was confirmed by the programme evaluation commissioned by the Swiss Confederation (Interface, EBP, November 2010), which furthermore underlined the existence of a consistent and comprehensive design, a clearly identifiable impact mechanism, a functioning programme controlling as well as an appropriate organisational structure. The report highlighted as a strength of the programme the sophisticated design of the funding mechanism, and as its only weakness the underestimation of the effort required in terms of information and advisory services as well as the complexity of collaborating with the cantons.

According to the evaluation report, involved parties were highly satisfied with the services of the Processing Centre. Project advisors who had been trained by the Foundation contributed significantly to the quality of appli-

cations and to the improvement of applicants' satisfaction. According to the evaluation report, one weakness in execution was that various cantons remained sceptical as regards the funding programme and only granted it partial support. The unequal offer of cantonal advisory services was thus made responsible among other causes for the uneven cantonal distribution of subsidies.

The evaluation report further attests to the programme's high effectiveness. The subsidies demonstrably led to an increase in the scope and quality of energetic renovations for buildings in the programme. Projects in the programme were also carried out at a higher qualitative level than buildings renovated in the same period of time that did not benefit from similar support. The programme's deadweight effect – i.e. the amount of projects that would have been carried out in the same quality and scope without the Foundation's support – was estimated at 22%, which can be viewed as a highly positive figure. The deadweight effect was thus consistent with initial expectations – an important confirmation, as the programme's stated CO₂ reduction impact accounted for the deadweight effect in form of an impact markdown.

Two points may be criticised: the programme's sluggish beginnings as well as the time limit set for the imputability of its CO₂ reductions (2012). The first issue meant that the programme's initially intended targets were clearly missed, the second issue that the cost per tonne of imputable CO₂ reduction reached a vertiginous level. When designing the programme, the CO₂ reduction impact for the years 2008 to 2012 was expected to be just short of 0.5 million tonnes. However, over time and in total, the amount of submitted applications remained below expectations. The evaluation report put this down to the strict requirements that applied to the award of funds, which successfully contributed to keeping the deadweight effect low.

Imputation of the CO₂ reduction impact of building renovations was limited to 2012 at the latest, even though this impact typically lasts for 30 to 40 years. Since all projects received the same subsidy rates regardless of their start date, the Foundation paid twice as much per avoided tonne of CO₂ for a project whose impact began on 1 January 2011 than for a project whose impact started on 1 January 2009 (whose impact duration of 4 years was thus twice as long). On average, one tonne of CO₂ reductions in the Buildings Programme thus cost the Foundation 838 Swiss francs. Costs amounted to 300 Swiss francs per tonne for the first projects to be finalised and to sometimes over 2 000 Swiss francs per tonne for the last projects to be finalised.

In November 2011, a final event brought together all participating players, organisations, investors and media to carry out a comprehensive final assessment of the Buildings Programme. The final report on the Buildings Programme, providing detailed statistics and evaluations, was published separately and is available both in print and on the Foundation's website www.stiftungklima-rappen.ch.

The success of the **Project Funding Programmes** approximately met initial expectations. The provisional business plan dated January 2006 reckoned on 1.4 million tonnes of CO₂; in the end, however, the price per tonne of CO₂ turned out to be only half as high as initially expected. Furthermore, it was assumed that three auction rounds would suffice to purchase 1 million tonnes of CO₂ reductions by the end of 2007: the effort required to source projects was thus underestimated.

Faced with a little-tested environment, the Foundation's strategy to use several sourcing channels proved successful. It emerged that the push strategy, consisting in finding appropriate climate protection projects using intermediaries selected to handle specific market segments, was more effective in the initial phase than the pull strategy, consisting in sourcing such projects using calls for tender and auctions.

While the two acquisition channels likely cannibalised each other to a certain extent, the intermediaries' know-how and their support in formulating projects meant that the quality of the projects they procured was considerably higher than the quality of projects submitted in the first auction rounds, a fact that also expressed itself in these projects' much lower delivery shortfall rate.

Nonetheless, after one year of collaboration, contracts with intermediaries were not renewed, as the Foundation reached the conclusion that it could save on the not insignificant commissions by passing on the costs of the service provided by intermediaries to project owners without reducing the attractiveness of the Foundation's offerings. This consideration proved correct, since the intermediaries had by then amassed sufficient know-how to function without needing to rely on the Foundation's support.

Sure enough, the organisations previously active as intermediaries went on to advise project owners taking part in auctions and played an important role as disseminators. While projects submitted in the context of auctions initially offered reductions at slightly lower prices than those procured by intermediaries, at later auctions the prices levelled off at between 100 and 130 Swiss francs per tonne. In the beginning there was no price signal, but over time the prices for individual projects were made public, leading the range of offered prices to narrow down.

One difficulty of the auction's design (one round of offers with a set volume and a set price) for the Foundation was to set the auction sum not knowing what supply was available. Overestimating the supply could potentially have led to even very expensive projects being awarded funds. For bidders, in turn, an underestimation of available supply could have meant that in case of too high a bid they would not have been awarded funds. Initially, this proved to be the case for a few projects. Yet the problem was soon defused for both sides with the above-mentioned narrowing of the price range within which bids were submitted.

