Exemplary Energy and Climate

An initiative of the Confederation

Report 2013–2020

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Confederaziun svizra

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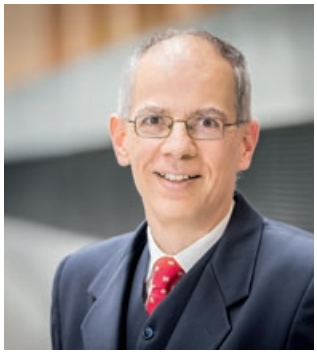
The new administration building of the Swiss Federal Office of Energy (SFOE) and the Federal Roads Office (FEDRO) at Pulverstrasse 13 in Ittingen was completed in 2020. It has been awarded the Gold certificate of the Swiss Sustainable Building Standard (SNBS).

Breaking new ground and paving the way for others

I have been supporting the Exemplary Energy and Climate initiative since its inception in 2013. Now, at the end of the first phase, I am pleased to report that the actors have reached and even exceeded their targets. Together, they had already managed to increase their energy efficiency by 25% back in 2015. The fact that this figure has risen to as much as 31.1% is extremely pleasing. At the same time, my desire to get more actors on board has also been fulfilled: Genève Aéroport, Services Industriels de Genève (SIG), Suva, RUAG MRO Holding Ltd, Zurich Airport Ltd and SRG SSR have joined the original seven participants Swiss Post, the ETH Domain, SBB, Skyguide, Swisscom, the Federal Department of Defence, Civil Protection and Sport (DDPS), and the Civil Federal Administration.

The actors have confirmed to me that the initiative, with its clear targets and measures, effective monitoring, and opportunities to share knowledge and experiences, gives them the a supportive framework for making major strides forward in the energy and climate sector. Over the past seven years, this has brought us a step closer to achieving the goals of the Energy Strategy 2050. We still have a long road ahead of us, with numerous milestones and potential stumbling blocks. But it is also a road with plenty of room for innovative solutions and approaches. As role models, we are not only following this path ourselves – we are also paving the way for others, with good examples and practical aids.

Thanks to the achievements and insights from the first phase, we can look forward to the second phase with great optimism. Much has also happened outside of the initiative in recent years. Since the adoption of the Energy Strategy 2050 and the Paris Agreement, energy efficiency and climate protection have become increasingly central topics in society. I therefore hope that other actors will join us over the coming years, and that the initiative will find even more proponents to assist us in making Switzerland a climate-friendly country.



Daniel Büchel
Vice Director of the Swiss Federal Office of Energy
Head of Energy Efficiency and Renewable Energy
SwissEnergy Programme Director

Giving a clear signal

The Federal Council intended to increase energy efficiency in the Federal Administration and parastatal enterprises by 25% between 2006 and 2020. The participating actors planned and coordinated some of their measures within the framework of the first phase of the Exemplary Energy and Climate initiative.

Ready for tomorrow's energy policy
With the first package of measures for the Energy Strategy 2050, eight years ago the Federal Council committed the Federal Government to setting a good example in the energy sector and to optimising its energy consumption. The Federal Government is responsible for 2% of total energy consumption in Switzerland.

As a result, the Federal Administration and parastatal enterprises joined forces in the Exemplary Energy and Climate initiative. A coordination group defines the binding action plan and steers the joint activities. Its office is managed by the Swiss Federal Office of Energy. Starting from the base year 2006, the actors aimed to increase energy efficiency by 25% by 2020. Since 2016, the initiative has also been open to other public-sector enterprises.

Comprehensive measures
The action plan of the Exemplary Energy and Climate initiative comprised 39 joint measures in three action areas plus a series of specific measures determined by each actor individually.

Buildings and renewable energy
Measures for energy-efficient new and converted buildings, electric power and heat from renewable energy, green power and further measures.

Mobility
Measures to encourage use of public transport, promotion of mobile-flexible forms of work, charging stations for electric vehicles and further measures.

Data centres and Green IT
Highly energy-efficient data centres, waste heat recovery, reuse of appliances and further measures.

Specific measures
Alternatively powered PostBuses, optimised railway point heating systems, continuous descent approach at Geneva Airport, fresh-air cooling in telephone exchanges, low-rolling-resistance tyres, photovoltaic installations and further measures.

Major actors
Some very different providers of publicly relevant services have committed to the Exemplary Energy and Climate initiative:

– The Confederation is represented by the Civil Federal Administration and the Federal Department of Defence, Civil Protection and Sport DDPS.

– Of the parastatal enterprises, Swiss Post, SBB, Skyguide, Suva and Swisscom have signed up. The Confederation sets these organisations strategic objectives, which in some cases also concern energy targets or require at least a sustainable corporate strategy.

– The two Federal Institutes of Technology and four research institutes are grouped together in the ETH Domain. Their purpose is specified in the ETH Act and is translated into practice by following the Federal Council's strategic objectives for the ETH Domain.

– With Genève Aéroport and the Services Industriels de Genève (SIG), two cantonal enterprises are now also participating in the initiative.

– For the second phase starting in 2021, the following actors have also joined the initiative: PostBus, PostFinance (both previously represented by the actor Swiss Post), Zurich Airport Ltd, RUAG MRO Holding Ltd and SRG SSR.

SWISS POST

ETH BOARD

GENÈVE AÉROPORT

SBB CFF FFS

SIG

skyguide

suva

swisscom

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Defence, Civil Protection and Sport DDPS

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Civil Federal Administration

Anne Wolf, Head of Corporate Responsibility

"I will always remember how our efficiency target calculation was used as the standard method for all actors – it was a great honour, and a wonderful recognition of the team's expertise!"

Swiss Post

As a mixed group, Swiss Post operates in the communications, logistics, passenger transport and financial services markets. Last year, Swiss Post carried about 1.7 billion letters and some 184.5 million parcels. PostBus transported nearly 127 million passengers, while PostFinance had more than 4.3 million customer accounts. With about 51,000 employees in Switzerland, Swiss Post is one of the largest employers in the country.

Energy strategy implementation
As the largest logistics company in Switzerland, Swiss Post operates an energy-intensive business. In order to further increase energy efficiency, it is renewing its vehicle fleet and building stock, using more alternative drive systems and optimising delivery rounds. It is also replacing fossil fuels with renewable energy sources.

www.swisspost.ch

Michael Quetting, Head of Real Estate

"By implementing innovative ideas for energy-efficient technologies from the areas of teaching and research, we have been able to increase our energy efficiency significantly."

ETH Domain

Academic achievement, research and innovation at the highest level: this is what the ETH Domain provides with 16,000 staff members, over 35,000 students and doctoral students and a faculty of about 890 people. The ETH Domain consists of the two Swiss Federal Institutes of Technology in Zurich (ETH Zurich) and Lausanne (EPFL), the four research institutes Paul Scherrer Institute (PSI), the Swiss Federal Institute for Forest, Snow and Landscape Research (WSL), the Swiss Federal Laboratories for Materials Science and Technology (Empa) and the Swiss Federal Institute of Aquatic Science and Technology (Eawag). The ETH Board is the strategic management and supervisory body of the ETH Domain.

Energy strategy implementation
The common environmental model of the ETH Domain has been coordinated with the targets of the Federal Government's Energy Strategy 2050. The ETH Domain's institutions support the common objectives on their own responsibility and with their own environmental management systems.

www.ethboard.ch

Pierre-Yves Diserens, Head of Development and Energy

"Despite difficult navigation conditions, the 'aircraft carrier' Genève Aéroport increased its solar production significantly in 2020."

Genève Aéroport

The year 2020 was heavily impacted by the coronavirus pandemic. Genève Aéroport posted a loss for the first time in its history, amounting to a massive CHF 129.5 million. To put this in perspective, it had posted a profit of CHF 84.1 million in 2019. The biggest crisis since World War II hit the airline industry hard. In 2020, passenger numbers fell by 68.8%, while the number of flights was down 53.6%. Freight activity shrank by 37.7% compared to 2019.

Energy strategy implementation
The goals of the airport's energy strategy are based on three pillars: reducing energy consumption in airport operations, producing and distributing energy as efficiently as possible, and prioritising the use of renewable energies. In 2020, the savings across the entire airport site amounted to around 6.1 GWh, which corresponds to the annual consumption of approximately 2,600 Swiss households.

www.gva.ch

Christina Meier, Head of Sustainability

"Sharing knowledge and experience with the other actors and the EEC office has been extremely valuable. I look forward to continuing our work with them!"

SBB

With about 33,500 employees, SBB moves people and goods, connects centres and opens up different parts of the country. A rail journey in Switzerland is about 6 times more energy-efficient and emits 27 times less CO_2 than a journey by car over a comparable distance. With its sustainable mobility offering, SBB thus contributes significantly to the implementation of the Federal Government's Energy Strategy 2050.

Energy strategy implementation
From 2025, SBB wants to run its trains completely on electricity from renewable sources. Ninety percent of the electricity it uses already comes from hydro power. With a comprehensive package of measures, it intends to save 850 GWh of energy per year by 2030. To reduce its CO_2 emissions, SBB sets itself science-based targets and is aiming to be climate-neutral from 2030.

www.sbb.ch

Alexandre Bagnoud, Environmental Engineer

"With the development of a heating network in Geneva, SIG is creating important infrastructure for reducing CO_2 emissions and counteracting global warming."

Stefan Meyer, Head of Corporate Real Estate Management & Infrastructure

"By making air traffic management more efficient, we are reducing CO_2 emissions and energy consumption in the aviation industry."

SIG

SIG is a Geneva-based company that provides supply and disposal services. It is owned by the municipalities, the City and the Canton of Geneva. It serves 234,000 customers throughout the Canton of Geneva and provides water, gas, electricity and thermal energy. It treats waste water, recovers waste and offers services in the areas of energy and telecommunications. SIG employs 1700 people.

Energy strategy implementation
In 2020, SIG occupied second place in the Swiss Federal Office of Energy's (SFOE) ranking of energy providers. The ranking rates the environmental quality of the products and services of energy providers, as well as their commitment to the Energy Strategy 2050. SIG had already come out on top in the ranking on three occasions. In 2020, the Canton of Geneva presented its Energy Master Plan (PDE). As an industry partner of the Canton of Geneva, SIG is concerned with implementing the cantonal energy policy.

www.sig-ge.ch

Skyguide

Skyguide provides air navigation services in Switzerland and the neighbouring countries with 1500 employees in 14 locations. Every year, it guides approximately 1.3 million civil and military aircraft safely and efficiently through Europe's busiest airspace. Skyguide is part of a strong international network and works closely with the Swiss Air Force and other aviation customers and partners.

Energy strategy implementation
Skyguide gives high priority to resource-efficient air traffic management. The company is committed to reducing emissions from air traffic and its own energy consumption through operational improvements. Skyguide invests in efficiency measures on the ground and in improved traffic management in the air while maintaining or even improving safety standards.

www.skyguide.ch

Christian Marfurt, Head of Sustainability

"The initiative has directed more attention towards the topics of energy efficiency and renewable energy at Suva. They are now mandatory requirements both internally and externally."

Suva

Suva is more than just insurance: it combines prevention, insurance and rehabilitation under one roof. Suva offers these services to insured companies and their employees on a holistic and integrated basis: from prevention of accidents and occupational diseases through occupational claims management to rehabilitation and reintegration. The company employs more than 4000 people and, apart from the head office, operates 18 agencies located in all parts of the country, as well as two rehabilitation clinics in Bellikon and Sion. Suva is self-supporting and does not receive any public funding. It passes on its profits to policyholders in the form of lower premiums.

Energy strategy implementation
Suva intends to reduce its greenhouse gas emissions as a contribution to Switzerland's climate targets. For the period 2020 to 2030, it has concluded a universal target agreement with the Federal Government, with which it will reduce energy consumption by almost 30%.

www.suva.ch

Saskia Günther, Head of Corporate Responsibility

"The cooperation in the first phase of the initiative laid solid foundations for being able to serve as a role model for Switzerland in the areas of energy efficiency and climate protection."

Swisscom

With 6.22 million mobile phone customers, 1.55 million television subscribers and 2.5 million broadband connections for private and business customers, Swisscom is the leading telecommunications company and one of the leading IT companies in Switzerland. In addition, Swisscom builds and maintains mobile phone and landline infrastructure, broadcasts radio signals, builds and operates data centres, and operates in the banking, energy, entertainment, advertising and health sectors. In 2020, Swisscom generated sales of CHF 11 billion with 19,000 employees.

Energy strategy implementation
Swisscom is one of the most sustainable companies in Switzerland and meets 100% of its electricity requirements from renewable energy. By 2025, CO_2 savings by customers should exceed Swisscom's own emissions by 500,000 tonnes.

www.swisscom.ch

Andrea Riedel, Team and Project Leader Space and Environment, General Secretariat

"The DDPS has significantly stepped up its own production of renewable energy and is pushing ahead with replacing oil-fired heating systems with non-fossil-fuel heat generators."

DDPS

The DDPS is divided into seven administrative units: Defence, General Secretariat, Civil Protection, Sport, armasuisse, the Federal Intelligence Service and swisstopo. The department's core activities are the security and protection of the Swiss population, the protection against disasters and emergencies, as well as physical activity through sports promotion. In 2020, the DDPS had 34,549 full-time-equivalent employees, while the Armed Forces performed 4,991,440 days of service.

Energy strategy implementation
In 2004, the DDPS adopted an energy concept for the department. It realigned its efforts to reduce energy costs and CO_2 emissions over the coming decade in the DDPS 2020 Energy Concept. This is now being replaced by the DDPS Energy and Climate Action Plan with a time horizon until 2030. To improve its environmental performance, the DDPS operates a modern and resource-efficient environmental and energy-management system.

www.ddps.admin.ch

Carmen Maybud, Head of Energy and Climate Confederation

"The Federal Administration wants to be a role model in the areas of energy and climate. To this end, it sets itself ambitious targets, which it also achieved in the first phase of the initiative."

Civil Federal Administration

The Civil Federal Administration, with its 25,700 full-time employees, assists the Federal Council and parliament in its work. It maintains relations between states, creates good general conditions for society and the economy, provides infrastructure and ensures the security of the state and citizens.

Energy strategy implementation
In 2020, the Civil Federal Administration was able to exceed its targets set in 2006 and reduce its environmental impact by more than a third. In its Resources and Environmental Management programme RUMBA, the Civil Federal Administration has now laid down the guidelines for further progress and the 2020-2023 Strategy, while continuing to set itself ambitious goals.

www.admin.ch

Course set for 2030

This report marks the end of the first phase of Exemplary Energy and Climate. The initiative is being continued until 2030. Like the last one, this new phase is also aligned with the Energy Strategy 2050. However, in addition to increasing energy efficiency, there is now a stronger focus on climate protection. This is also reflected in the new name given to the initiative in 2019: Exemplary Energy and Climate.

The target system of the initiative was expanded for the second phase and now consists of five metrics: energy efficiency, share of renewable energies, green power production, fifteen joint measures from the three areas of management, procurement and operation, as well as specific measures tailored to the different actors. With regard to energy efficiency, green power production and share of renewable energies excluding electricity, the actors have agreed individual targets, while the share of electricity procured from renewable sources is to be 100% for all of them. A four-tier system will be used to evaluate the joint measures. It will ensure that the actors together make the expected contribution to implementing the Energy Strategy 2050. At the same time, it takes into account the different situations of the actors.

In the coming decade, the initiative will not only continue to set targets, but will also support the achievement of targets by providing expertise, tools and opportunities to share knowledge and experiences. The Exemplary Energy and Climate Coordination Group, which will include one representative of each of the actors, will coordinate the activities and receive operational support from the office.

The transition to the new phase is the perfect time for further organisations or companies to come on board. PostBus and PostFinance have become independent actors alongside Swiss Post. Zurich Airport Ltd, RUAG MRO Holding Ltd and SRG SSR have joined as new actors.

Have we aroused your interest, too? Future challenges in the energy and climate sector are best overcome together. As part of the Exemplary Energy and Climate initiative, you will lead by example and play a pioneering role in implementing the Energy Strategy 2050. At the same time, you will benefit from tried-and-tested tools for implementing your own measures, as well as from the opportunity to share knowledge and experiences with other actors. For further information, please contact:

Stefanie Bertschi
Head of the Office Exemplary Energy and Climate
Swiss Federal Office of Energy (SFOE)

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stefanie.bertschi@bfe.admin.ch

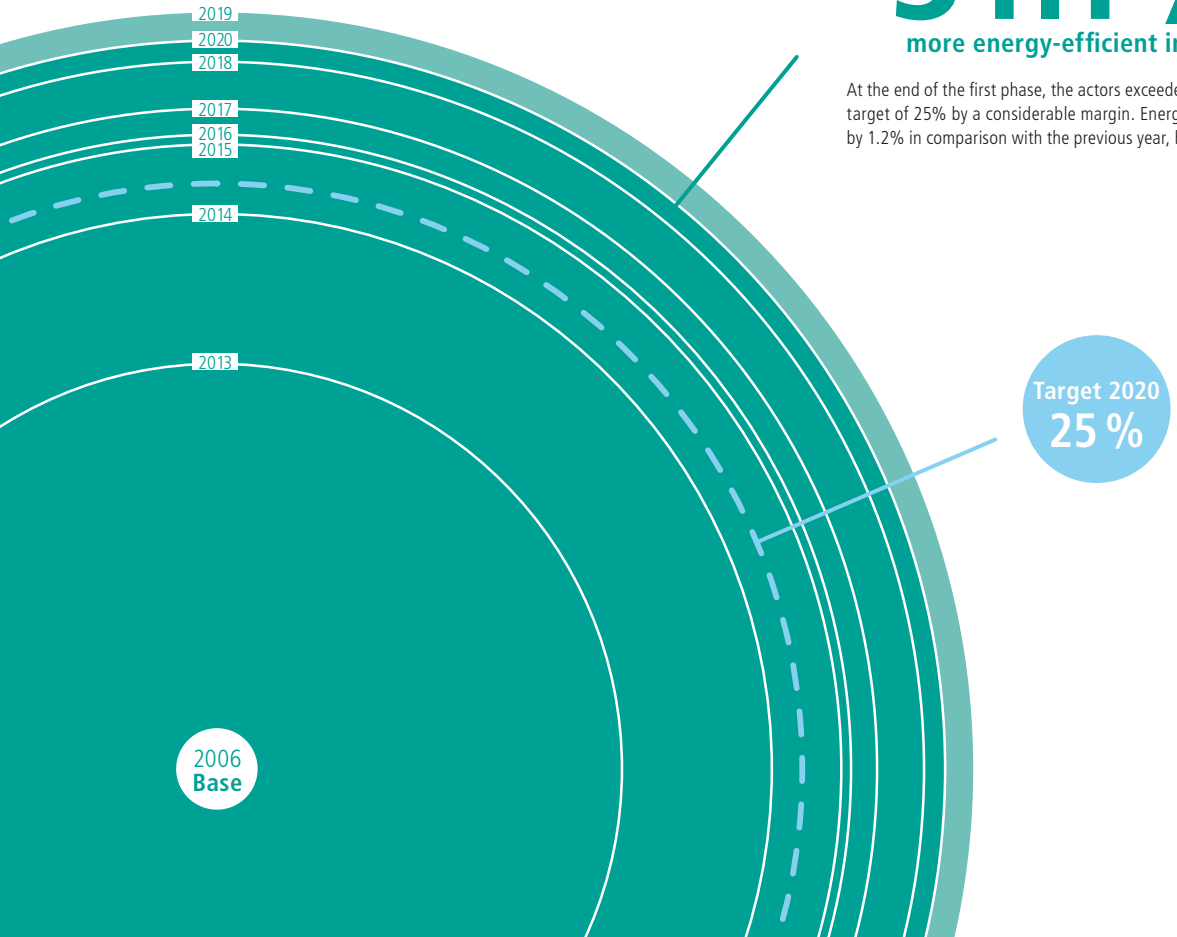
Joint targets clearly exceeded

The Exemplary in energy initiative was launched in 2013 with seven actors, with the aim of reducing the energy consumption of the Federal Government and parastatal companies, and making them more energy-efficient. Seven years, three more actors and a new name later, the first phase has now been concluded successfully. The target of increasing their energy efficiency by 25% by 2020 (compared to 2006) has long since been achieved and exceeded by the actors.

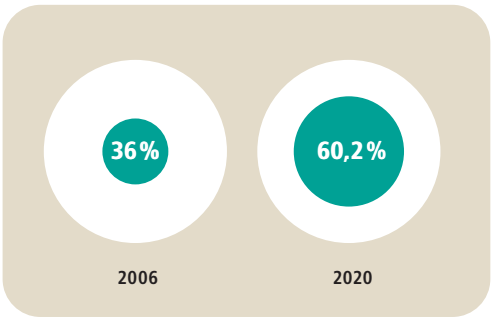
The Exemplary Energy and Climate initiative can look back on seven successful years. The ten actors have made a relevant contribution to achieving the goals of the Energy Strategy 2050 and served as role models for other institutions and companies. The initiative was well received, and three more actors joined during the first phase. A lot has also happened outside of the initiative during this period: now more than ever, it is no longer just a case of using energy more consciously, but also about which energy sources to choose in order to protect the climate. The initiative was therefore renamed "Exemplary Energy and Climate". The first phase of the initiative was concluded in 2020.

Impressive progress

The actors had already achieved the main energy efficiency target of 25% back in 2015. Nevertheless, they continued their commitment to the cause and implemented further measures. The results are impressive. Compared with the base year of 2006, they increased energy efficiency by 31.1% on average by the end of 2020, clearly exceeding the agreed target. Alongside this, the actors ensured that their energy consumption mostly came from renewable sources. In 2020, this was the case for 60.2% of the energy consumed. Almost all electricity was procured from renewable sources.



Renewable energy

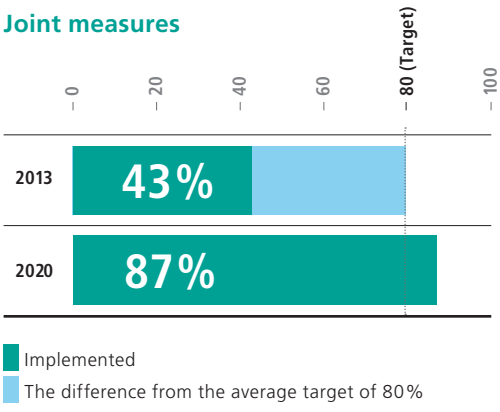


At 60.2%, the average share of renewable energies in total consumption remained at a similar level to the previous year.

Comprehensive mix of measures

Thirty-nine joint measures from the action areas "Buildings and renewable energy", "Mobility" and "Data centres and Green IT" contributed towards these results. The actors implemented these measures at a rate of 87% on average, thus exceeding the joint target of 80% by a considerable margin. They benefited from sharing knowledge and experiences within the initiative and developed practical tools for implementing the measures (see box on the right). So that the actors could fully exploit the potential in their respective sectors, they implemented 117 entity-specific measures alongside the 39 common measures.

Joint measures



By the end of 2020, the actors had achieved an average attainment rate of 87% for the 39 joint measures. They had therefore met the target.

Achieving more together

The Exemplary Energy and Climate initiative is a good example of how the whole is often greater than the sum of its parts, as it went beyond being a mere seedbed for energy and climate measures. Instead, it offered a motivating framework that created commitment and clarity, as well as providing the opportunity to join forces and leverage synergies to tackle complex climate and energy challenges.

Regular knowledge-sharing sessions and working-group meetings offered a protected environment in which to discuss various measures openly and on an equal footing without any competition: what difficulties and challenges might be encountered? What are the possible solutions? And against which benchmarks will the measures be assessed? The knowledge and expertise shared in this way undoubtedly made a major contribution to the success of the initiative. This professional interaction gave rise to a collection of free tools:

– Applications such as the LCC tools for calculating the life cycle cost of ICT equipment, building technology and passenger vehicles

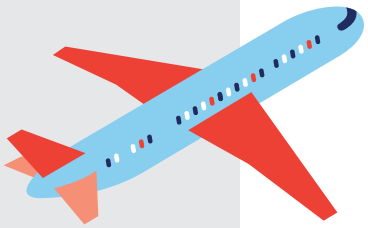
– Best practices with recommendations and fact sheets, such as for the certification of Europaallee in Zurich according to the standard of the German Sustainable Building Council (DGNB)

– Guidelines and recommendations such as the Federal Administration's guidelines on energy options for ICT equipment

At the same time, the initiative generated more awareness of the Energy Strategy 2050 and its implementation through the media and events. It thereby also encouraged key actors to take action and helped to ensure that the topics of energy efficiency and renewable energy continue to gain acceptance and grow in importance. The initiative has thus helped to ensure that climate protection solutions gradually become a matter of course in everyday society.

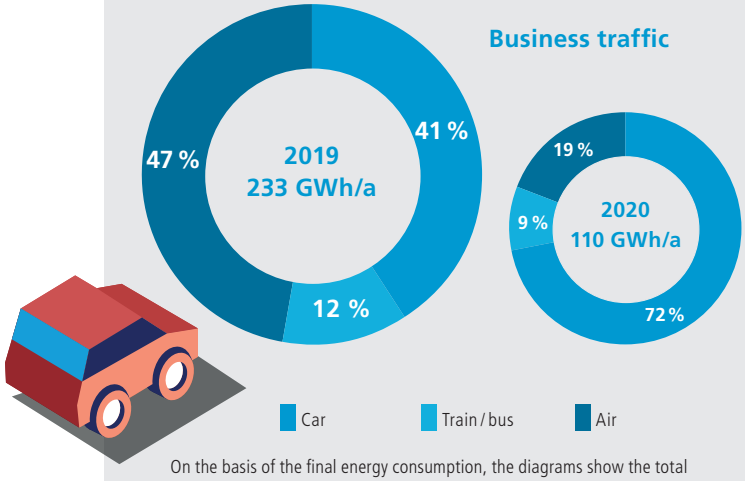
Achieving more together – this will also be the motto of the second phase of the initiative. The targets of the Energy Strategy 2050 have not yet been reached. It is therefore essential to pool and share knowledge, experiences and skills so that Switzerland can become climate-friendly in the near future.

Covid-19
A massive impact on key figures



The year 2020 was not only special because it marked the completion of the first phase. Due to the COVID-19 pandemic, physical and social contact was heavily restricted for several months. Working from home, video conferencing and digital events replaced commuting, business travel and in-person meetings. Public transport was limited and shops were closed for long periods. The COVID-19 pandemic and the lockdown had a major impact on the initiative's activities and metrics: The energy consumption of many actors fell.

The data for the final year of the first phase of Exemplary Energy and Climate is therefore distorted and can only be compared with previous years to a limited extent. This can be seen particularly clearly in the energy consumption of business traffic, which was severely limited by the lockdown, remote working, the temporary closure of borders and the strict quarantine rules.



On the basis of the final energy consumption, the diagrams show the total energy consumption for business traffic across all actors and the average distribution by means of transport. The transportation of customers is not counted as business traffic. DDPS data is not included.

It will become apparent in the near future whether the old working models and mobility patterns will return completely after the pandemic is over, or whether new habits such as working from home and virtual meetings will be partially retained. The latter would certainly be beneficial to the climate, and would give rise to corresponding opportunities.

The actors realised

> 70

new buildings

according to an exemplary standard during the first phase of the initiative.

Buildings and renewable energy

Diverse solutions for real estate

Twelve joint measures from the action area "Buildings and renewable energy" contributed towards achieving the targets. In Switzerland, buildings are responsible for around 38% of all final energy consumption. Through exemplary new buildings, modernisation measures, energy-optimised operations, and conscious use or in-house generation of electricity from renewable sources, the actors were able to improve their carbon footprint considerably.

The diversity of their buildings presented the actors with special challenges, but also opened up new opportunities. It was not only conventional office spaces but also aircraft hangars, data centres and underground facilities that were modernised in terms of energy usage. This called for solutions tailored to the purpose of the buildings and the needs of their users, especially with regard to renewable energies. For example, the hangar at the Alpnach military airbase offers ample space for photovoltaic systems, while SIG's GeniLac project uses water from Lake Geneva for cooling and heating in residential and office buildings. SBB uses the same method to heat the train station in Zug (see page 39). To help make properties even more climate friendly in the future, the Swiss Federal Laboratories for Materials Science and Technology (Empa) and the Swiss Federal Institute of Aquatic Science and Technology (Eawag) are jointly researching construction materials in the NEST modular building.

Energy-efficient new buildings and conversions

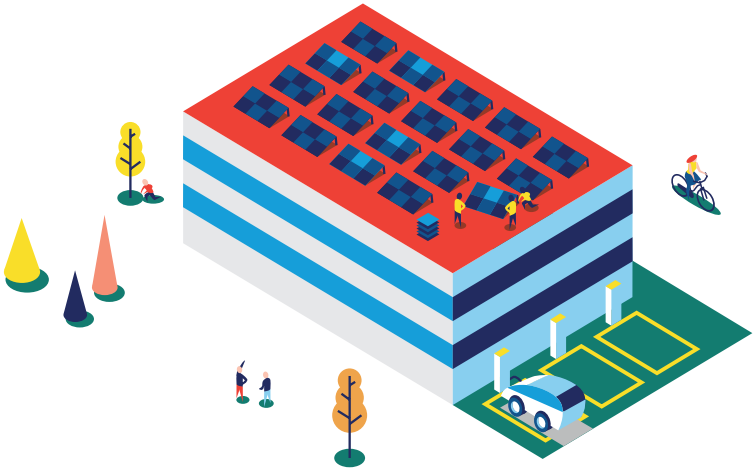
When modernising existing buildings and constructing new ones, the actors continue to pay particular attention to increasing energy efficiency. Certifications for standards prove the effectiveness of these construction measures: numerous buildings of Swiss Post, the ETH Domain, SBB, the DDPS and the Civil Federal Administration meet the Minergie standard or the Swiss Sustainable Building standard (SNBS). The army sports hall at the Thun military training centre is even Minergie-P ECO-certified (see page 59). The Civil Federal Administration plans and constructs its buildings based on the Sustainable Real Estate Management Recommendations of the Coordination Conference for Public Sector Construction and Property Services (KBOB) and the principles of the SNBS. However, it is

The actors installed

> 120

renewable heating systems

in 2020 alone.



not just new buildings that can be certified: the laboratory and administration building of the Swiss Federal Institute for Forest, Snow and Landscape Research (WSL) in Birmensdorf achieved dual certification according to Minergie-P-ECO and Minergie-A-ECO with new, well-insulated façade elements, new windows and a solar roof (see page 30).

Greater efficiency through building improvements

In addition to carrying out modernisations, energy efficiency can also be improved by optimising energy consumption in the running of a building. Numerous actors now improve building technology on a continuous basis and are constantly taking measures to improve energy efficiency. Even relatively small investments can make a big difference: Suva has systematically replaced the lighting at City Parking Lucerne and at the head office in Fluhmatt (see page 50). This reduces annual energy consumption by 65%. Thanks to optimisation processes and new technologies for the research infrastructure, 7.5 GWh of electricity can be saved annually at the Paul Scherrer Institute (PSI) (see page 31).

In-house electricity production

The actors have made a commitment to procuring electricity from renewable sources, or even certified green electricity. At the same time, they produce their own electricity from renewable sources. A photovoltaic system has been installed on the roof of the DDPS army sports hall in Payerne (see page 58), and Swiss Post now has 22 photovoltaic systems throughout Switzerland (see page 26). Some of the actors have also leveraged synergies by working together to produce electricity. For example, Genève Aéroport commissioned a photovoltaic system together with SIG (see page 35).

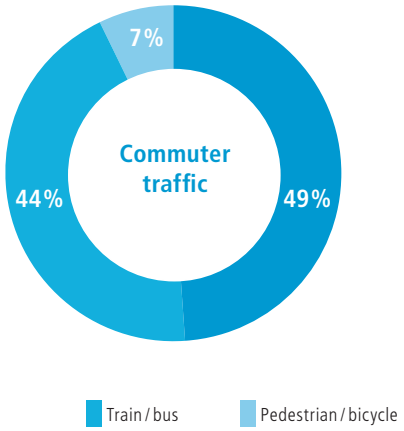
Heating and cooling in buildings

To reduce the burden on the climate, modern solutions were used for cooling and heating. For example, Suva has equipped the D4 Business Village (a business centre for around 2,000 employees) with one of the largest geothermal seasonal thermal storage systems in Switzerland. It heats water using geothermal energy in a closed loop. The ETH Domain also relies on geothermal energy: the Watt d'Or prize-winning Anergy Grid supplies the Hönggerberg campus with heating and cooling (see page 28).

Mobility

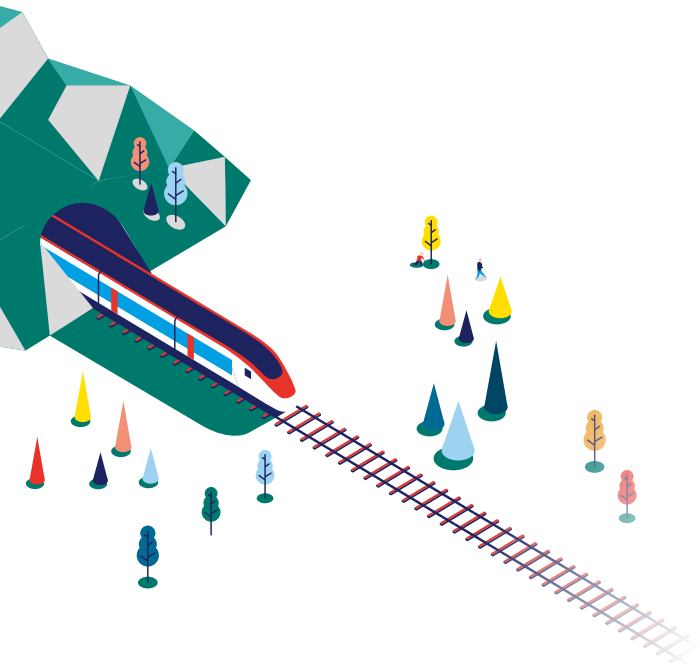
Climate-friendly travel and commuting

In the "Mobility" action area, stakeholders improved their carbon footprint for commuter and business traffic. The aim was to create the necessary conditions for enabling employees to travel in a climate-friendly way. Among other measures, new charging points for electric cars were installed, e-bikes were made available at numerous locations, and travel cards for public transport were subsidised. In a pilot project, DETEC and the actor DDPS are providing e-bikes for business travel (see page 60).



The diagram shows the average percentage share per transport type for commuter traffic and all users, with data taken in various years. DDPS and the ETH Domain data are not included.

Since the start of the initiative, SIG has halved the CO_2 emissions of its own vehicle fleet (see page 43). Climate-friendly mobility is also being made possible at Geneva Airport at unusual times: with the bus service organised in collaboration with Transports Publics Genevois, travellers and employees can even get to the airport before 6 a.m. free of charge and in an environmentally friendly way. Various actors also ran training courses and campaigns for their employees. For example, in addition to targeted eco-drive training, the Rumba Move Challenge was used by the Civil Federal Administration to raise awareness of climate-friendly mobility in the work routine.

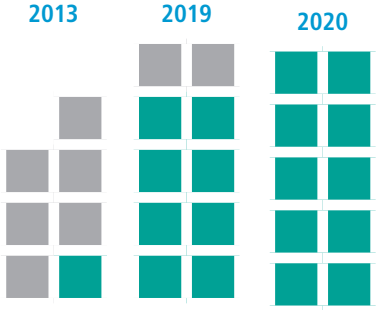


989
charging points for electric cars
are located at the various sites.

Flexible working

Mobile and flexible working solutions are of key importance as they create the flexibility for enabling employees to make their work-related travel more climate-friendly. Swiss Post has shortened the commute for employees significantly by promoting work hubs at various Swiss locations. SBB relieved the burden on public transport during peak times by creating flexible working models for tasks that can be performed remotely at any time. The actors are on the right track with their solutions. They had already made flexible and remote working possible for their employees before the COVID-19 crisis and were thus ideally prepared for the workplace changes brought about by the crisis.

Flexible working



The diagram shows the number of actors at which at least a third of employees with a suitable job profile regularly used mobile and flexible working solutions in 2013, 2019 and 2020.

Data centres and Green IT

Preparing servers for the future

By using waste heat, the actors were able to significantly improve the energy efficiency of their servers and data centres. The DDPS, for example, took a systematic approach to converting over 70% of the consumed energy directly into computing power and using the waste heat: the DC CAMPUS of the Federal Administration was built at a location where the waste heat can be used to heat an army barracks. Furthermore, the cooling systems for the data centre's servers also function as heat pumps, and part of the electricity comes from photovoltaic systems. Swisscom's data centre produces so much waste heat that it can be used to heat a new Civil Federal Administration building in the vicinity. The cooling is climate-friendly and uses rainwater. However, water can be used for more than just cooling servers: from the cooling water for ETH's CSCS data centre, which comes from Lake Lugano, microturbines generate around 217 MWh of electricity per year.