An essential aspect for projects' credibility was their assessment by experts (validation) and by independent auditing bodies; the latter had to register with the Swiss Accreditation Service (SAS). At the time, however, only very few people in Switzerland had gathered experience with the rules for assessing climate protection projects, which were only just being developed internationally. The Foundation had to make numerous efforts to train experts so they could come to an appropriate and robust assessment of projects' emission and investment additionality. Even though the situation improved over time, the Foundation's Secretariat kept playing an important role in quality assurance.

The **Target Agreements Programme** was highly effective in the field of combustibles, triggering a significant amount of emission reductions. The quality of these emission reductions was warranted on the one hand by the design of the Swiss emissions trading scheme, which at least until 2010 stipulated a relative rather than absolute reduction of emissions. On the other hand, it depended on the quality of the process by which target agreements were concluded. The Foundation partly benefited from the fact that the Swiss Confederation first had to gather experience with this tool before it could come to a uniform assessment of firms' potential for reduction activities.

A decisive factor for the programme's success was the collaboration with the Energie-Agentur der Wirtschaft (EnAW). The work of its moderators and their intimate knowledge of the firms, built up over many years, combined with the perspective of the Foundation's subsidies, made it possible to convince firms to implement otherwise economically unviable measures. The auction design used in the programme, which was different from that used in the Auction Programme, proved positive for the firms. It was possible to establish a supply curve at different prices, allowing firms to consider in advance how much they wanted to invest at each subsidy rate.

For the Foundation, the difficulty once more lay in setting the auction sum without knowledge of available supply. Since the supply curve flattens as prices increase, in the chosen auction design an overestimation of supply means that a higher average price must be paid for emission reductions. In view of this uncertainty, it would have been more favourable for the Foundation to carry out more yet smaller auctions than to proceed with only three auctions. This can be seen in the fact that in the first auction, the Foundation would already have obtained 0.93 million tonnes of CO₂ reductions at a price of 50 Swiss francs per tonne; the marginal costs of the supplementary 0.2 million tonnes of CO₂ reductions obtained at 70 Swiss francs per tonne thus amounted to more than 150 Swiss francs per tonne. If the auction sum had been set at 50 instead of 80 million Swiss francs, the result would have been far more efficient. The Foundation followed this insight for the third auction, setting the auction sum at a mere 10 million Swiss francs. The auction was heavily oversubscribed and the price much lower (40 Swiss francs per tonne).

Finally, in the field of motor fuels target agreements, the early setting of a unique price signal created clear framework conditions for firms. Save for a few exceptions, the major transportation firms all took part in the programme. The programme proved unexpectedly successful because the Foundation's subsidy provided firms with a real incentive to initiate emission reduction measures that could be implemented at short notice without requiring much investment, such as in particular the use of biofuels, to which around 40% of CO₂ reductions can be traced, as well as the shift of transports from road to rail.

Starting in 2009, the support of the use of biofuels in the context of the programme created the risk of a double count of emission reductions, since this is when the Foundation also began to support the production of liquid biofuels. However, strict monitoring on the producers' side – deliveries made to firms who were taking part in the programme had to be subtracted from sales figures – made it possible to avoid such double counts. The same procedure was applied to the Eco-Drive measure, which required a delimitation of impact vis-à-vis project no. 1270.

Activities abroad

Overview

In order to fulfil its agreement with the DETEC, the Foundation wants to make full use of its imputable quota of 15 million emission reduction certificates of one tonne of CO₂ each. The certificates meet the requirements of the Swiss CO₂ Imputation Ordinance and stem from around 170 climate protection projects approved by the UN according to the rules of the Kyoto Protocol. Detailed information on all projects mentioned below is available on the website www.unfccc.int/cdm.

As of 31 March 2014, 16 016 902 Kyoto certificates had been transferred to the Foundation's account in the Swiss Emissions Trading Registry, of which 488 966 were ERUs. The procurement of these certificates generated direct and indirect costs of 244 085 707 Swiss francs.

Participation in the Asia Pacific Carbon Fund

The Foundation participates with 25 million US\$ in the Asia Pacific Carbon Fund (APCF) of the Asian Development Bank (ADB), which launched its operations in May 2007. Its investors also include the governments of Finland, the region of Flanders, Luxemburg, Portugal, Sweden and Spain. The fund's total volume is 151.8 million US\$. In order to grant the fund greater flexibility and encourage the full investment of its means, the Foundation further granted a promissory note of 2.5 million US\$, which the fund could use to enter further contracts and thus hedge existing delivery risks.