Energy-efficient virtualisation

Power consumption can also be significantly reduced by means of central data centres and virtualisation. The air traffic forecasting systems of the two locations in Geneva and Dübendorf are merged virtually at the data centre of Skyguide (see page 44). This innovative approach even earned an award from the European Commission. The benefits can also be seen at Swisscom: by sharing servers, the company saved 17.9 GWh of electricity in 2016 alone. In addition to virtualisation, the initiative also supported the procurement of energy-efficient IT devices with the joint measures and an LCC tool. A new printing system at FOBL, for example, reduces power consumption by 60%.

Breathing new life into electronics

Acquiring new equipment poses the question, what to do with devices that are no longer needed. This is particularly true of IT equipment, which is often still functional when it is replaced. The initiative's actors promote the reuse of such devices by offering them to employees and non-profit organisations or selling them on the open market. Swisscom goes one step further: customers can also resell their mobile devices (see page 54). In this area in particular, it can be clearly seen how energy-efficiency improvements and climate-protection measures are being taken at all levels – from data centres with powerful computers, through to recycled

A total of

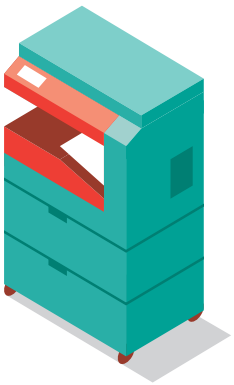
14,122 MWh

of waste heat

from Swisscom, Skyguide and Civil Federal Administration data centres were used externally in 2020.

mobile phones. By reusing or recycling equipment, such measures also close materials cycles, which further contributes towards preserving resources and protecting the environment.

Paper consumption



The diagram shows the annual paper consumption per employee in kilograms.

Specific measures

Tailored solutions

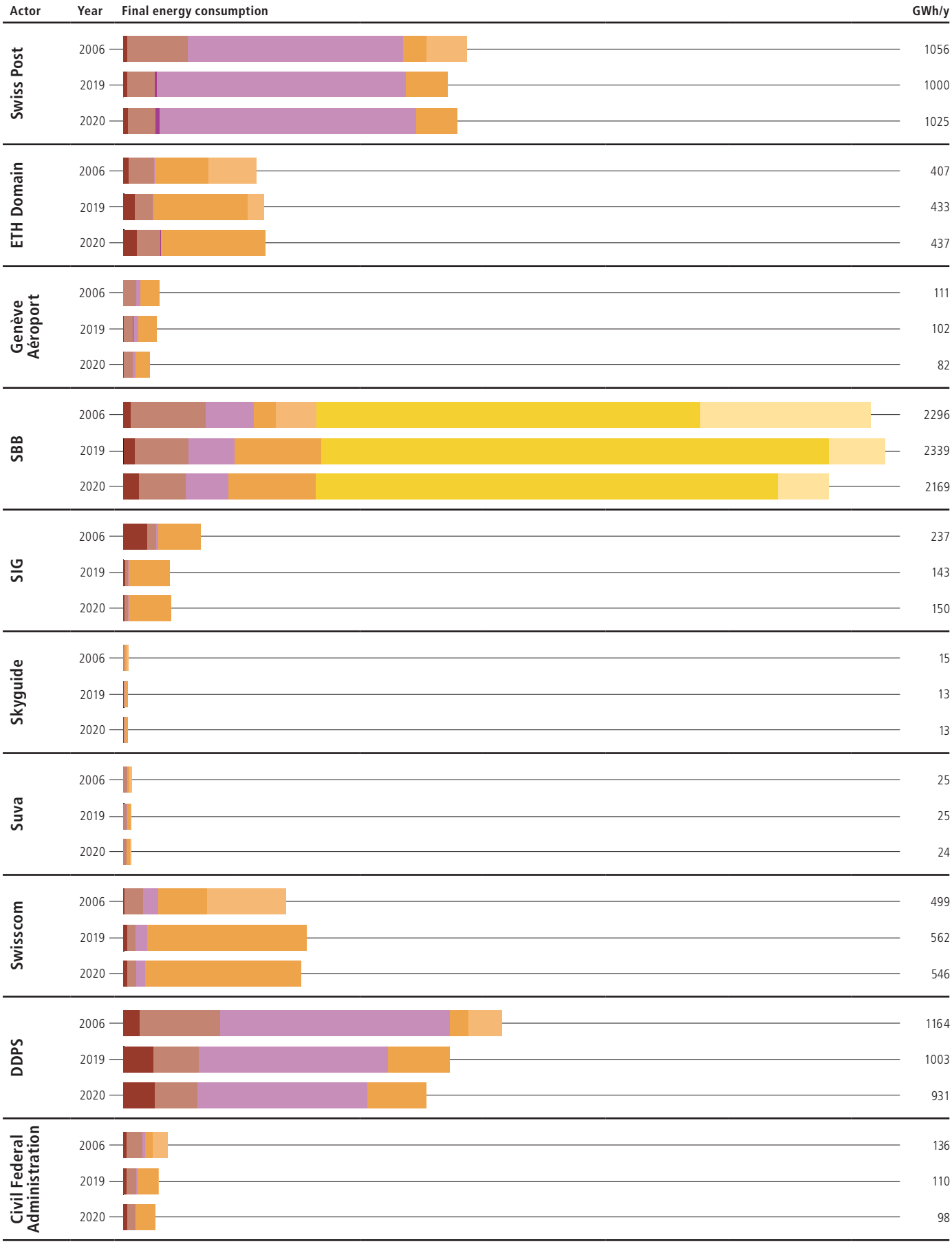
Since the beginning, the initiative has not only covered common measures with targets for all actors, but also specific measures with individual targets. The initiative's ten actors were thereby able to seize opportunities for action in their specific areas. Skyguide has reduced kerosene consumption with 63 direct and optimised flight routes to date (see page 47). Swiss Post is focusing on electric vehicles (see page 24). It has so far replaced 6,000 petrol-powered scooters with electric ones. Still a novelty at the start of the review period, they have since become a common sight in Switzerland. As part of the initiative, SBB has also consistently modernised its wagons and locomotives in terms of energy consumption. Further savings amounting to 62 GWh per year have also been achieved with apps for train drivers and speed optimisation measures (see page 36). Suva is using a lorry powered with biogas (see page 51). This saves around seven tonnes of CO_2 per year.

Awareness-raising among employees

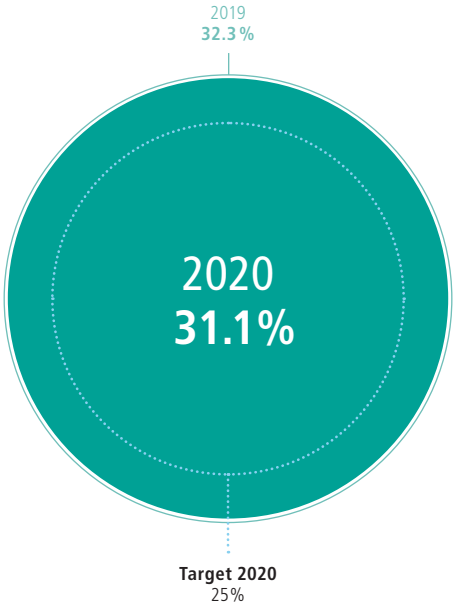
All of these measures can only be successful if corresponding awareness is generated among employees. The DDPS trains an environmental support officer in each troop (see page 59), and Suva trains its agencies and departments (see page 51). The Swiss Climate Challenge app, co-developed by Swisscom, raises awareness of climate-friendly mobility among the entire population, not just employees (see page 55).

Building on these experiences, the actors will remain committed to the initiative in the future and will contribute to implementing the Climate and Energy Strategy 2050 with a wealth of exciting and pioneering measures.

Final energy consumption and energy efficiency



Increase in energy efficiency attained (base 2006)	Reference variable(s)
2019 34.1% 2020 **29.2%**	Depends on the corporate unit: number of consignments, customer business, passenger kilometres, transactions, total useful floor area, full-time equivalents (FTE)
2019 31,4% 2020 **32%**	Based on full-time equivalents (FTE), total useful floor area, days instruments deployed, patient treatments (PSI)
2019 26,4% 2020 **14.5%**	Depends on the number of user units (passengers and cargo), total useful floor area
2019 23.3% 2020 **-6.3%**	Efficiency indicator 1: -6.3% based on operating output in passenger and net tonne kilometres and traction energy consumption (final energy) Efficiency indicator 2: 31.5% calculation as for 1, but based on primary energy
2019 19.5% 2020 **16.8%**	Depends on the corporate unit: cubic metres of drinking water supplied, cubic metres of waste water treated, tonnes of waste processed, full-time equivalents (FTE)
2019 40.5% 2020 **52.4%**	Depends on the corporate unit: full-time equivalents (FTE), total useful floor area, number of flights
2019 24.3% 2020 **28.9%**	Full-time equivalents (FTE) for headquarters and agencies as well as care days for the two clinics.
2019 57.1% 2020 **68.9%**	Efficiency calculation based on energy efficiency measures implemented (Energy Agency of the Swiss Private Sector [EnAW] methodology)
2019 -4.2% 2020 **7.6%**	Staff level in full-time equivalents (FTE); work days are converted into FTE
2019 70.4% 2020 **67.4%**	Full-time equivalents (FTE)



Efficiency target exceeded

With an average increase in energy efficiency of 31.1%, the actors as a whole are above the target of 25%, which was to be achieved by 2020. Even if absolute energy consumption increases, an actor may have increased efficiency if its organisation has grown.

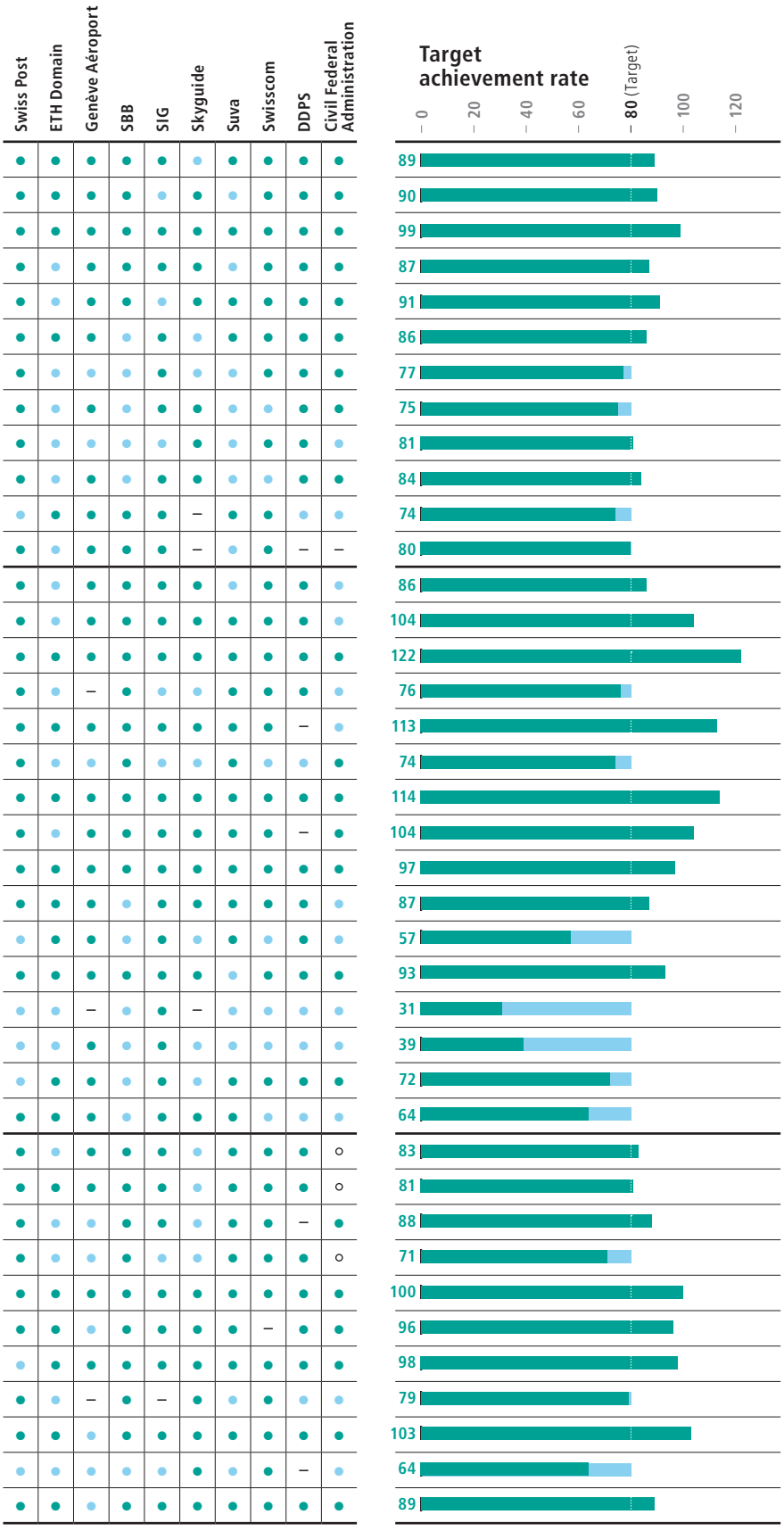
Calculation methodology

Energy consumption and energy efficiency are calculated by each actor for its own buildings, infrastructure and vehicles in Switzerland. But the precise system limits vary from actor to actor. The actors also define individually the calculation methods and reference variables so that they can base these on their existing environmental reporting. Further information is available at www.exemplary-energy-climate.ch.

Achieved increase in energy efficiency
Planned increase in energy efficiency

Average degree to which joint measures have been implemented

Area of action	No.	Measure	Performance target
Buildings and renewable energy	01	Energy-efficient new and converted buildings	100% from 01/01/2016
	02	Analyses of potential of waste heat and renewable energy	Analyses of potential available
	03	No new fossil-fuel powered heating systems	100% from 2016
	04	Full cost accounting of energy efficiency	1–2 case studies available from 01/01/2017
	05	Energy-efficient lighting	100% from 01/01/2016
	06	Energy-efficient cooling machines	100% from 01/01/2016
	07	Energy-efficient sanitation facilities	100% from 01/01/2016
	08	Energy-efficient electromotors	100% from 01/01/2016
	09	Building technology with operating optimisation regime	60% by 2020
	10	Procurement of green power and power from renewable energy sources	20% and 80% respectively by 2020
	11	Mobility concepts for buildings	100% from 01/01/2016
	12	Creation of ecofunds	100% by 2020
Mobility	13	Integration of mobility management	100% by 2020
	14	Central information and booking platform	80% of employees
	15	Encouragement of mobile-flexible forms of work	30% of employees with an appropriate job profile
	16	Promoting work hubs	100% of sites by 2020
	17	Promotion of video and web conferencing	30%/70% of employees
	18	Incentives for using public transport	See detailed description on page 66
	19	Providing or co-financing PT season tickets	Half-fare card or contribution to PT season ticket
	20	Criteria for choosing mode of transport	Air travel less than 20% for short distances by 2020
	21	Active parking space management	100% of parking spaces
	22	Provision of bicycle parking spaces	100% of sites equipped to cope with demand
	23	Provision of bicycles and e-bikes	100% of sites with over 100 employees
	24	Criteria for procuring energy-efficient vehicles	100% of newly-procured cars by 2020
	25	Eco-driving training courses for frequent car users	100% of employees
	26	Promoting the use of car sharing agencies	80% of employees
	27	Joint use of a company carpool	See detailed description on page 67
	28	Provision of charging stations for electric vehicles	100% of sites with over 500 employees
Data centres and Green IT	29	Full cost accounting of energy efficiency in procurement	100% of appliances in new calls for tender
	30	Specifications for new servers and new data centre hardware	100% of new calls for tender
	31	Highly energy-efficient data centres	See detailed description on page 68
	32	Pushing passive cooling solutions in data centres	See detailed description on page 68
	33	Encouraging server virtualisation in data centres	Over 85% by 2020
	34	Bundling of data centres / outsourcing of IT services	100% checked by end of 2015
	35	Monitoring and evaluation of new technologies	At least one evaluation per year
	36	Promotion of waste heat recovery	50% by 2030 (data centres > 250 sq. m.)
	37	Promotion of economy mode at computer workstations	Over 90% by 2015
	38	Promotion of energy-efficient printing solutions	See detailed description on page 68
	39	Promoting re-use of appliances	100% by 2015



Average target achievement rate
for all joint measures

87 %

Great differences in the implementation of mobility measures

By the end of 2020, the actors had attained an average attainment rate of 87% for all joint measures. The achievement of objectives varies most in the action area mobility.

- ● Implemented
- ● In implementation phase
- ○ Selected, no data yet
- – No leeway for action

Swiss Post

Swiss Post's final energy requirement in 2020 was 1025 GWh. It decreased by 2.9% compared with the base year 2006, despite strong business growth, while energy efficiency was increased by 29.2%. Since 2020, all vehicles at the delivery point in Amriswil have been fully electric. What's more, at the logistics hubs (e.g. in Zurich-Enge), all mail is now distributed using electric vehicles. The aim is for all parcels in Zurich to reach the customer with zero CO_2 emissions by 2025. Swiss Post procures 100% of its electricity from renewable energy sources in Switzerland. Twenty percent of this is green electricity carrying the naturemade star quality label.

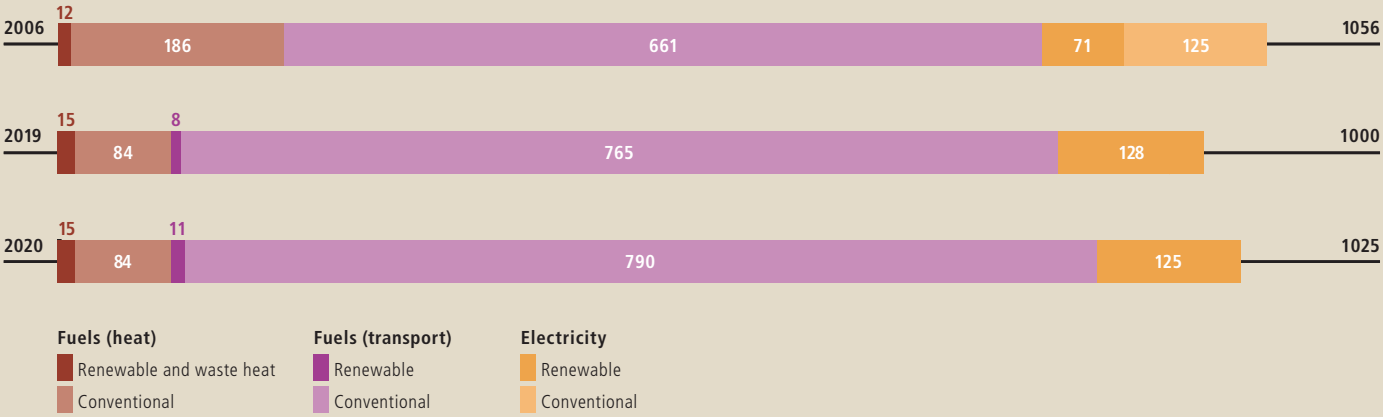
Success story

Milestones on the road to e-mobility

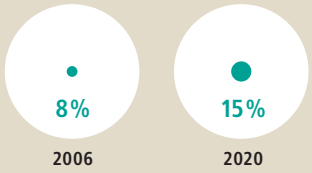
The new delivery van in the distinctive yellow colour of Swiss Post makes hardly any noise. Instead of petrol, the engine runs on electricity – just like all seven delivery vans and 16 electric scooters in the depot at the Amriswil (Thurgau) delivery point. Since August 2020, it has been the first delivery point to operate in a fully electric manner. Throughout Switzerland, the 6,000 e-scooters used for delivering letters have been running on naturemade star-certified Swiss green electricity for more than ten years. Of the 14,700 own vehicles of Swiss Post, around 6,700 are powered by environmentally friendly means. By 2030, Swiss Post intends to replace all fossil-fuel vehicles used for mail delivery with electric ones. In urban areas, the company also delivers parcels using electric vehicles where possible: in Basel, Geneva, Givisiez, Hinwil, Ostermundigen, St. Gallen and Zurich, there are already some electric delivery vans on the road. And from the new CityLogistik hub in Zurich, the postmen and women actually deliver all parcels and letters in electric vehicles.

Final energy consumption by energy source

in GWh/y

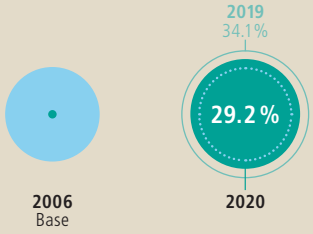


Renewable energy as a proportion of total consumption

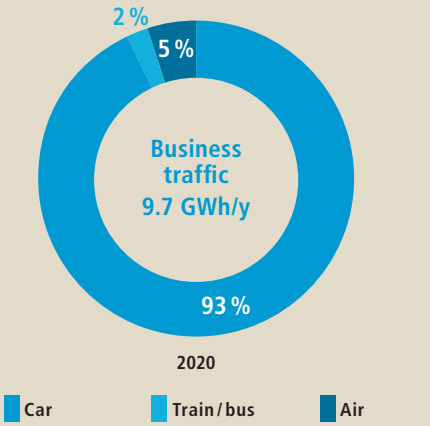


Increase in **energy efficiency**

Target 2020: 25%



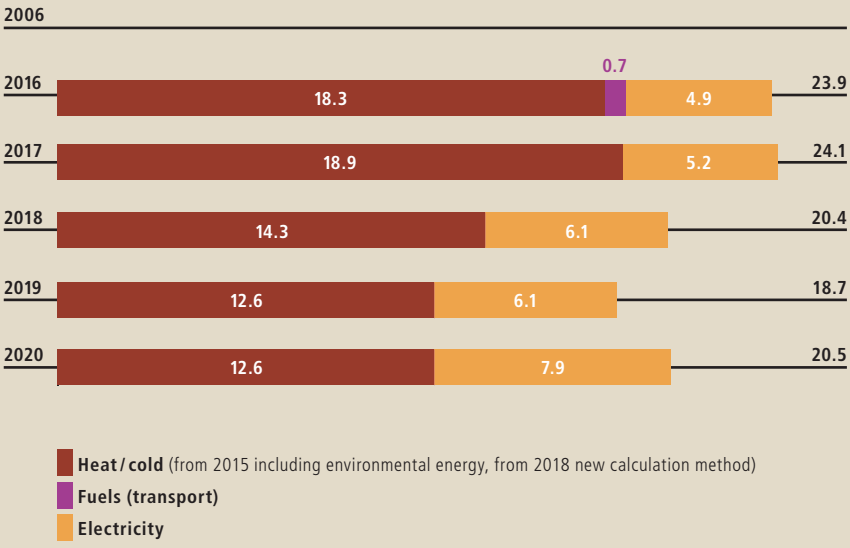
Energy consumption for **mobility**

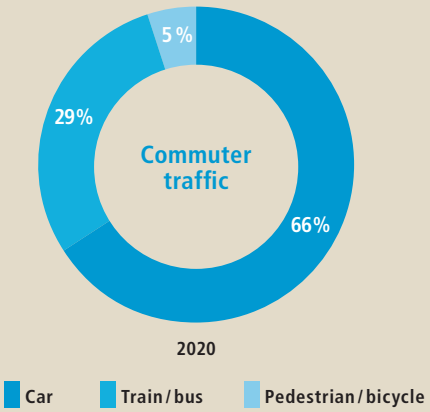


Note: Percentage shares based on energy consumption. The category Car includes the energy consumption of the actor's own vehicle fleet and of rented and private vehicles. Passenger traffic is not counted as business traffic.

Production of renewable energy

in GWh/y





Swiss Post

Joint measures

No. Measure

Buildings and renewable energy

01 ● Energy-efficient new and converted buildings
02 ● Analyses of potential of waste heat and renewable energy
03 ● No new fossil-fuel powered heating systems
04 ● Full cost accounting of energy efficiency
05 ● Energy-efficient lighting
06 ● Energy-efficient cooling machines
07 ● Energy-efficient sanitation facilities
08 ● Energy-efficient electromotors
09 ● Building technology with operating optimisation regime
10 ● Procurement of green power and power from renewable energy sources
11 ● Mobility concepts for buildings
12 ● Creation of ecofunds

Mobility

13 ● Integration of mobility management
14 ● Central information and booking platform
15 ● Encouragement of mobile-flexible forms of work
16 ● Promoting work hubs
17 ● Promotion of video and web conferencing
18 ● Incentives for using public transport
19 ● Providing or co-financing PT season tickets
20 ● Criteria for choosing mode of transport
21 ● Active parking space management
22 ● Provision of bicycle parking spaces
23 ● Provision of bicycles and e-bikes
24 ● Criteria for procuring energy-efficient vehicles
25 ● Eco-driving training courses for frequent car users
26 ● Promoting the use of car sharing agencies
27 ● Joint use of a company carpool
28 ● Provision of charging stations for electric vehicles

Data centres and Green IT

29 ● Full cost accounting of energy efficiency
30 ● Specifications for new servers and new data centre hardware
31 ● Highly energy-efficient data centres
32 ● Pushing passive cooling solutions in data centres
33 ● Encouraging server virtualisation in data centres
34 ● Bundling of data centres / outsourcing of IT services
35 ● Monitoring and evaluation of new technologies
36 ● Promotion of waste heat recovery
37 ● Promotion of economy mode at computer workstations
38 ● Promotion of energy-efficient printing solutions
39 ● Promoting reuse of appliances

● Adopted and at least 80% achieved
● Adopted and in implementation phase
○ Adopted, no data yet
– No leeway for action

10

Electricity from renewable sources since 2008

Swiss Post has been procuring electricity from renewable energy sources since 2008. The quality of the electricity has been improved continuously. It has come from Swiss sources since 2012. And since 2020, 20% of it has been green power carrying the naturemade star quality label. Most of this is used for electric mobility, but, to a lesser extent, also for the My Post 24 terminals and branches following the new concept, which puts greater focus on Swiss Post's own products, advice and the combination of physical and digital access points. Swiss Post now produces part of the electricity itself with its 22 photovoltaic systems.

Swiss Post

Specific measures

No. Measure
Target (target year)

01 ● Replacement of all petrol-engined scooters used to deliver letters with electric scooters. The 6,300 vehicles are operated with entirely naturemade star certified power.
13,9 GWh/y (2016)

02 ● Energy-efficient logistics management at PostLogistics
2,1 GWh/y (2021)

03 ● Replacement of conventional PostBuses with fuel-cell and diesel-hybrid buses (saving per PostBus)
15 MWh/y (2020)

04 ● Use of modern EcoLife transmissions and updates of the transmission software in PostBuses
6 GWh/y (2014)

05 ● Targeted replacement of installations for ensuring an uninterrupted power supply (UPS) in the data centres of PostFinance with latest generation installations
1 GWh/y (2014)

06 ● Procurement of certified biogas
5.5 GWh/y (2020)

07 ● Management of subcontractors in logistics: Monitoring of average fuel consumption with the 16 largest transport logistics partners.
1,1 GWh/a (2015)

08 ● Photovoltaic installations on Swiss Post buildings
5 GWh/y (2020)

09 ● Procurement of biodiesel
3,3 GWh/y (2017)

10 ● Optimisation of lifting beams in letter centres
114 MWh/y (2015)

11 ● Smart metering in transporters
8 GWh/y (2020)

12 ● Smart temperature regulation in Swiss Post buildings
Pilot projects (2020)

13 ● Fast charging stations for electric cars at Swiss Post buildings
Pilot projects (2020)

14 ● Electric delivery vans (savings per vehicle)
20 MWh/y (2017; ongoing measure)

15 ● Electric PostBus (savings per vehicle)
150 MWh/y (2017; ongoing measure)

16 ● Dimmable site lighting
210 MWh/y (2018)

17 ● Replacement of all Swiss Post illuminated signs
124 MWh/y (2018)

18 ● CO_2-free last mile in Zurich and Geneva
Pilot projects (2020)

19 ● Infrastructure E-delivery vans
Accompanying measure for electric mobility (2023)

20 ● Sustainable employee mobility
Awareness-raising (2019)

● Implemented
● In implementation phase

15

Electric PostBus

After three years, the e-bus project in Interlaken has now been concluded. The electric PostBus has covered 100,000 kilometres and avoided the emission of 100 tonnes of CO_2. With the project, PostBus has been able to gain valuable experience in the field of electric mobility and is aiming to make more use of buses with environmentally friendly drives in the future.

01, 03, 14, 15, 19

Climate fund finances environmentally friendly solutions

At Swiss Post, around 150 measures for improving environmental performance have been financed from the climate fund since 2010. The redistribution of the CO_2 levy was used to support projects worth around CHF 22 million that would not have been possible without these funds. The money was earmarked for measures to reduce CO_2 emissions, increase energy efficiency or raise employee awareness of environmental issues. The measures included procuring alternatively fuelled vehicles, advance conversion of buildings to LED lighting and replacing fossil-fuel heating systems with renewable heat sources.

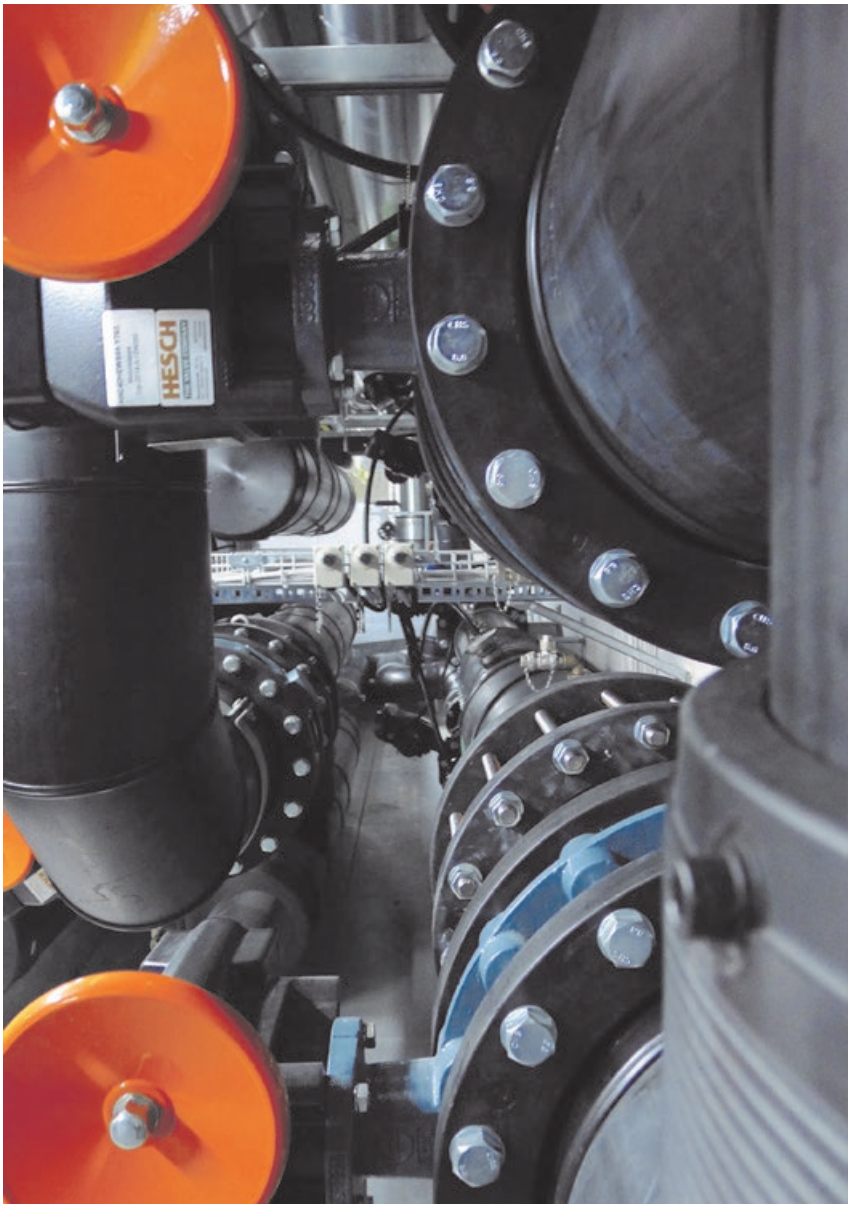
20

Climate-friendly on the roads

Sustainable mobility for employees is an important topic at Swiss Post. The company promotes non-motorised and public transport, provides charging infrastructures for electric vehicles and raises awareness among employees, such as with e-mobility days, discounted use of PubliBike, as well as campaigns like "Bike to Work".

ETH Domain

Having an efficient building infrastructure is a key prerequisite for the two Federal Institutes of Technology and the four research institutes to achieve their teaching and research goals, and to meet the requisite standard of quality. Thus, it is also central from an energy point of view. The research and teaching activities were reduced to a minimum due to the coronavirus pandemic, which led to an unexpected reduction in the amount of energy required. Energy efficiency has improved by 32% since 2006.



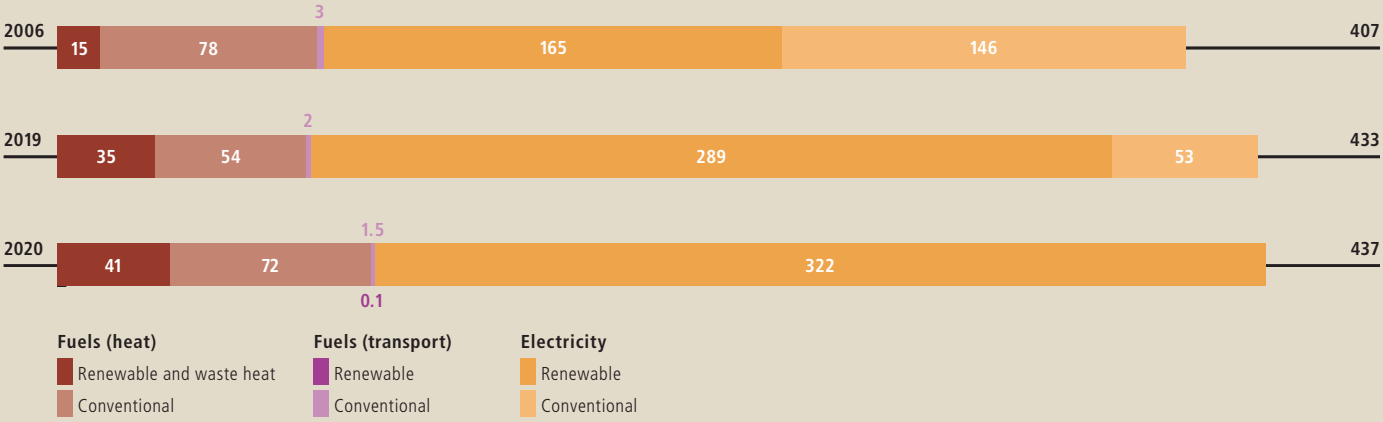
Success story

The Anergy Grid – a dynamic underground storage system

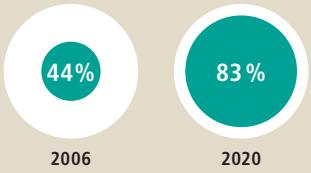
ETH Zurich's Hönggerberg campus is a thriving city district with over 12,000 students, employees and residents. They live in more than 30 buildings and consume almost 77 GWh of energy (electricity and heat) per year, of which around 22 GWh is for heating alone. Until ten years ago, almost all of the energy used for heating came from natural gas. The ETH Zurich Executive Board's target to reduce the CO_2 emissions of the campus by 50% by 2020 was met on time in that year. This corresponds to a saving of 5,000 tonnes of CO_2 per year. The Anergy Grid – a dynamic underground storage system – made a significant contribution towards achieving this target and will vastly reduce central heating and cooling in the heating station over the long term. On 9 January 2020, ETH Zurich was awarded the Watt d'Or energy prize of the Swiss Federal Office of Energy in the "Buildings and Space" category for its Anergy Grid.