Certificates delivered by the Asia Pacific Carbon Fund							
Project type	Country of origin	CCNUCC n°	Quantity	Project type	Country of origin	CCNUCC n°	Quantity
Waste management	Bangladesh	169	23 957	Wind	China	877	6 753
	India	505	19 170		China	1715	17 519
	India	2867	4 639		China	2771	3 796
	India	3248	6 433		China	2916	8 215
Biomass	India	313	29 690		China	3005	5 246
	India	803	5 660		China	3399	76 533
	India	804	23 509		China	3436	11 306
	India	805	28 508		China	3573	25 477
	India	813	4 577		China	3840	32 559
	India	982	32 491		China	4182	27 674
	India	632	4 354		China	4193	31 624
	India	2128	3 294		China	4253	22 574
Landfill gas	China	6348	17 944		China	4440	24 923
	Philippines	1258	56 076		China	4738	18 074
	Thailand	2138	25 615		China	4781	22 956
	Thailand	2144	9 525		China	5132	16 829
	Thailand	2970	22 020		India	315	299 552
	Thailand	3462	21 578		India	986	20 175
	Thailand	3483	52 465		India	1115	79 966
	India	1268	29 605		India	1600	33 500
Energy efficiency	China	1726	77	India	2265	42 233	
	China	1729	14 653	India	2347	113 005	
	India	1642	41 173	India	2474	8 055	
	India	1708	14 981	India	2819	36 997	
Geothermal	Indonesia	3193	250 999	India	3139	3 738	
Methane avoidance	Georgia	2404	27 638	India	3327	12 719	
	Uzbekistan	3339	252 163	India	3632	5 574	
	Uzbekistan	3910	242 606	India	3854	8 683	
	Uzbekistan	4883	25 159	India	3870	28 118	
Solar power	China	4775	3 415	India	4026	7 186	
	China	4981	2 927	India	4144	14 823	
	China	5177	1 363	India	4364	25 528	
	China	5391	292	India	4437	9 613	
Solar heat	China	5106	20 079	India	4572	6 412	
	China	5119	22 538	India	4677	30 663	
Hydro	China	574	54 928	India	4700	39 079	
	China	6447	1 726	India	4930	100 682	
				Total			2 693 883

At last count, the fund had concluded 49 contracts for the delivery of CERs stemming from 71 projects. 38 projects are located in India, 18 in China, 6 in Thailand and others in Bangladesh, Georgia, Indonesia, the Philippines and Uzbekistan. They cover 35 wind power plants as well as power stations in the fields of hydroelectricity, solar power, biomass and geothermal power, as well as projects in the fields of landfill gas, waste management and energy efficiency. 60 of the projects produce electricity with a total power of 1.9 GW. Contracts that were terminated over time were in place with a further 14 projects. Some of the existing contracts were fulfilled by the delivery of certificates stemming from replacement projects, which is why the fund's portfolio ultimately encompassed 76 projects.

In total, the Foundation has taken delivery of 2 693 883 CERs (see table on page 14). Average costs per certificate are 9.59 US\$. 142 269 CERs stem from the use of the promissory note, which was used to the extent of 0.84 million US\$.

Purchase of certificates from project owners

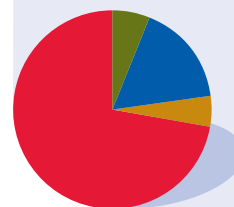
Overall, the Foundation had concluded an emission reduction agreement with 19 project owners, of which 11 were not terminated. The initially approved 19 projects were expected to yield 2 827 167 certificates, which would have triggered payments of 33.7 million euro and 2.8 million Swiss francs. The 11 projects still active at last count were expected to yield 1 951 088 certificates in return for 22.2 million euro and 2.8 million Swiss francs. The delivery shortfall due to contract terminations was thus 31.0%. To date, active projects have delivered 1 798 717 certificates. Compared to the contractual volume, this implies a delivery shortfall of 8.7%.

Of the 19 projects, 14 had been procured by brokers and 5 had been submitted to the Foundation directly. Half of the projects procured by brokers and only one of the projects submitted directly were cancelled. The Foundation had concluded an agreement with two selected brokers for the procurement of projects, establishing in particular the commission to be paid and the requirements that had to be met by projects. These two brokers were the only ones to successfully procure projects.

In general, the Foundation concluded forward contracts with project owners covering the delivery of certificates at a defined date and at a price set in advance. Delivery volumes were partly set and partly left open (offtake). The price always resulted from bilateral negotiations, and brokers were given a contractual incentive to negotiate as favourable a price as possible for the Foundation.

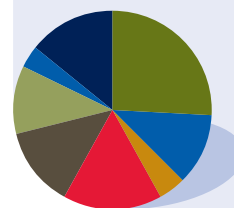
Delivered certificates by programme carried out abroad

2008 to 2012	in tonnes
Self-acquisition	980 927
Fund	2 693 883
Brokers	817 790
Traders	11 524 303
Total	16 016 903



Delivered certificates by project type

	in tonnes of CO ₂
Wind	4 530 325
Hydro	1 714 174
Biogas	700 255
Biomass	2 514 507
Landfill gas	2 065 632
Laughing gas	1 725 854
Leakage avoidance	547 566
Other project types:	
Geothermal	264 398
Solar	290 771
Energy efficiency	306 975
Fuel switch	76 708
Transport	167 167
Flaring	265 000
Agriculture	781 646
Waste management	64 199
Total	16 016 903



The 11 projects for which contracts were completed as scheduled were the following:

– **Wood waste power plant in Brazil:**

The 9 MW wood waste power plant in Itacoatiara in the Amazonas territory has been operating since November 2002 and was registered by the UN in May 2006 as project no. 168. The project owner Precious Woods delivered the full contractual volume of 157 553 CERs in 2009. The Foundation further purchased 473 598 CERs from this project via traders.