Final energy consumption by energy source

in GWh/y

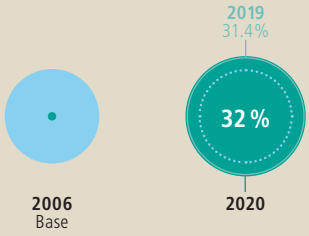


Renewable energy as a proportion of total consumption

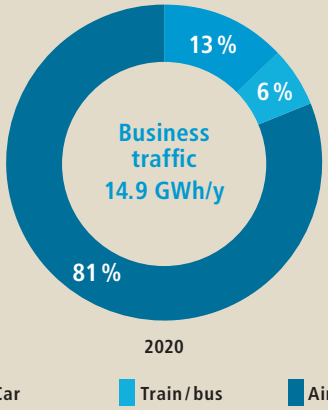


Increase in **energy efficiency**

Target 2020: 25%



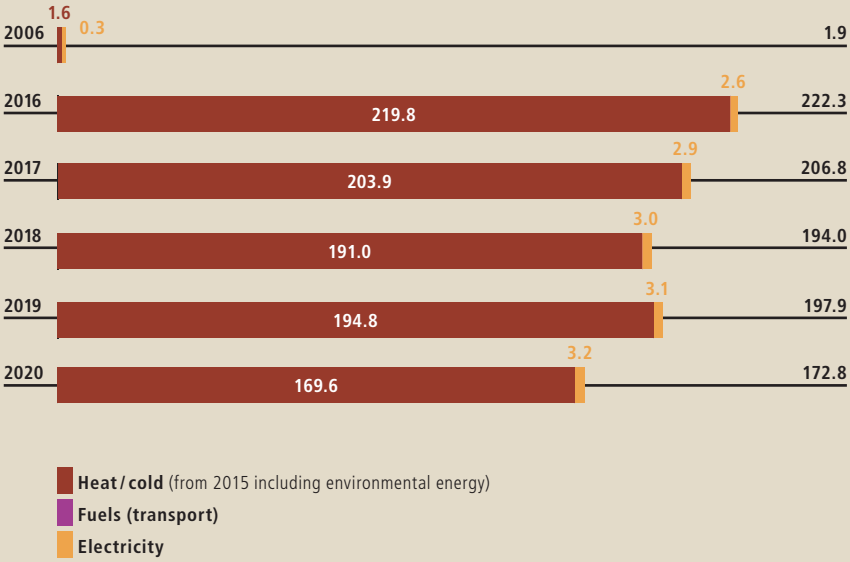
Energy consumption for **mobility**



Note: Percentage shares based on energy consumption. The category Car includes the energy consumption of the actor's own vehicle fleet and of rented and private vehicles. Commuter traffic has not yet been measured.

Production of renewable energy

in GWh/y



ETH Domain

Joint measures

No. Measure

Buildings and renewable energy

01 ● Energy-efficient new and converted buildings
02 ● Analyses of potential of waste heat and renewable energy
03 ● No new fossil-fuel powered heating systems
04 ◐ Full cost accounting of energy efficiency
05 ◐ Energy-efficient lighting
06 ● Energy-efficient cooling machines
07 ◐ Energy-efficient sanitation facilities
08 ◐ Energy-efficient electromotors
09 ◐ Building technology with operating optimisation regime
10 ◐ Procurement of green power and power from renewable energy sources
11 ● Mobility concepts for buildings
12 ◐ Creation of ecofunds

Mobility

13 ◐ Integration of mobility management
14 ◐ Central information and booking platform
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16 ◐ Promoting work hubs
17 ● Promotion of video and web conferencing
18 ◐ Incentives for using public transport
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35 ● Monitoring and evaluation of new technologies
36 ◐ Promotion of waste heat recovery
37 ● Promotion of economy mode at computer workstations
38 ◐ Promotion of energy-efficient printing solutions
39 ● Promoting reuse of appliances

● Adopted and at least 80% achieved
◐ Adopted and in implementation phase
○ Adopted, no data yet
– No leeway for action

01

Exemplary modernisation of old buildings

Switzerland is home to many older buildings that are still functional but are not energy-efficient. The WSL has modernised its laboratory and administration buildings in Birmensdorf in accordance with the latest energy standards. They were built in 1956. Thanks to the use of sustainably prefabricated, well-insulated façade elements with highly efficient windows, the work could be completed in a short space of time. Replacing the old roof with a solar roof means that – in addition to significantly reducing the amount of energy required – electricity can also be produced for the building's own needs. In 2016, the two buildings became the first modernised buildings in the Canton of Zurich to meet the requirements of the Minergie-P-ECO and Minergie-A-ECO standards. They show that older buildings do not always have to be replaced by new buildings.

ETH Domain

Specific measures

Nr. Measure
Target (target year)

01 ● Research projects by the Energy Science Center (ESC) at ETH Zurich in the areas of transport, renewable energy, sustainability behaviour, energy policy and smart grids in buildings. Launch of a platform for modelling future energy systems (Nexus-e)
New research projects (2020)

02 ● Teaching in the field of energy
Exemplary offerings from the new study and continuing education programmes
- Introduction of a master's course in Energy Science and Technology at ETH Zurich.
- Master's course in Future Transport Systems at ETH Zurich
- Master's course in energy management and sustainability at EPFL
- CAS in Applied Technology in Energy at ETH Zurich

New study courses (2020)

03 ● ETH Zurich: Construction of the Anergy Grid on the Hönggerberg campus
18 GWh/y heating and cooling (2020)

04 ● PSI: Improved waste heat recovery on the research site
51% waste heat (2020)

05 ● EPFL: EPFL's autonomous heat supply. Target: heating without fossil fuels by 2019, maximisation of the use of renewable energy for heating and cooling (100% heat pump with lake water) by 2019; minimisation of CO_2 emissions, use of potential synergies with other projects on the campus.
100% renewables (2021)

06 ● WSL: Conversion of all WSL's own sites to CO_2-neutral heating. Target: reduction of CO_2 emissions by 97% from 2006 to 2020 (2020: 85%), reduction of the heat requirement by 25% by 2018 (2020: 45%).
Reduction in CO_2 (2020)

07 ● Empa/Eawag: Waste heat and use of photovoltaics with a medium-temperature network, using waste heat from three large refrigeration machines (2024); Utilisation of 800 MWh/y at medium instead of high temperature, move out of natural gas (2026); seasonal storage of 1200 MWh/y with use through heat pumps (2026); expansion of photovoltaics to 600 MWh/y (2026)
Promotion of renewable energies (2026)

08 ● Electricity savings through efficiency measures and optimised operation at research facilities
7,5 GWh/y (2020)

● Implemented
● In implementation phase

05

100% renewable energy thanks to the use of lake water

EPFL's new heating and cooling infrastructure will be put into operation in 2021 to meet the campus's current and future heating requirement of 24 MW. It will enable EPFL to dispense with fossil fuels and use 100% renewable energy instead, as the new heat pumps are run exclusively on lake water. By no longer using the oil-fired cogeneration units, CO_2 emissions will be cut by 1,000 tonnes per year. EPFL attaches particular importance to reusing energy. It feeds cold and warm waste water back into the grid. In addition, the cold water discharged from the power plant is used to cool a data centre installed on the roof of the building.

07

Medium temperature network with waste heat recovery

Completed in 2019, the federal research institutes Empa and Eawag have built a new medium temperature network (38/28°C) in order to supply their modernised and new buildings on the Dübendorf campus directly using waste heat from the research facilities and cooling systems. The heat pumps were installed in 2020.

08

Efficiency measures in the research infrastructure

With potential studies, improvement processes and new technologies, the Paul Scherrer Institute has successfully implemented over 70 consumption-reducing measures throughout the whole infrastructure since 2013. This will save around 7.5 GWh of electricity per year compared to 2013. The greatest impact was achieved by replacing piston compressors with more energy-efficient screw compressors, which saved 1.3 GWh per year.

Genève Aéroport

Genève Aéroport has been improving the energy efficiency of its existing infrastructures for years. All new buildings meet the standards of the Energy Strategy 2050. The Cantonal Office of Energy (OCEN) and Genève Aéroport have developed the Energy Assessment together. The tool serves to increase energy efficiency when modernising existing infrastructures and to energy-optimise new infrastructures. Furthermore, the new GeniLac district heating network will make it possible for all buildings of Genève Aéroport to be heated and cooled using energy from lake water and 100% renewable electricity in future.

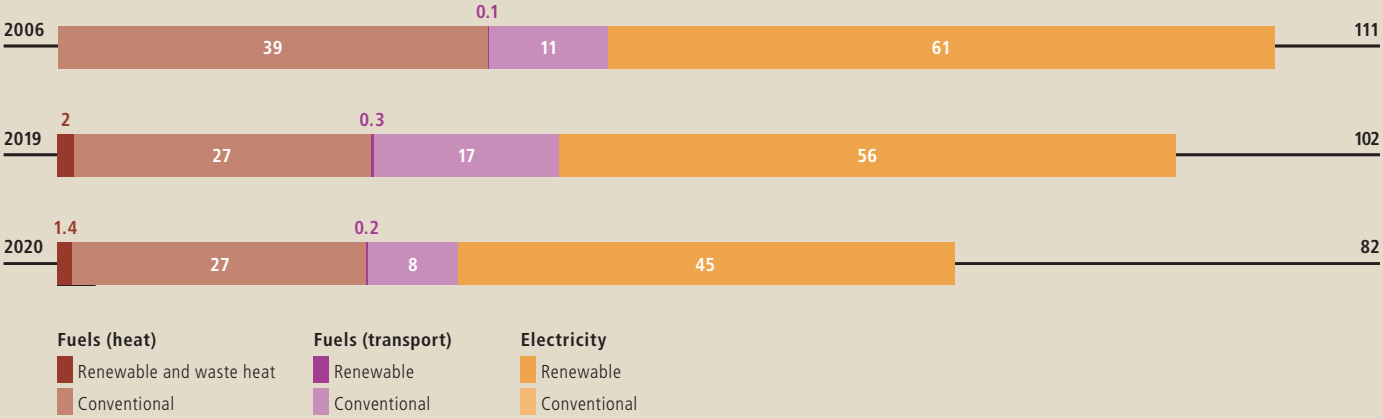
Success story

Partnership between the canton and Genève Aéroport

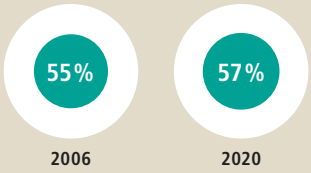
The cooperation between the Cantonal Office of Energy (OCEN) and Genève Aéroport was strengthened in 2020 with a partnership agreement. The aim is to ensure that infrastructures are compliant with energy technology standards and to make planning application processes more efficient. The Energy Assessment, developed internally and approved by OCEN, monitors the energy efficiency of construction projects. With annual energy balances, it takes account of actual energy consumption and promotes economically viable options with the highest energy efficiency, as well as encouraging the use of renewable energies (e.g. waste heat recovery). This leads to an increase in energy efficiency and ensures sustainable construction throughout the life cycle. A large number of employees were made aware of how the tool is used through an internal campaign.

Final energy consumption by energy source

in GWh/y

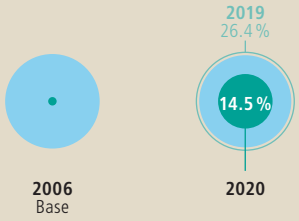


Renewable energy as a proportion of total consumption

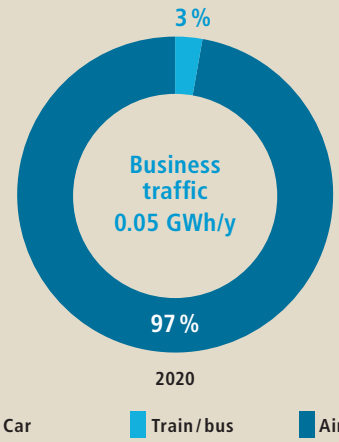


Increase in **energy efficiency**

Target 2020: 25%



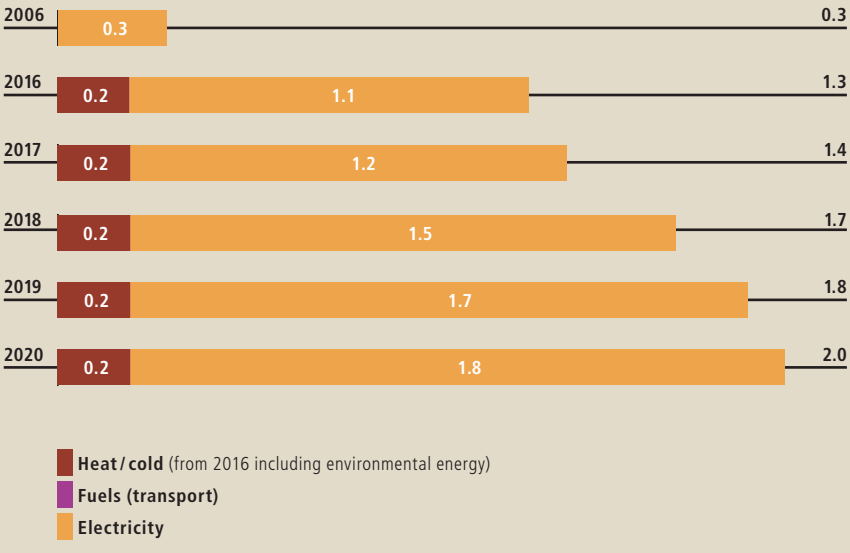
Energy consumption for **mobility**

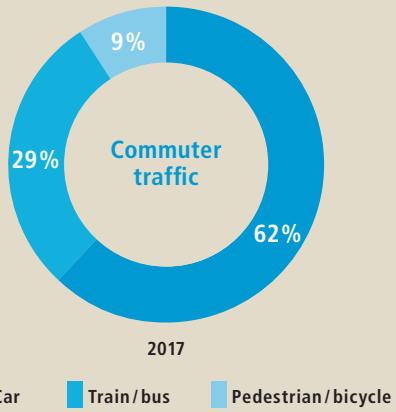


Note: Percentage shares based on energy consumption.

Production of renewable energy

in GWh/y





Genève Aéroport

Joint measures

No. Measure

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● Adopted and at least 80% achieved
● Adopted and in implementation phase
○ Adopted, no data yet
– No leeway for action

01

Public terrace with photovoltaic system

On 23 September 1920, Swiss pilot Edgar Primault landed his Haefeli DH-3 aircraft on rough terrain to the north of Geneva, officially laying the foundation stone for Geneva Airport. The new airport terrace, which was built to mark the 100th anniversary of Genève Aéroport, offers a unique view of the manoeuvring area, the runway and the Jura mountains. The terrace also produces energy: the photovoltaic modules between the pergola and the safety roof have a total surface area of 270 m² and generate 57 MWh of electricity per year, which corresponds to the annual consumption of 23 Geneva households.

Genève Aéroport

Specific measures

Nr. Measure
Target (target year)

- **01** ● Supplying own energy with photovoltaic installations
  3% (2020)
- **02** ● Producing renewable heat on the airport site
  100% (2025)
- **03** ● ISO 50001
  Certification (2017)
- **04** ● Shuttle service for staff outside public transport hours of operation
  Existing network (2016)
- **05** ● Electric vehicles and machines on the taxiway
  40% environmentally friendly vehicles, all companies (2020)
- **06** ● Electricity for aircraft (auxiliary power units turned off)
  120 GWh/y (2020)
- **07** ● Smart metering of energy flows
  80% (2020)
- **08** ● E-invoicing
  80% (2020)
- **09** ● Airport Carbon Accreditation (ACA), Level 3+ (neutrality)
  Certification (2017)
- **10** ● Energy savings in line with IPMVP protocol / Energy Efficiency Directive (EED)
  100% (2015)

01

Self-sufficiency thanks to photovoltaics

By means of an efficient energy management system, Genève Aéroport is aiming to guarantee a secure energy supply for all actors, increase energy efficiency and promote the use of renewable energies. Thanks to all the measures carried out over the past ten years, savings of almost 6.1 GWh per year were achieved on the airport site in 2020 – equivalent to the annual consumption of 2,600 households. All of the electricity consumed at the airport has been coming from renewable sources for several years already. Part of this is self-generated through photovoltaic systems with a total surface area of 13,800 m². This area will quadruple to almost 55,000 m² by 2030 thanks to a partnership with SIG.

03

ISO certification

Genève Aéroport has introduced a manual for its systematic energy management system (ISO 50001). This includes commitments towards authorities, including energy targets, a stakeholder analysis, harmonisation of energy, environmental and climate policies, monitoring of operational activities, and the assessment of energy efficiency by means of a management review.

10

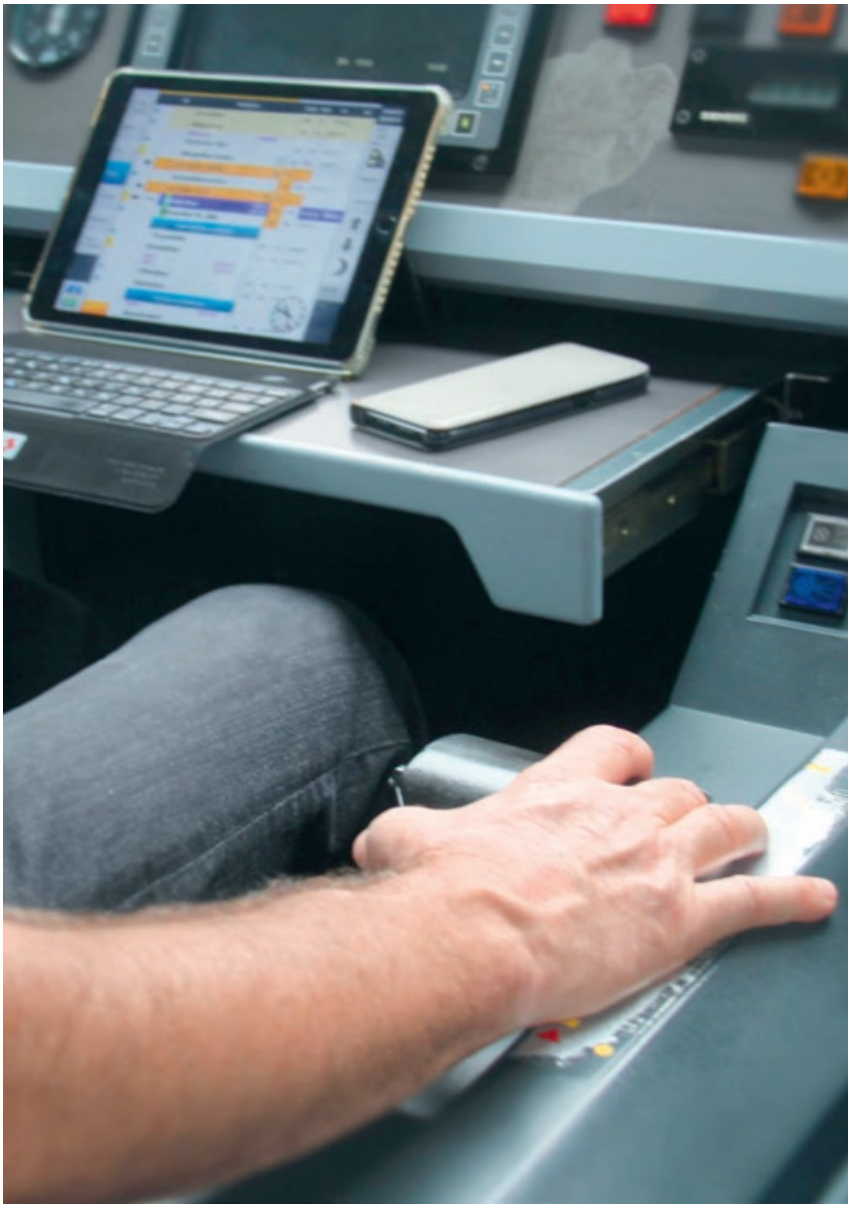
Energy-efficient exhaust air system in multi-storey car park

By installing new fans equipped with highly efficient motors and smart controls, Genève Aéroport has improved the exhaust air system in the P1 multi-storey car park, which has 2,600 parking spaces. Under the International Performance Measurement and Verification Protocol (IPMVP), this measure reduces electricity consumption by 150 MWh per year.

● Implemented
● In implementation phase

SBB

With a comprehensive package of measures, SBB is aiming to save 850 gigawatt hours of electricity per year by 2030. This corresponds to about 30% of its required energy. In 2020, SBB introduced apps to help locomotive crews drive in an energy-efficient way. It also invested in energy-efficient buildings and made technical improvements to rolling stock. Due to the huge fall in demand caused by COVID-19, energy efficiency per passenger-kilometre fell by 6.3% in 2020 compared to 2006, after the previous year had seen an increase of 23.3%.



Success story

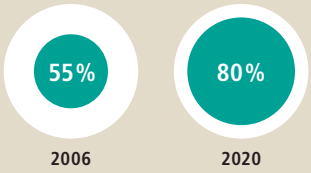
Greater energy efficiency thanks to digitalisation

In 2020, SBB introduced two applications that will make rail travel even more energy efficient. The optimised driving profile vPRO now supplements adaptive steering. Shortly before departure, an energy-optimised and dynamically correct driving profile is calculated for each passenger train, using the latest data from the Rail Control System (e.g. about the route, rolling stock or timetable). The profile is then sent to the locomotive crew. This will make rail traffic more punctual and stable – and the trains will require 51 GWh less energy per year. The energy consumption app (EVA) gives the locomotive personnel access to their own energy consumption data. EVA makes the energy values from vPRO's speed recommendations and the personal energy-saving driving profile visible to them. The locomotive crew can thereby draw personal conclusions about their own driving behaviour, which in turn has a positive effect on energy-efficient rail transport and reduces rail power consumption by an additional 11 GWh per year.

Final energy consumption by energy source

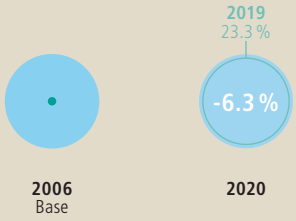
in GWh/y

Renewable energy as a proportion of total consumption

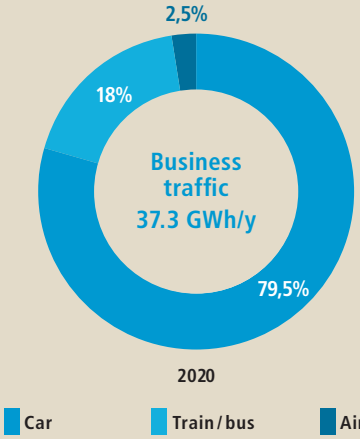


Increase in **energy efficiency**

Target 2020: 25%



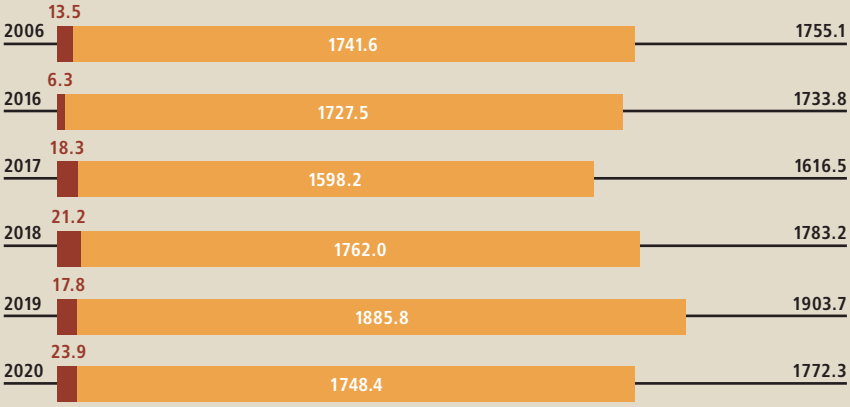
Energy consumption for **mobility**



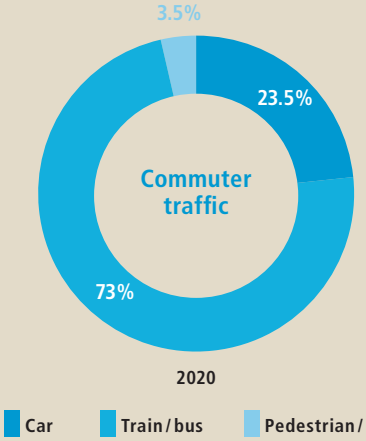
Note: Percentage shares based on energy consumption. Passenger traffic is not counted as business traffic. The category Car now only includes energy consumption for the own vehicle fleet.

Production of renewable energy

in GWh/y



Heat / cold (from 2015 including environmental energy)
Fuels (transport)
Electricity



SBB

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● Adopted and at least 80% achieved
● Adopted and in implementation phase
○ Adopted, no data yet
– No leeway for action

10

Rail power from solar energy

SBB wants to use only rail power from renewable sources by 2025. Around 90% already comes from hydropower, most of which is generated by the company's own power plants. To increase this proportion further, the direct feed-in of photovoltaic electricity into the rail power grid is being tested as part of an innovation project. On the roof of the frequency transformer plant in Zurich Seebach, Switzerland's first photovoltaic system has been installed (132 kWp). It produces 16.7 Hz electricity directly and feeds it into the rail power grid via an existing transformer. The direct feed-in can reduce conversion and transformer losses by 10%. The plant generates 130 MWh of electricity per year. This corresponds to the average amount of rail power consumed by 100 customers with a GA Travelcard.

SBB

Specific measures

Nr. Measure
Target (target year)

01 ● Adaptive control (ADL): A green wave for rail traffic
72 GWh/y (2017)

02 ● Energy modernisation of the Re460 locomotive, including replacement of the power converters
30 GWh/y (2022)

03 ● Energy-optimised shutdown of passenger trains (intelligent hibernation mode)
34 GWh/y (2017)

04 ● Refit of double-deck push-pull train: Optimisation of heating, ventilation, air-conditioning
13,3 GWh/y (2017)

05 ● Double-deck multiple-unit train: Optimisation of drive software and control, heating, ventilation, air-conditioning
13 GWh/y (2015)

06 ● InterCity tilting train (ICN): Demand-driven outside air control
2,6 GWh/y (2021)

07 ● Timetable-based train preparation time (HVZ-D, IC 2000, double-deck multiple-unit train, new trains)
9,4 GWh/y (2023)

08 ● FLIRT Regi0lten dry-type transformers
0,6 GWh/y (2018)

09 ● Optimisation of load distribution and nozzle control for Pelton turbines in the Amsteg hydroelectric power station
2,6 GWh/y (2015)

10 ● Load flow optimisation through energy management and traction power control system EMS / FSL
10 GWh/y (2017)

11 ● Increasing the efficiency of the Göschenen hydroelectric power station with new impellers and transformers
5 GWh/y (2020)

12 ● Optimisation of lifts / elevators and escalators
2,2 GWh/y (2025)

13 ● Migration of old telephone equipment to VoIP technology
2 GWh/y (2016)

14 ● Optimisation of rail points heaters by renewing them and optimising operation
10,8 GWh/y (2025)

15 ● LED lights in and around the station; platform and track area lighting
9,8 GWh/y (2025)

16 ● Optimisation of passenger guidance and information systems (signage) in station access areas
1,1 GWh/y (2025)

● Implemented
● In implementation phase

17 ● Energy-optimised temperature in regional transport areas
5,7 GWh/y (2023)

18 ● Optimisation of braking switches
1,4 GWh/y (2023)

19 ● Renovation of maintenance and parking facility F in Zurich
0,3 GWh/y (2020)

20 ● Switching off the transformer oil pump on Re 420 locomotives
0,6 GWh/y (2020)

21 ● Optimisation of compressed air generation Domino
3 GWh/y (2022)

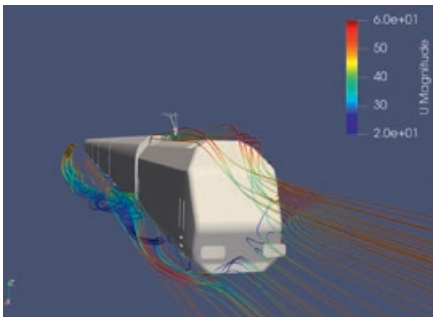
22 ● Expanding photovoltaic arrays with contracting
30 GWh/y (2030)

23 ● Thermal insulation windows permeable to mobile phone signals instead of repeaters
0,6 GWh/y (2024)

24 ● Energy consumption app for train drivers
11 GWh/y (2022)

25 ● Optimised driving profile vPRO
51 GWh/y (2022)

26 ● Heat generation substitution (Circulago) at Zug train station
0,54 GWh/y (2020)



02

Energy modernisation on the IC 2000

Together with the Re 460 locomotive, the IC 2000 double-deck trains form the backbone of SBB's long-distance services. An examination of the aerodynamics of the composition showed that there was potential to optimise the R 460 locomotive in the area of the undercarriage and buffers. SBB is now looking into making the necessary improvements.

17

Energy optimisation in regional transport

SBB has modernised the Seetal articulated railcars at the Olten plant. These now save 1.3 GWh of electricity per year. The air conditioning control system has been replacing, allowing controllers for hibernation mode and automatic wake-up (timetable-based activation) to be installed. In passenger operations, the outside air supply is now controlled based on occupancy with the help of CO_2 sensors. In addition, windows permeable to mobile phone signals have been installed in place of energy-intensive repeaters. These windows guarantee that passengers can always get a good reception on any device when travelling.

26

Lake water used to heat Zug train station

With the connection to the WWZ AG lake water heating network, SBB is replacing 540 MWh of natural gas per year at Zug train station with the climate-friendly alternative from Lake Zug. In addition to heat, SBB will also get cold water for cooling the station premises from the lake in future.

SIG

Since 2017, SIG has been supplying all of its customers in the regulated sector with 100% renewable Swiss power. Last year, the Geneva-based utility strengthened its commitment to renewable thermal energy in order to massively reduce CO_2 emissions in the Canton of Geneva. SIG has so far invested CHF 40 million in the construction of GeniLac, an ecological heating and cooling network that uses water from Lake Geneva and 100% renewable power.

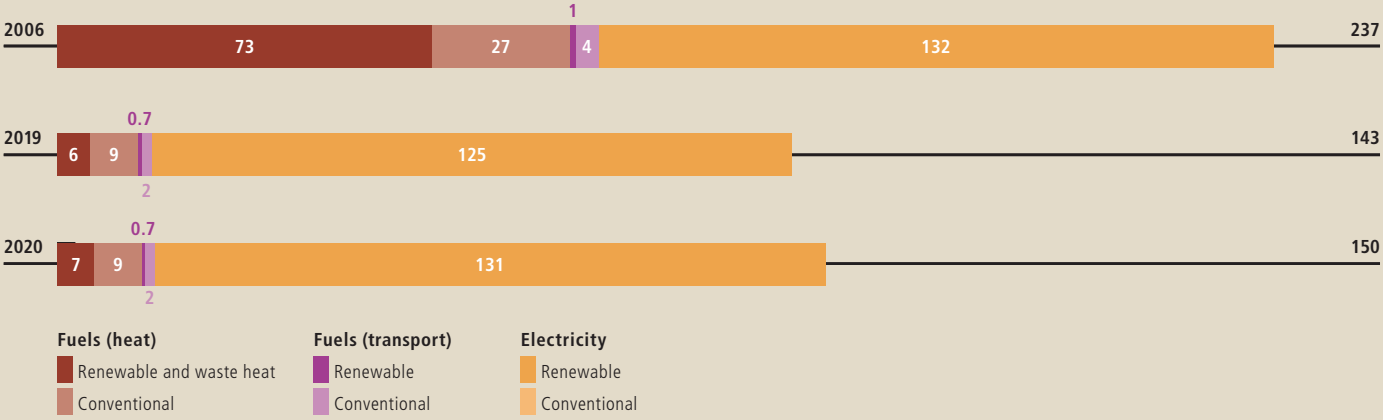
Success story

éco21: pioneering energy-saving programme

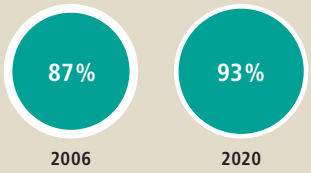
The éco21 programme has been successfully helping the people of Geneva to reduce their energy consumption and CO_2 emissions for more than 13 years. Since its launch in 2007, éco21 has saved 219 GWh of electricity per year in the Canton of Geneva – equivalent to the average consumption of 73,000 households. This has reduced CO_2 emissions by a total of 331,000 tonnes, which corresponds to the emissions generated by all the cars in Geneva over a period of 21 months. The measures and the campaigns being organised with the help of numerous partners are also contributing towards stimulating the local economy: the programme has indirectly led to the creation of 625 new jobs. éco21 is being conducted in collaboration with the Cantonal Office of Energy (OCEN).

Final energy consumption by energy source

in GWh/y

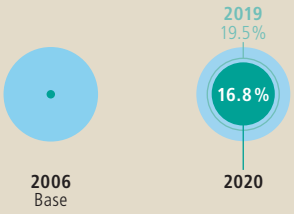


Renewable energy as a proportion of total consumption

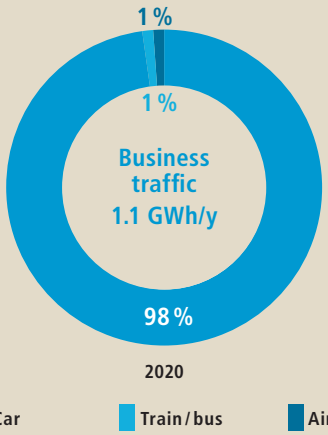


Increase in **energy efficiency**

Target 2020: 25%



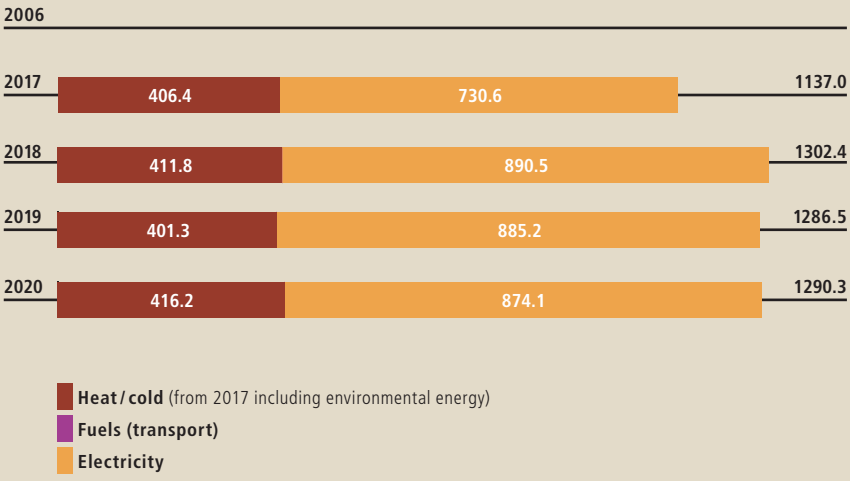
Energy consumption for **mobility**

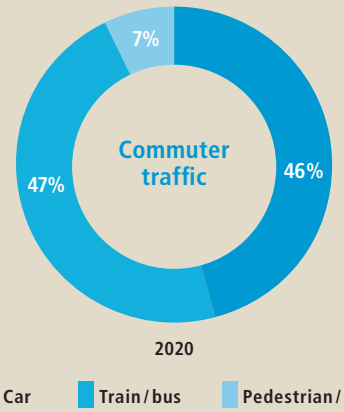


Note: Percentage shares based on energy consumption. The category Car includes the energy consumption of the actor's own vehicle fleet and of rented and private vehicles.

Production of renewable energy

in GWh/y





SIG

Joint measures

No. Measure

Buildings and renewable energy

01 ● Energy-efficient new and converted buildings
02 ● Analyses of potential of waste heat and renewable energy
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07 ● Energy-efficient sanitation facilities
08 ● Energy-efficient electromotors
09 ● Building technology with operating optimisation regime
10 ● Procurement of green power and power from renewable energy sources
11 ● Mobility concepts for buildings
12 ● Creation of ecofunds

Mobility

13 ● Integration of mobility management
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16 ● Promoting work hubs
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Data centres and Green IT

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35 ● Monitoring and evaluation of new technologies
36 – Promotion of waste heat recovery
37 ● Promotion of economy mode at computer workstations
38 ● Promotion of energy-efficient printing solutions
39 ● Promoting reuse of appliances

● Adopted and at least 80% achieved
● Adopted and in implementation phase
○ Adopted, no data yet
– No leeway for action

12

Environment and Technology Fund

SIG customers who opt for environmentally friendly and locally produced electricity are helping to finance two environmental and technology funds in French-speaking Switzerland. The Fonds Vitale Environnement promotes sustainable development and protects the environment by financing environmental projects in the Geneva Rhone basin. Since 2002, it has provided over CHF 1.5 million per year to support more than 80 environmental improvement projects. The fund committee is made up of representatives of environmental associations, the Canton of Geneva, the French government and SIG. The Fonds Vitale Innovation finances research projects in the fields of energy efficiency and renewable energy. More than 90 projects were supported with funding of CHF 0.5 million per year. Representatives of the SFOE, the scientific community and the Fédération romande des consommateurs serve on its committee.

SIG

Specific measures

No. Measure
Target (target year)

- **01** ● Development of geothermal energy **exploratory well** (2020)
- **02** ● Sustainable mobility **40 t CO_2** (2020)
- **03** ● The Vergers eco-district **600 t CO_2** (2018)
- **04** ● Participatory solar power plant **3 MWp** (2018)
- **05** ● Rehabilitation of the water supply **1100 MWh/y** (2020)
- **06** ● Local biogas production **3400 t CO_2** (2020)
- **07** ● éco21 energy saving programme **215 GWh** (2020)
- **08** ● naturemade star green power **Re-certification** (2019)
- **09** ● Expansion of district heating **20 GWh/y** (2019)

01

Renewable heat

Between 2013 and 2020, SIG invested in the development of various renewable heating energies in addition to GeniLac. This included a cantonal geothermal programme, the expansion of heating networks for renewable or recovered heat, and the development of innovative solar thermal systems. SIG also supports property owners with the installation of renewable heating systems. These measures have made it possible to replace fossil-fuel installations with renewable heat sources. By 2020, this reduced greenhouse gas emissions in the Canton of Geneva by 64,000 tonnes of CO_2.