– **Wind power project in New Zealand:**

The 58 MW wind power facility in White Hill was commissioned in May 2007, yet as a JI project it generated its first certificates in 2008. The project was registered by the UN according to the simplified Track-1 procedure as number NZ1 000002. The facility operator Meridian Energy has delivered a total of 488 966 ERUs. The contract covered the initial delivery of 400 000 ERUs; the surplus delivery of 88 966 ERUs had to be accepted by the Foundation under the terms of the put option granted by contract.

– **Bus transportation project in Co-**

lumbia: The shift to a system with dedicated bus lanes and new, efficient buses in Bogotá took place in 2005. The project was registered by the UN in December 2006 as no. 672. Jürg Grütter, who as project advisor sold on certificates to the Foundation, has delivered the guaranteed 167 167 CERs.

– **Biogas project in Honduras:**

The 1 MW biogas facility has been in operation since September 2006 and was registered by the UN at the same time as no. 492. In addition, it was registered by the Gold Standard Foundation as no. 344. In total, 167 241 CERs were delivered to the Foundation. The contractual volume of 175 405 CERs was thus missed by 4.7%.

– **Use of poultry manure in India:**

The 3.7 MW biomass power plant near Rajamundry in Andhra Pradesh has been in operation since January 2009. The project was registered by the UN in March 2009 as no. 2348 and by the Gold Standard Foundation as no. 400. Overall, the project delivered 146 994 CERs. Compared to the contractual volume of 184 450 CERs, this implies a shortfall of 37 456 CERs resp. 20.2%. This delivery shortfall is due primarily to operational problems.

– **Wood waste power plant in Chile:**

The 1.2 MW biomass power plant in Tierra del Fuego in Southern Chile has been in operation since 2006 and was registered by the UN in June 2006 as no. 379. In total, it delivered 170 143 CERs. The delivery shortfall compared to the contractual volume of 246 250 CERs thus amounted to 76 107 CERs or 30.9%.

The issuance of certificates to the project was blocked for years because various procedural issues concerning monitoring and verification could not be clarified.

– **Manure management system in pig**

farming in Ecuador: This novel system, which meets highest environmental requirements, has been operating in three facilities, in part since 2000. The projects were registered by the UN in September 2006 as no. 459 to 461. Overall, 235 933 CERs were delivered to the Foundation. Thanks to the highly professional project management, the contractual volume of 202 704 CERs was outperformed by 33 229 CERs or 16.4%.

– **Run-of-the-river power station La Joya**

in Peru: The 9.6 MW facility on the river Chili in Southern Peru was registered in November 2008 by the UN as no. 1889. In total, 82 182 CERs were delivered to the Foundation, i.e. 57 818 CERs less than the contractually scheduled 140 000 CERs. Following two dam bursts in 2008 and 2010, it was to be expected that the delivery volume would diminish. The delivery shortfall is high (41.3%).

Purchase of certificates via traders

Over the years, various spot contracts were signed with 12 traders for the immediate delivery of Kyoto certificates, as a rule using an international standard agreement. The price was negotiated bilaterally and was composed of the current trading price at relevant exchanges (Bluenext, EEX) as well as a project-specific premium. Delivery and payment usually took place a few days after the transaction was finalised.

In this way, 7 874 298 CERs were purchased as follows:

Kyoto certificates by trader			
Project type	Country of origin	CCNUCC n°	Quantity
Amsterdam Capital Trading			
Biomass	Brazil	404	177 136
	China	2230	8 040
Landfill gas	Argentina	426	60 000
	Argentina	928	150 000
	Dominican Republic	2595	52 242
	Israel	147	47 957
	Columbia	2554	150 000
Gas flaring	Nigeria	2029	265 000
Hydro	Brazil	1526	64 938
	Guatemala	172	25 000
Wind	China	388	66 946
Total Amsterdam Capital Trading			1 067 259
Barclays			
Biogas	Thailand	1040	700 255
Biomass	Brazil	114	47 556
Hydro	China	2091	98 899
Wind	China	2886	103 713
Total Barclays			950 423
Bunge			
Landfill gas	Argentina	260	42 270
Total Bunge			42 270
EcoSecurities			
Biomass	Chile	258	15 000
	Ecuador	210	20 000
	Nicaragua	191	65 000
Landfill gas	China	71	24 054
Geothermal	Nicaragua	198	10 000
Laughing gas	China	1612	155 601
Total EcoSecurities			289 655

Project type	Country of origin	CCNUCC n°	Quantity
Fortis			
Landfill gas	Brazil	164	500 000
Total Fortis			500 000
Mercuria			
Biomass	Brazil	168	5 853
	Chile	346	181 844
	India	919	46 135
Landfill gas	Brazil	52	34 245
	Brazil	164	454 343
	Brazil	373	157 343
	Brazil	484	62 359
Fuel switch	Brazil	828	5 000
Laughing gas	Brazil	116	250 000
Agriculture	Brazil	337	73 739
	Brazil	365	3 106
	Brazil	419	50 000
	Mexico	105	14 275
	Mexico	150	18 302
	Mexico	204	20 884
	Mexico	240	9 345
Hydro	China	1391	18 450
Total Mercuria			1 405 223
Merril Lynch			
Biomass	China	819	121 398
	Nicaragua	191	1 535
Landfill gas	Brazil	164	1 782
Wind	China	233	91 731
	China	483	33 768
	China	894	47 194
	China	994	83 899
Total Merrill Lynch			381 307

Project type	Country of origin	CCNUCC n°	Quantity	Project type	Country of origin	CCNUCC n°	Quantity
Shell				Vitol			
Biomass	Brazil	404	44 231	Biomass	Brazil	168	167 745
	China	2230	100 000		China	819	83 005
	Malaysia	395	25 117	Geothermal	Nicaragua	198	3 399
	Nicaragua	191	6 931	Fuel switch	Brazil	755	9 349
Landfill gas	China	71	3 457	Agriculture	Brazil	337	833
Energy efficiency	India	528	35 653		Brazil	419	697
Agriculture	Chile	33	194 189		Chile	458	13 857
	Mexico	50	31 275		Mexico	105	786
	Mexico	163	17 605		Mexico	150	39 842
	Mexico	324	14 657		Mexico	204	17 672
Hydro	China	2162	609 944		Mexico	225	17 399
Wind	China	388	80 000		Mexico	324	7 250
Total Shell			1 203 059	Wind	China	233	418 423
South Pole					China	483	15 000
Hydro	India	327	84 793	Total Vitol			1 051 277
	India	328	55 924				
	India	329	62 380				
Total South Pole			203 097				
Swiss Re							
Biomass	Brazil	168	300 000				
Total Swiss Re			300 000				
Trading Emissions							
Wind	China	316	307 019				
	China	398	132 794				
	China	544	40 915				
Total Trading Emissions			480 728				

In addition, two longer-term forward contracts were in place for the guaranteed delivery of certificates for which the price was based on the market price at the moment of signing:

- **Certificate purchase agreement with EcoSecurities:** EcoSecurities had committed to delivering to the Foundation a total of 3 000 000 CERs by the end of April 2013, which would meet its requirements in terms of environmental integrity. In March 2008, the delivery volume was increased from 2 to 3 million CERs when the Foundation triggered the contractually agreed call option. In detail, the following certificates were delivered (see middle table).
- **Certificate purchase agreement with Swiss Re:** Swiss Re had committed to delivering to the Foundation a total of 650'000 CERs by the end of March 2013, which would meet its requirements in terms of environmental integrity. In detail, the following certificates were delivered (see far-right table).

Indirect costs

The APCF's transaction costs amounted to 9.52 million US\$, which represents 6.3% of the fund's volume; the Foundation's share was 1.57 million US\$. As the fund's trustee, ADB collected 1% of the fund's volume to cover its costs. The fund's office generated costs of 7.8 million US\$. Set against a delivery volume of 15.64 million CERs, transaction costs thus amount to 0.61 US\$ per CER.

Kyoto certificates stemming from longer-term forward contracts			
Project type	Country of origin	CCNUCC n°	Quantity
EcoSecurities			
Biomass	Brazil	404	270 000
Landfill gas	China	933	118 459
	Mexico	425	24 257
Energy efficiency	South Africa	1027	200 438
Laughing gas	China	1436	201 051
	China	1437	198 282
	China	1441	920 920
Hydro	China	1106	51 851
	China	1994	58 610
	China	2111	40 769
	China	2195	18 969
	China	2256	73 125
	China	4008	51 348
	Panama	669	21 670
	China	2019	177 134
Wind	China	2032	315 488
	China	2049	91 983
	China	2586	33 391
	China	3133	66 379
	China	3415	24 406
	China	4181	15 584
	China	5694	23 887
	Total Eco Securities		

The projects procured by brokers generated transaction costs (project assessments and commissions) of 3.18 million Swiss francs. Set against the delivery volume of 0.82 million certificates, this amounts to costs of 3.88 Swiss francs per certificate. In the case of projects submitted directly to the Foundation, transaction costs only amounted to 0.15 million Swiss francs for legal advisory services. These projects were assessed in-house by the Secretariat.

Project type	Country of origin	CCNUCC n°	Quantity
Swiss Re			
Solarwärme	China	2307	115 696
	China	2311	124 461
Wasserkraft	China	1124	61 214
	China	1212	50 609
Wind	China	1177	200 000
	China	4789	98 020
Total Swiss Re			650 004

In addition, the controlling of contracts concluded directly with project owners cost 0.89 million Swiss francs, and 0.07 million Swiss francs were spent on communication.

The purchase of certificates via traders generated no indirect costs, as no procurement fees were due. Here again, project assessment was carried out by the Secretariat.

Appraisal

When the Foundation launched its operations in the fall of 2005, only few climate protection projects had been registered by the UN and not a single certificate had yet been issued. The required infrastructure was only just being set up. More importantly, many of the rules and procedures required for the approval and supervision of climate protection projects at an international level were only just coming into being, not even defined or at least not yet soundly functioning.

The Foundation had to prove itself in this complex environment, rife with uncertainties and setbacks yet also filled with immense hopes. It was fully exposed to the highs and lows in the market for climate protection projects resp. emission reduction certificates – including the early upswing, the long flat stretch, and the sudden downturn in prices. In view of this situation, the Foundation's multichannel sourcing strategy proved the right one – just as it had within Switzerland.

Almost half the projects sourced by the Foundation itself or via brokers, with whose owners the Foundation concluded a direct purchase agreement, had to be cancelled because projects were carried out late or not at all, or became stuck in the UN registration process. Many other projects came to nothing after years of discussion. Although this was also part of the Foundation's experience in Switzerland, the spatial and cultural distance of projects carried out abroad makes communication harder.