08

Renewable electricity

SIG has been supplying all its customers with 100% renewable electricity since 2017. With its Electricité Vitale Vert product, SIG also offers 100% green, local electricity carrying the naturemade star quality label. To further improve the quality of the electricity that it sells, SIG will triple its own solar power production in the canton by 2025 compared to 2018 – enough to cover 6% of Geneva's electricity requirement.

02

Sustainable mobility

By gradually replacing fossil-fuelled vehicles with electric vehicles, optimising its site logistics and enabling mobile working, SIG has managed to halve the CO_2 emissions of its own vehicle fleet since 2013. At cantonal level, SIG is contributing towards the development of sustainable mobility by accelerating the expansion of the electric charging network and producing green hydrogen for the GOH! project.

● Implemented
● In implementation phase

Skyguide

In order to reduce kerosene consumption and greenhouse gases emitted by air traffic, Skyguide is committed to guiding aircraft to their destinations as directly as possible. It has therefore developed a network of direct routes over Switzerland and reduced aircraft waiting times before take-off and landing. The company also aims to maximise the energy efficiency of its own infrastructures. Skyguide increased its energy efficiency by 52.4% from 2006 to 2020.

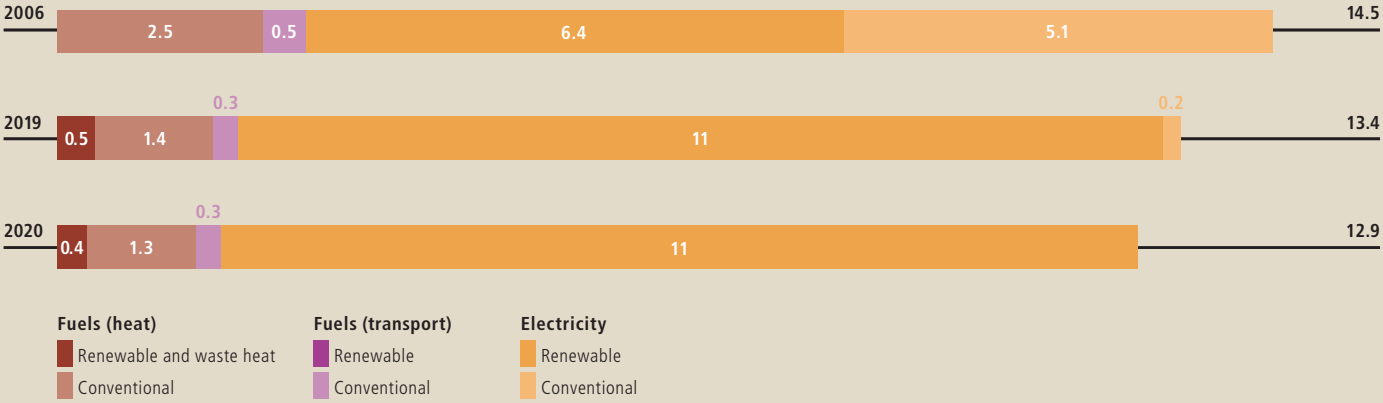
Success story

Efficient air traffic thanks to Virtual Centre

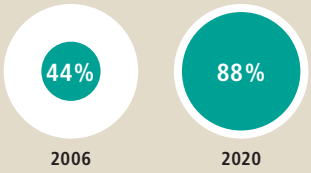
Skyguide develops and operates its technical infrastructure for air traffic control in accordance with Green IT best practices. With its Virtual Centre, Skyguide is strengthening its position as a pioneer in the field of air traffic control in Europe. Virtualisation of the air traffic control infrastructure improves scalability, reliability and cost efficiency. This location independence enables Skyguide to adapt its capacities to the fluctuating demand for air travel. For example, Skyguide can quickly increase or reduce capacity as required. This improves flight efficiency, which in turn reduces fuel consumption and CO_2 emissions. The Virtual Centre's innovative approach earned Skyguide an award from the European Commission at the annual World Air Traffic Management Congress in Madrid.

Final energy consumption by energy source

in GWh/y

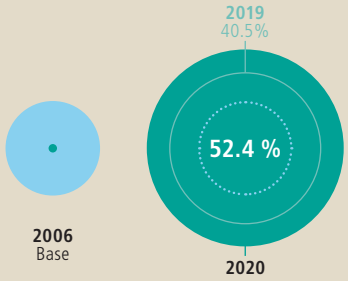


Renewable energy as a proportion of total consumption

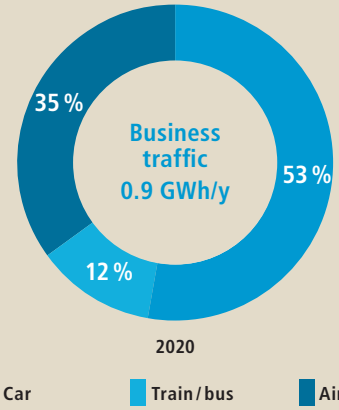


Increase in **energy efficiency**

Target 2020: 25%



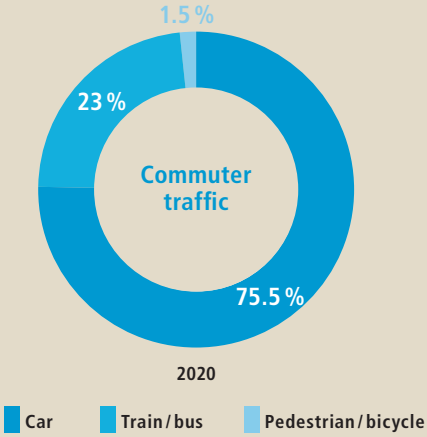
Energy consumption for **mobility**



Note: Percentage shares based on energy consumption. The category Car includes the energy consumption of the actor's own vehicle fleet and of rented and private vehicles.

Production of renewable energy

in GWh/y



Skyguide

Joint measures

No. Measure

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38 ● Promotion of energy-efficient printing solutions
39 ● Promoting reuse of appliances

● Adopted and at least 80% achieved
● Adopted and in implementation phase
○ Adopted, no data yet
– No leeway for action

15, 17, 20

Digitalisation reduces business travel

Skyguide uses state-of-the-art technology to minimise business travel and support the communications between its 14 locations. To further reduce travel, the company encourages video and web conferencing, as well as working from home. If travel is unavoidable, public transport is preferred. Thanks to technological equipment and revising the criteria for choosing a mode of transport, it has been possible to reduce air travel within the company by 80%. Skyguide has thereby achieved its goal of significantly reducing business and air travel by 2020.

Skyguide

Specific measures

Nr. Measure
Target (target year)

01 ● Introduction of expanded approach management for the Zurich region (XMAN)
127 GWh/y (2023)

02 ● Implementation of direct routes (FRA 2018 / 2021)
55 GWh/y (2018)

03 ● Improvement of vertical flight profiles
7.8 GWh/y (2014)

04 ● Green Wave for morning approaches of long-haul aircraft of the airline Swiss at Zurich Airport
7 GWh/y (2012)

05 ● Continuous descent approach for the airports of Geneva and Zurich
133 GWh/y (2014)

06 ● Shorter taxiing times when departing from Geneva (A-CDM)
9 GWh/y (2014)

07 ● Optimisations of heating, ventilation and air-conditioning systems and replacement of the cooling system in the Geneva air navigation services centre
1.7 GWh/y (2023)

08 ● Optimisations of heating, ventilation and air-conditioning systems and change of lighting to LED in the Dübendorf air navigation services centre
490 MWh/y (2020)

09 ● Optimised arrivals in Zurich (iStream/xStream)
8 GWh/y (2016/2014)

10 ● Reduction of number of servers by means of a virtualised telephone system
14 MWh/y (2018)

11 ● Reduction of calibration flights through use of drones
541 MWh/y (2022)

12 ● Latest-generation radio system (SmartRadio)
200 MWh/y (2021)

11

Drones for calibration flights

Automatic landing systems (ILS) at airports have to be calibrated on a regular basis. Skyguide has now replaced half of the calibration flights previously carried out with a specially equipped plane with drone flights. This will reduce annual CO_2 emissions by 142 tonnes and cut energy consumption by around 541 MWh/y by 2022. The company is aiming to cut CO_2 emissions from calibration flights by 70 % from 2023.

01

Expanded approach management

Thanks to the introduction of expanded approach management in a radius of over 350 km around Zurich airport, aircrafts adapt their cruising speed while still in the adjacent airspace, thus considerably optimising approach flows and reducing fuel consumption and CO_2 emissions.

02

Direct flight routes

Shorter flight routes mean lower kerosene consumption. Skyguide already provides the airlines with 63 optimised route segments. More will follow by 2022. The shorter flight paths will result in better route planning, as well as reducing the amount of fuel on board the aircraft.

● Implemented
● In implementation phase

Suva

Suva has defined target values for energy efficiency and the share of renewable energies for its operating sites and its remaining real-estate portfolio throughout Switzerland. In 2020, the company concluded a universal target agreement with the Federal Government at the nine largest operating sites. In Thun, Suva has created a new building with smart energy solutions, and in Lucerne it has modernised the lighting in a multi-storey car park. Suva has increased its energy efficiency by 28.9% since 2006.

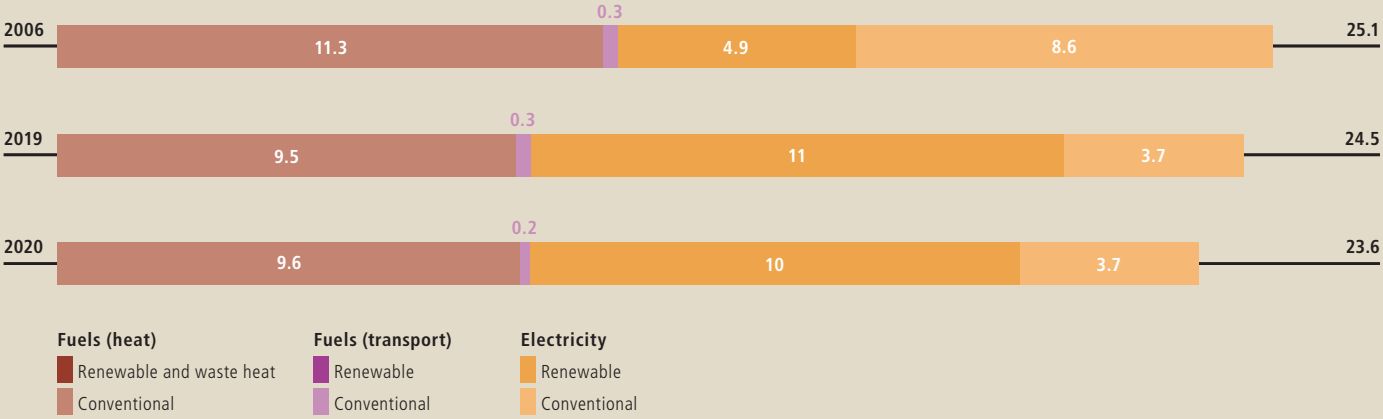
Success story

Smart new building in Thun

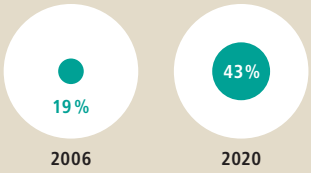
The seven-storey building with 35 rented apartments, as well as office and retail space, is located next to Thun's historical centre and is Minergie-certified. Two air-to-water heat pumps are used to generate heat, including for hot water. In addition, a condensing natural gas boiler helps to cover requirements during peak times. The building is powered by solar electricity produced in-house. Tenants therefore benefit from low electricity costs. Built-in smart energy solutions harmonise all of the energy-generation systems with consumption. The key figures are regularly analysed, and measures are taken to optimise energy consumption. The self-consumption rate (ratio between total photovoltaic production and own consumption) has stood at 85% since measurement began, while the degree of self-sufficiency (ratio of self-production to total consumption) is 25%. This makes it possible to have an environmentally friendly energy supply with minimum reliance on fossil fuels.

Final energy consumption by energy source

in GWh/y



Renewable energy as a proportion of total consumption



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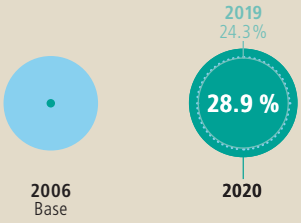
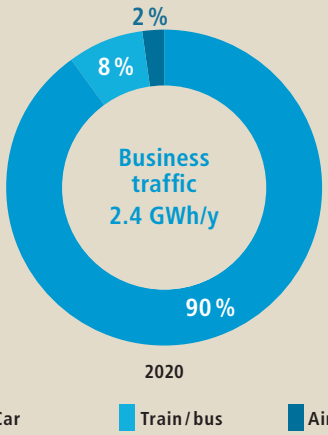


Energy consumption for **mobility**



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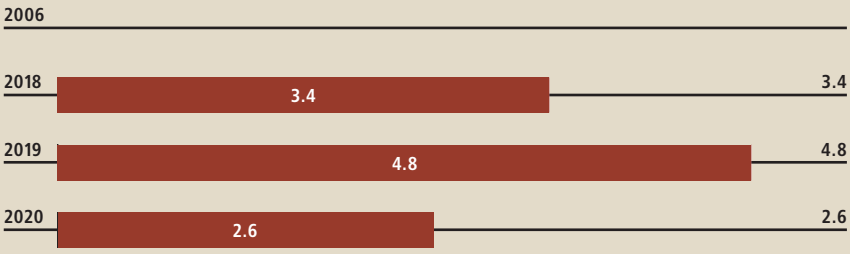
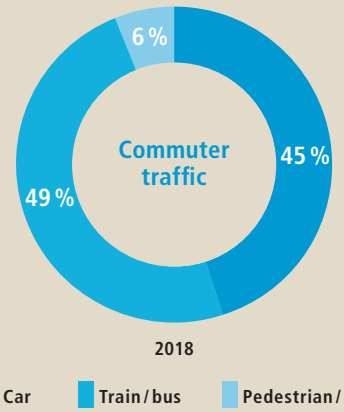
Production of renewable energy

in GWh/y



Heat / cold (from 2018 including environmental energy)
Fuels (transport)
Electricity



Suva

Joint measures

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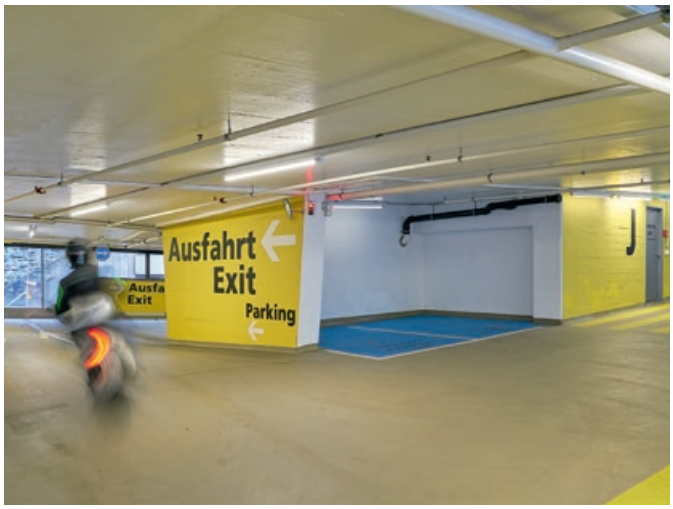


05

Modernisation of lighting at City Parking Lucerne

Suva modernised the lighting at City Parking Lucerne at the end of 2019. The multi-storey car park forms part of Suva's real-estate portfolio and offers 450 parking spaces in the city centre. As part of the modernisation, Suva replaced all conventional fluorescent luminaires with LED ones. In a prior assessment, semi-autonomous LED luminaires with integrated motion and twilight sensors were found to be the best choice. These also improve energy efficiency, as only individual luminaires switch on when detecting movements of people and vehicles. The performance review carried out after one year shows an impressive 65% reduction in annual energy consumption from 285 MWh to around 100 MWh.

Suva

Specific measures

Nr. Measure
Target (target year)

01 ● Contribution to limiting the global rise in temperature levels
Maximum 1.5 °C (2050)

02 ● Raising employee awareness
2 measures per year (2020)

03 ● Reduction of business travel
-10% compared with 2014 (2025)

04 ● Optimisation of logistics
-30% of transport operations compared with 2013 (2019)

05 ● CO_2 reduction target for direct real-estate investments
-35% energy consumption per m² of useful surface area compared with 2016 (2023)

06 ● Energy requirement for direct real-estate investments
100% renewable energy sources (2050)

07 ● Replacement of hydraulic lifts
Replacement of the 7 hydraulic lifts in the Sion Rehabilitation Clinic (2018)

● Implemented
● In implementation phase

01

Universal target agreement at the nine largest operating sites

In 2020, Suva concluded a universal target agreement with the federal government at the two sites of its headquarters, the two clinics and the five agencies. The ten-year term will allow the company to coordinate the implementation of the measures with operational processes and renewal cycles. With the selected measures, Suva increases its energy efficiency by almost 30%. This makes the universal target agreement an important tool for Suva to achieve its targets for improving efficiency and the share of renewable energies in heat generation.

04

Climate-friendly transportation with biogas lorries

Since autumn 2020, Suva has been even more climate-friendly on the roads of central Switzerland, having already reduced the number of journeys. This is made possible by the new Iveco Eurocargo lorry: with its biogas engine, the vehicle can save around seven tonnes of CO_2 per year.

02

Workshops on the topic of energy and climate

All employees can get involved and make a personal contribution towards helping Suva to achieve its climate targets. In 2020, sustainability management experts conducted energy workshops in two agencies and one department. They helped employees to come up with sensible measures for their daily routines. Additional workshops will be held in various departments and agencies in the coming years.

Swisscom

Swisscom takes care of the environment. By 2025, it intends to save significantly more CO_2 than it emits in all its operations and the supply chain. The aim is therefore to limit its own CO_2 emissions to 300,000 tonnes per year by 2025. Through its portfolio and together with its customers, it aims to save a total of 800,000 tonnes of CO_2 at the same time. The resulting difference yields a reduction of 500,000 tonnes of CO_2. This corresponds to 1% of Switzerland's greenhouse gas emissions.