Comparative overview of CO₂ reductions and delivery shortfall rates for programmes abroad

	Contractually expected certificates (in mio. t)	Delivery shortfall due to contract terminations (in %)	Delivery shortfall due to underdeliveries (in %)	Delivered certificates (in mio. t)
Asia Pacific Carbon Fund	–	–	–	–
Certificates purchased from project owners	2.83	31.0	7.8	1.80
Certificates purchased via traders	11.52	0.0	0.0	11.52

From this point of view, investing in the APCF provided a satisfying alternative, as development banks are traditionally well anchored in countries that fall within their remit and are close to the projects. However, the fact that among all comparable funds the APCF probably displayed the best performance is rather a matter of luck. Important factors of success were in place: an outstanding management team, harmonious cooperation between parties to the fund, and last but not least ADB's pragmatic approach to the fund's regulations.

The fact that the Foundation was able to suggest to almost double the quantity of certificates to be delivered to the Swiss Confederation – without requiring additional funds – was due in large part to the sharp drop in prices for certificates on the international market. At this late date, it was naturally no more possible to initiate new projects, and the Foundation had to go

to the spot market to purchase certificates that had been issued to already registered projects. One positive effect of the supply surplus was that the Foundation was able to enforce its quality criteria without problem. In order to ensure the quality of its projects, the Foundation had from the very beginning excluded the purchase of certificates stemming from carbon sink projects, HFC projects, projects aiming to avoid methane emissions in coal beds and coal mines, as well as hydroelectricity projects with a power of more than 100 MW.

Another measure of quality assurance did not play out as planned. The purchase of a large amount of certificates bearing the Gold Standard label was meant to counteract the widespread mistrust of the Kyoto Protocol's flexible mechanisms; yet there was a lack of supply because the GS label was not able to establish itself. Many project owners shied away from the expense of obtaining the label because it was often not possible to cover this additional cost with a price premium. A missing GS label can therefore not per se be taken as a sign of a project's lacking environmental integrity.

Conclusion

Achieved emission reductions

As of 31 March 2014, the Foundation can report imputable domestic emission reductions of 2 692 038 tonnes of CO₂ for the period 2008 to 2012, of which 1 201 559 take the form of Swiss emission allowances (CHU1). The Foundation's portfolio further contains 488 966 ERUs and 15 527 936 CERs.

An overview of the fulfillment of agreements with the DETEC can be found in the adjoining table.

According to the stipulations of its agreement with the DETEC dated 8 October 2013, the Foundation will sell to the Foundation for Climate Protection and Carbon Offset (KliK) the 692 038 CHU1 that are not needed to fulfil its agreements.

Revenues and expenses

The climate cent charge of 1.5 cent per litre of petrol and diesel oil was levied from 1 October 2005 to 31 August 2012. As the charge was also levied on the territory of the Principality of Liechtenstein, a total sum of 3 237 573 Swiss francs had to be reimbursed to the Principality. The collection of the charge, carried out by Carbura, generated costs of 129 292 Swiss francs. The Foundation thus netted revenues of 717 632 208 Swiss francs.

As of 31 March 2014, interest payments and securities had yielded earnings of 29.5 million Swiss francs. Foreign exchange losses amounted to 5.4 million Swiss francs, losses on securities to 4.5 million Swiss francs, and bank fees and other fees totalled 2.2 million Swiss francs. The Foundation's share in the Asia Pacific Carbon Fund's financial earnings was 0.85 million US\$.

Overview of the fulfillment of agreements with the DETEC

Activity	Tonnes of CO ₂	of which CHU1	Delivery date
Buildings Programme	212 067		
Project Funding Programmes	838 262	26 090	15.11.2013
Target Agreements Programme (motor fuels)	266 226		
Target Agreements Programme (motor fuels)	683 445	483 431	481 684 on 15.11.2013 1 747 on 1.4.2014
Total domestic reductions	2 000 000		
Kyoto certificates	15 000 000		15.11.2013
Further Kyoto certificates	1 016 902		1.4.2014

A special income of 2.07 million Swiss francs was recorded in the context of the Booster Programme (Aktion Konjunkturförderung) in payment for services funded by the Foundation and provided by the Buildings Programme's processing centre. Total revenues thus amounted to 738 447 937 Swiss francs.

The purchase of emission reductions in Switzerland and abroad generated total expenses of 678 million Swiss francs. 9.9 million Swiss francs were spent on operating the Secretariat and on communication activities. The DETEC was paid a compensation of 0.8 million Swiss francs for costs incurred in relation to the Foundation. Set against deployed resources of 689 million Swiss francs, the share of transaction costs (43 million Swiss francs) thus stands at 6.2%. With regard to emission reductions, transaction costs amount to 2.31 Swiss francs per tonne of CO₂.

After fulfilment of all contracts with the DETEC and processing of all transactions, the Foundation's residual assets amount to 49 154 685 Swiss francs. Revenues from the sale of CHU1 to the Foundation for Climate Protection

Overall revenues and expenses as of 31 March 2014

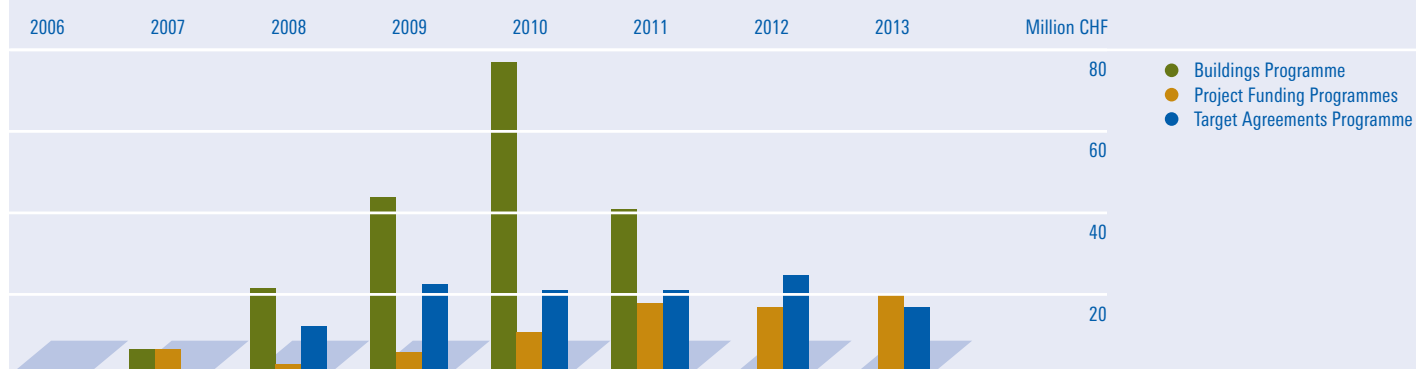
Revenues	738 447 937
Climate Cent charge	717 632 208
Interest earnings	18 001 361
Interest earnings APCF	745 405
Booster Programme	2 069 600
Expenses	689 293 252
Projects in Switzerland	434 487 305
Projects abroad	244 085 707
Secretariat	9 905 020
Flat fee to DETEC	815 220
Residual assets	49 154 685

and Carbon Offset (KliK) will amount to 53.8 million Swiss francs. A potential revenue will also accrue from the sale of the Buildings Programme's enduring impact to the KliK Foundation; its amount cannot yet be established precisely. In the context of the agreement dated 8 October 2013, the Foundation should thus have at its disposal a sum of more than 100 million Swiss francs.

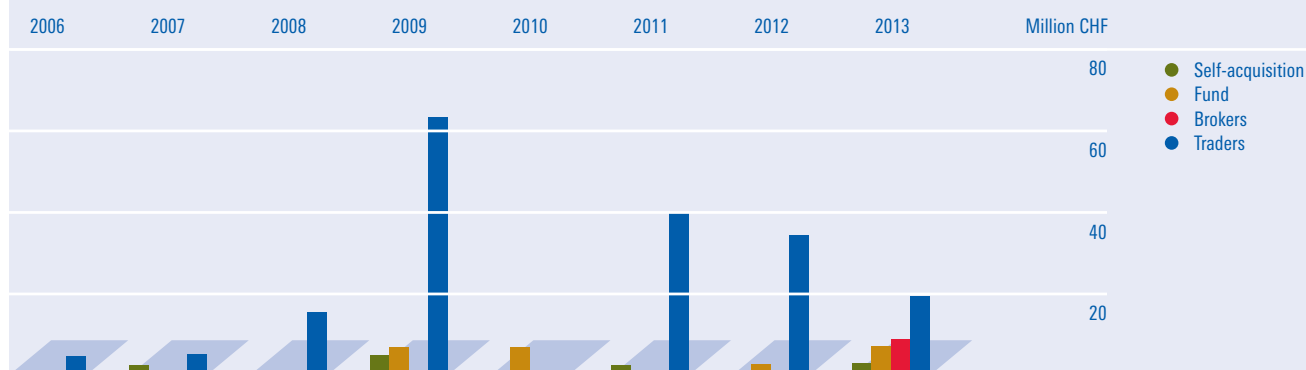
Overview of direct and indirect costs in all programmes

	Emission reductions (mio. t)	Allocation of resources (mio. CHF)	Direct expenses (mio. CHF)	Direct costs (CHF/t)	Indirect expenses (mio. CHF)	Indirect costs (CHF/t)	Share of indirect expenses (in %)
Buildings Programme	0,21	189	176	838	12	58.5	6.6
Project Funding Programmes	0,84	82	78	93	4	4.29	4.4
Target Agreements Programme	1,64	162	152	93	10	6.04	6.1
Total programmes in Switzerland	2,69	434	406	151	26	9.59	6.0
Purchasing programme abroad	16,02	244	238	15	6	0.37	2.4
Overall total	18,71	678	644	35	32	1.71	4.6

Expenses for programmes in Switzerland 2006 to 2013



Expenses for programmes abroad 2006 to 2013



Public perception

Public perception of the Climate Cent Foundation always remained largely limited to interested parties and beneficiaries, something the large-scale campaign funded in the autumn of 2008 to publicise the Foundation's contribution to achieving Switzerland's climate policy goals did little to change.

In contact with clients, it appeared that the scheme was mostly perceived to be funded and operated publicly rather than privately. Knowledge of the scheme's mode of operation was mostly inexistent, be it on the funding or on the expense side; this applies even to the scheme's supporters. Many others joined the choir of widespread doubt as to the effectiveness of climate protection projects certified by the UN.

There has been almost no public appreciation – by the media or by policy-makers – of the Foundation's contribution to the achievement of Switzerland's climate targets. At least, the criticism levied at the Foundation's meaningfulness and effectiveness in the run-up to its creation and in its first years of existence has mostly stopped, which can be taken as a sign of the soundness of its achievements.

Cooperation with federal offices

Once mutual trust had been established, cooperation with federal offices was rather smooth. On the one hand, the Foundation was able to establish in a credible manner that it wanted to make a serious contribution to climate protection and that its own standards were high as regarded the environmental integrity of projects it planned to fund. On the other hand, decision-makers within the administration often took a pragmatic approach, which allowed the Foundation to scale its activities.

Cooperation was characterised by mutual learning processes. In the knowledge that what was being undertaken was without precedent, the rules that were established were left open-ended in terms of outcome – at least to a certain extent. Instead of narrowing down the field, they provided room for development that was used – but not misused – by the Foundation. This made it possible to strike a balance between the undesired imputation of non-additional projects because of too lax rules and the equally undesired hindrance of additional projects because of too restrictive rules.

Contention was sharpest when the impact of a project funded by the Foundation had to be delimited from the impact a public subsidy may have had on a project's realisation. Here again, solutions were found in the end, making possible among other things the joint support of Eco-Drive. Though much time was devoted to addressing it, the fear that the Climate Cent would lead to a crowding out of public subsidies proved groundless.

The fact that the Foundation assessed and approved projects itself spared the administration's resources. Expenses incurred by the Swiss Confederation in the context of the agreements' implementation were charged to the Foundation. Overall, they proved much lower than initially expected.

Securing expert opinions on individual projects from federal offices sometimes took a lot of time, especially when different offices had to be coordinated. The federal administration can only be described as presenting limited suitability as a provider of such services. The value of the service was further undercut by the fact that opinions that were given were declared non-binding for a project's imputability.

Serviceability as a tool of climate policy

The Climate Cent represented uncharted territory in terms of climate policy. The scheme – and more specifically its funding mode, organised by the private sector along the lines of the "polluter pays" principle – has remained unique worldwide. Some of its elements are now also to be found in other countries, such as the outsourcing

to third parties of the procurement of certificates required to meet international commitments or the implementation of programmes to fund domestic offset projects. In some locations, players who are supposed to limit their emissions may also offset surplus emissions using domestic climate protection projects (e.g. Australia and California).

The Kyoto Protocol's flexible mechanisms have proven functional. The Foundation shared the fate of all market participants, having to deal with the market's setup phase and to muster much patience until functional processes had been established. Thanks to their careful and targeted selection, projects funded by the Foundation in developing and emerging countries had significant positive effects. Next to cost-effective greenhouse gas reductions, they also led to new and sustainable jobs, educational and health-related measures, and a transfer of innovative technologies. In these countries, projects have made and keep making a valuable contribution to local populations' quality of life and to social and economic development.

Every system that credits emission reductions faces the issue of additionality. In the meantime, various solutions have proven themselves to address this problem internationally, yet a grey area remains. Too conservative an approach in an attempt not to credit

non-additional emission reductions chokes the mechanism; too lax an approach relieves players of their obligation to carry out real emission reductions. In the case of domestic projects, the Climate Cent Coordination Group has found and maintained a reasonable balance, thanks to which the Foundation was able to trigger more domestic emission reductions than initially planned.

A critical factor for any crediting mechanism is its interplay with other tools of climate policy (this debate is conducted under the heading "E+/E-"). This issue also arose for domestic projects: to what extent do other public policy tools (federal and cantonal) influence the baseline and thus additionality? Pragmatic solutions have also been found to handle this problem.

It is worth mentioning in this context that the need to precisely assess the impact of the Foundation's activities also sharpened the administration's gaze as regards the impact of public policy tools. This has increased the robustness and transparency of the stated impact of public action in the field of energy and climate policy – something that can be viewed as a positive side effect of the Foundation's activities.

A specific aspect of the scheme's serviceability was its organisation by the private sector. Compared to similar public aid programmes, the Foundation's programmes displayed much greater flexibility as well as simple and cost-effective decision and processing mechanisms. They were launched very fast and could be brought to a close just as promptly as and when required. Adjustments to new experiences and shifting framework conditions were made speedily and in a non-bureaucratic manner.

Most tellingly for the scheme's success, for the period up to 2020 Parliament has abstained from introducing a carbon tax on motor fuels, opting instead for an offset obligation for importers of fossil motor fuels. It was the declared intention of the Foundation's founding organisations to establish a scheme that would avail itself of the internationally planned crediting mechanism and of an analogous national counterpart. The goal was to trigger efficient and effective, concrete and verified emission reductions. In contrast, a carbon tax would have had an uncertain steering effect and the loss of fuel tourism would first have weakened tax revenue and second have merely embellished Switzerland's emission balance by shifting emissions abroad.

The Foundation has met its targets. The Foundation Council is thus convinced that the Climate Cent Foundation has provided a considerable and highly efficient contribution to the success of the Swiss Confederation's climate policy.

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