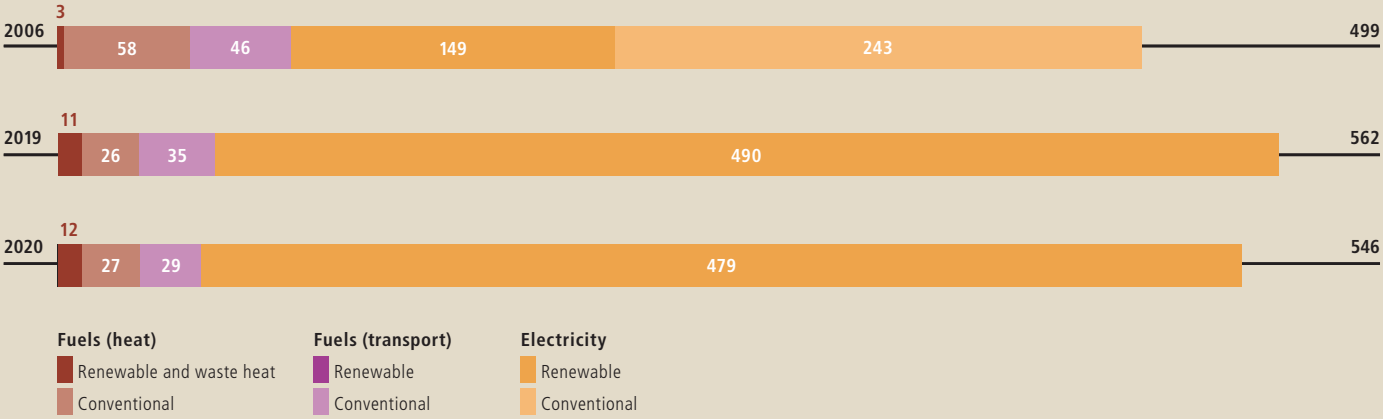
Success story

Climate-neutral operation

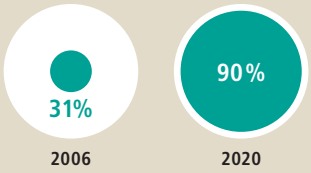
Swisscom has cut its greenhouse gas emissions by 80% over the past thirty years and will continue along this reduction path. This goal is anchored in the Sustainability Strategy 2025. Swisscom is aiming to further decarbonise its operations and supply chains and limit its direct and indirect CO_2 emissions to 300,000 tonnes by 2025. The company has been offsetting the remaining, unavoidable operational emissions in full with myclimate since 2020. Furthermore, it procures all of its electricity from renewable sources. Swisscom has carried the "Climate-neutral operations" label of myclimate since August 2020. CO_2 emissions from purchased products such as smartphones, tablets and accessories are not covered by the label. In cooperation with South Pole, Swisscom therefore offers customers the possibility of offsetting the CO_2 emissions of these products for a small surcharge.

Final energy consumption by energy source

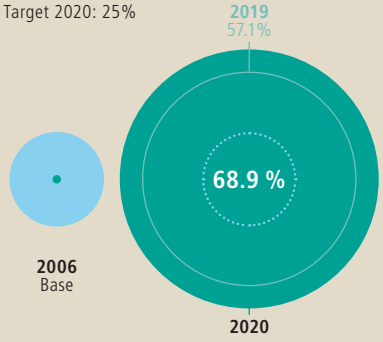
in GWh/y



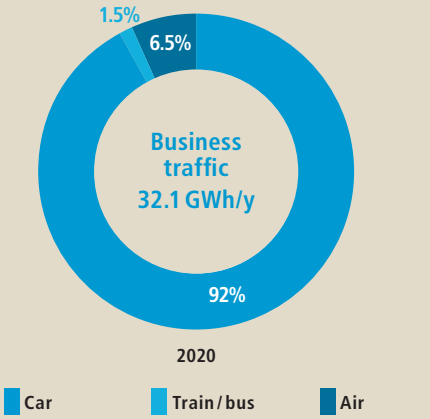
Renewable energy as a proportion of total consumption



Increase in **energy efficiency**



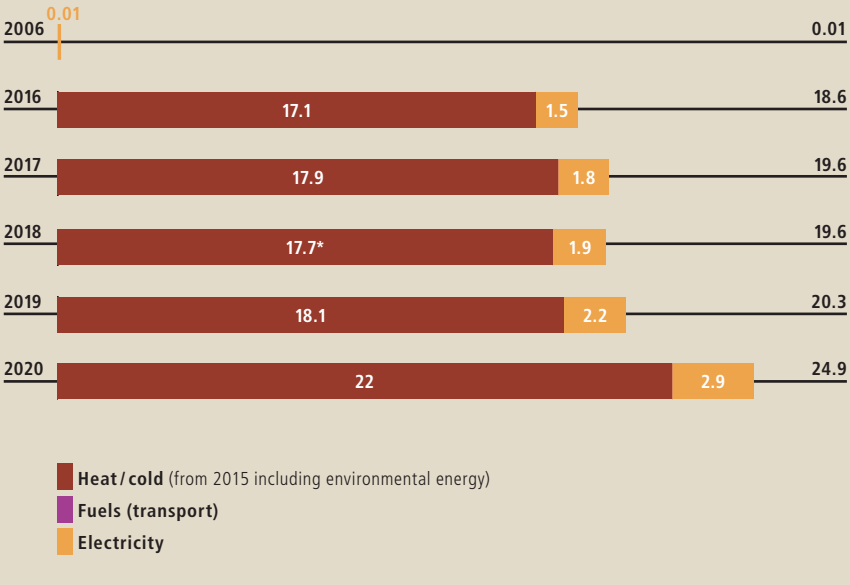
Energy consumption for **mobility**



Note: Percentage shares based on energy consumption. The category Car includes the energy consumption of the actor's own vehicle fleet and of rented and private vehicles.

Production of renewable energy

in GWh/y



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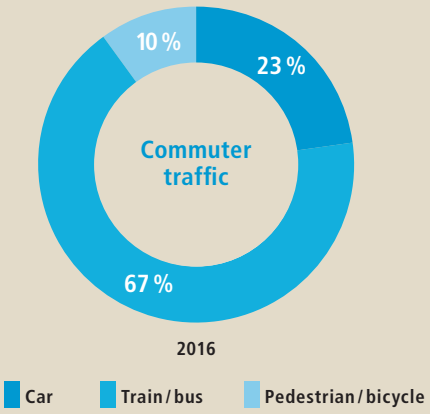

Swisscom

Joint measures

No. Measure

Buildings and renewable energy

01 ● Energy-efficient new and converted buildings
02 ● Analyses of potential of waste heat and renewable energy
03 ● No new fossil-fuel powered heating systems
04 ● Full cost accounting of energy efficiency
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07 ● Energy-efficient sanitation facilities
08 ● Energy-efficient electromotors
09 ● Building technology with operating optimisation regime
10 ● Procurement of green power and power from renewable energy sources
11 ● Mobility concepts for buildings
12 ● Creation of ecofunds

Mobility

13 ● Integration of mobility management
14 ● Central information and booking platform
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16 ● Promoting work hubs
17 ● Promotion of video and web conferencing
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36 ● Promotion of waste heat recovery
37 ● Promotion of economy mode at computer workstations
38 ● Promotion of energy-efficient printing solutions
39 ● Promoting reuse of appliances

● Adopted and at least 80% achieved
● Adopted and in implementation phase
○ Adopted, no data yet
– No leeway for action

39

Refreshed Smartphones

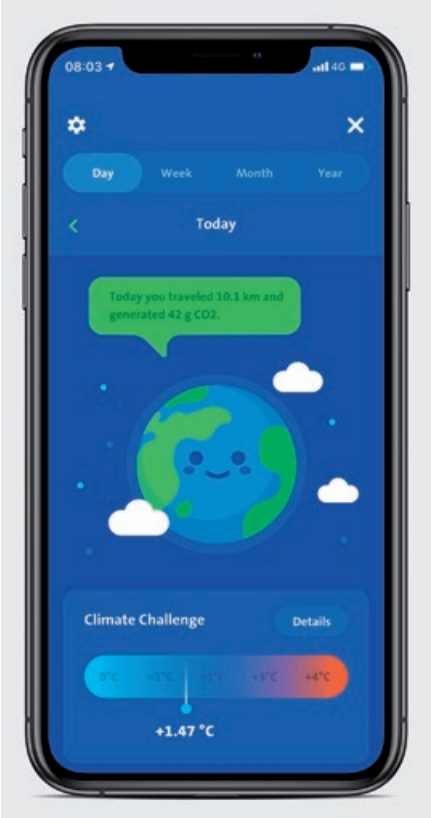
Swisscom successfully launched its new Refreshed Smartphones range in mid-2020. It now offers second-hand devices at a reduced price in its online shop. The majority of these devices come from its Buyback and Buyback Business recycling programmes for old equipment. Extending their useful life benefits the environment, while the customer benefits from cheaper prices. These aspects appeal to both price-sensitive and environmentally conscious customer groups, as shown by the growing interest in refurbished smartphones.

Swisscom

Specific measures

Nr. Measure
Target (target year)

- **01** ● Fresh air cooling in telephone exchanges
  45 GWh/y (2016)
- **02** ● Green IT offerings for customers
  57 GWh/y (2014)
- **03** ● Energy-efficient terminal devices for private customers
  25 GWh/y (2019)
- **04** ● Dematerialisation thanks to online invoicing
  2.1 GWh/y (2020)
- **05** ● Energy efficiency in the mobile phone network
  16 GWh/y (2015)
- **06** ● Recycling of mobile phones
  12% (annual)
- **07** ● Promoting mobile-flexible forms of work on customers' premises
  1 million (2020)
- **08** ● Science Based Target Initiative (SBTI): Fulfilment of the requirements for compatibility with 1.5 degrees
  18% CO_2 emissions (2020)
- **09** ● Solutions for climate-friendly mobility (Swiss Climate Challenge)
  10,000 t CO_2/y (2022)



08

Swiss Climate Challenge

Swisscom has launched the Swiss Climate Challenge (SCC) together with SwissEnergy, Engagement Migros and South Pole. The SCC allows the public to have their travel routes automatically recorded on their smartphone, making them more aware of the CO_2 emissions generated by their own mobility behaviour. Fourteen thousand users are already taking part in the Swiss Climate Challenge and thereby reducing their carbon footprint. In a related study, ETH Zurich is investigating the extent to which using the app reduces the personal footprint. In 2019, the SCC was integrated as an add-on feature in various partner apps (media, corporate and events).

03

Dematerialisation thanks to online invoicing

Online invoicing is an environmentally friendly, cost-effective and time-saving alternative to issuing paper invoices. The proportion of customers who receive their Swisscom bill online had grown to 56% by the end of 2020.

02

Energy-efficient devices for customers

Based on the electricity consumption per device and typical usage profiles, the energy consumption of all devices used by Swisscom residential customers is estimated at 287 GWh for 2020 (2019: 304 GWh). The company wants to reduce this figure and is therefore making its customers aware of the numerous ways to save energy.

● Implemented
● In implementation phase

DDPS

Until 2020, the DDPS was able to reduce its total annual energy consumption by 20% to 931 GWh, compared to 2006. Between 2011 and 2020, the share of renewable energies was increased from 9% to 30%. The amount of power generated from hydropower remained more or less the same, while that generated from solar energy increased with the expansion of self-production facilities. Also encouraging is the 26% reduction in the consumption of petrol, diesel and aviation fuel to 523 GWh in 2020 compared with the baseline year of 2006.

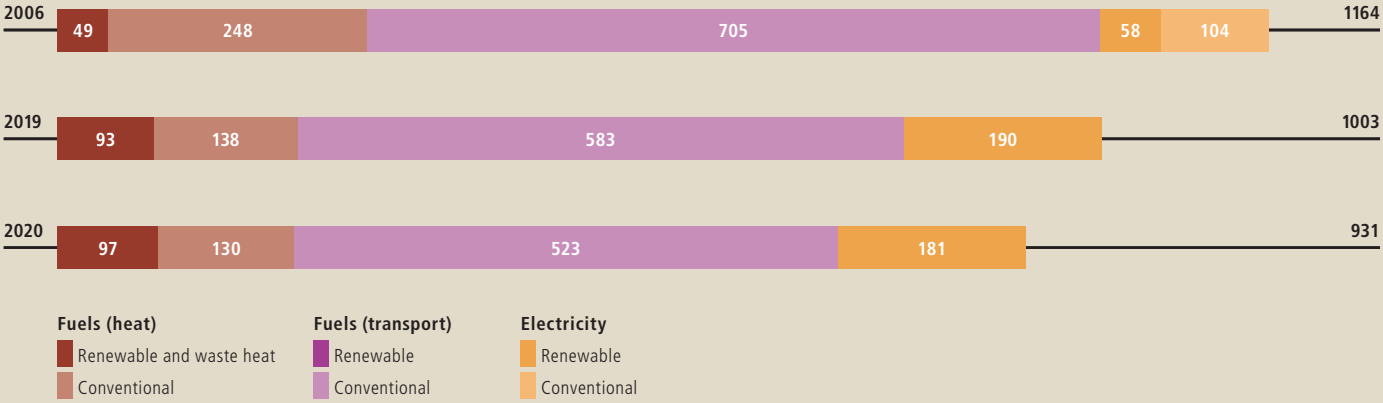
Success story

"Sites Energy Plan" project

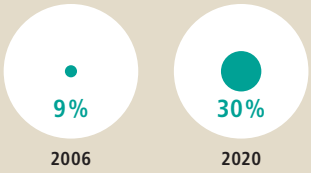
The "Sites Energy Plan" project was launched in 2010 with the aim of recording energy consumption on a building-specific basis and reducing it by 20%, as well as cutting the CO_2 emissions of the military sites by 30%. Since the start of the project, all relevant buildings on around sixty military sites have been recorded, over 2,600 measures prioritised and annual monitoring established. The DDPS building energy certificates categorise the condition of the building shell and the building technology in a clear way. Over the past ten years, it has been possible to reduce energy consumption by 10% through optimisation measures. Thanks to the switch from fossil fuels to renewable energy sources for heat generation, the target of reducing CO_2 emissions by 30% has been achieved. The project is being continued and further expanded. It makes a decisive contribution towards investing the limited financial resources in measures that have the greatest impact on increasing energy efficiency and reducing CO_2 emissions.

Final energy consumption by energy source

in GWh/y

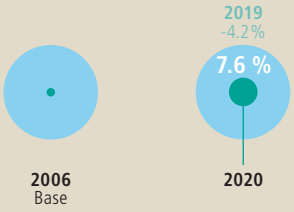


Renewable energy as a proportion of total consumption



Increase in **energy efficiency**

Target 2020: 25%

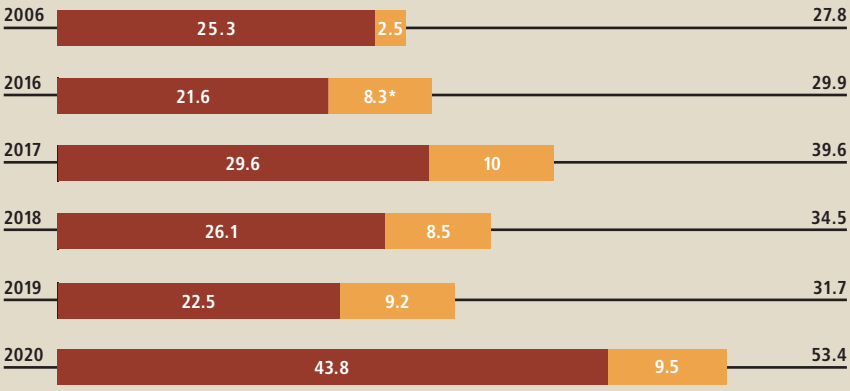


Energy consumption for **mobility**

Note: This data was not collected.

Production of renewable energy

in GWh/y



Heat / cold (from 2020 including environmental energy)
Fuels (transport)
Electricity

*This figure had to be corrected retrospectively.

DDPS

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39 ● Promoting reuse of appliances

● Adopted and at least 80% achieved
● Adopted and in implementation phase
○ Adopted, no data yet
– No leeway for action

01, 03, 06, 09, 10

Ecological infrastructure in Payerne

The buildings at the Payerne airbase and military training ground have been improved continuously since 2006. The army sports hall has been modernised to Minergie standard and equipped with a photovoltaic system (191 kWp). Further systems are being added all the time. The operations building with its new control tower meets the Minergie standard and brings together the Air Force's military personnel and the Skyguide staff under the same roof for the first time. Sustainable wood and heat pump systems are replacing various fossil-fuel heating systems. The new northern heating centre distributes the necessary heat to the numerous operating buildings along a two-kilometre pipeline. Energy efficiency is further improved through continuous improvement of own facilities.

DDPS

Specific measures

Nr. Measure
Target (target year)

- **01** ● Introduction of a DDPS building energy certificate in buildings and on sites (GEAVBS)
  60% GEAVBS (2020)
- **02** ● Own production of renewable energy
  4 GWh/y (2020)
- **03** ● Systematic introduction of central transport agencies in all military formations
  100% structures (2020)
- **04** ● Use of low-viscosity engine oils where operationally and technically possible
  100% use (2020)
- **05** ● Low-rolling-resistance tyres, where operationally and technically possible
  5.6 GWh/y (2020)
- **06** ● Optimisation of the air force's equipment in terms of fulfilment of its constitutional mandate and energy consumption. The indicator is the average ratio of actual to target flying hours (minimum)
  Indicator < 1.1 (2020)
- **07** ● Training and information. Indicator: All relevant corps have a trained environment representative at their disposal
  100% (2020)

02

Renewable energy in Thun

In recent years, the building shells at the Thun military training ground have been modernised and fossil fuels replaced with renewable energy sources for heat generation. The Schwäbis army site has been connected to the district heating network of the Thun military training ground. This measure alone has reduced annual CO_2 emissions by around 1000 tonnes. The new army sports hall is now certified according to the Minergie-P-ECO standard, and the building technology (particularly the lighting and ventilation control) have been optimised. Photovoltaic systems on six buildings currently generate around 1.7 GWh of electricity annually, which is used directly on site.

07

Training of environmental officers

On a specialist course as part of the army's environmental protection training in Spiez, the DDPS trains an environmental support officer in each troop. The training, which features practical examples, is intended to enable them to raise awareness of environmental protection among their troops. In this way, they make an important contribution towards achieving the energy and climate targets.

06

Optimisation of the Air Force's equipment

Instead of fighter jets, the specially developed PC-21 propeller aircraft is used to train jet pilots. This cuts CO_2 emissions by a factor of nine per flight hour. The use of state-of-the-art simulators further reduces the number of training flights.

● Implemented
● In implementation phase

Civil Federal Administration

The Civil Federal Administration continued to implement the "Sustainable Development" strategy last year. At 67.4%, energy efficiency compared to the reference year of 2006 was slightly lower than in the previous year (70.4%). Total energy consumption has been reduced by 27.7% over the past 14 years to 98.2 GWh. To reduce greenhouse gas emissions, the Federal Council has pushed for stricter regulation of business travel by air, as well as encouraging cycling. At the same time, it has consistently promoted the optimisation of buildings and new ways of working.

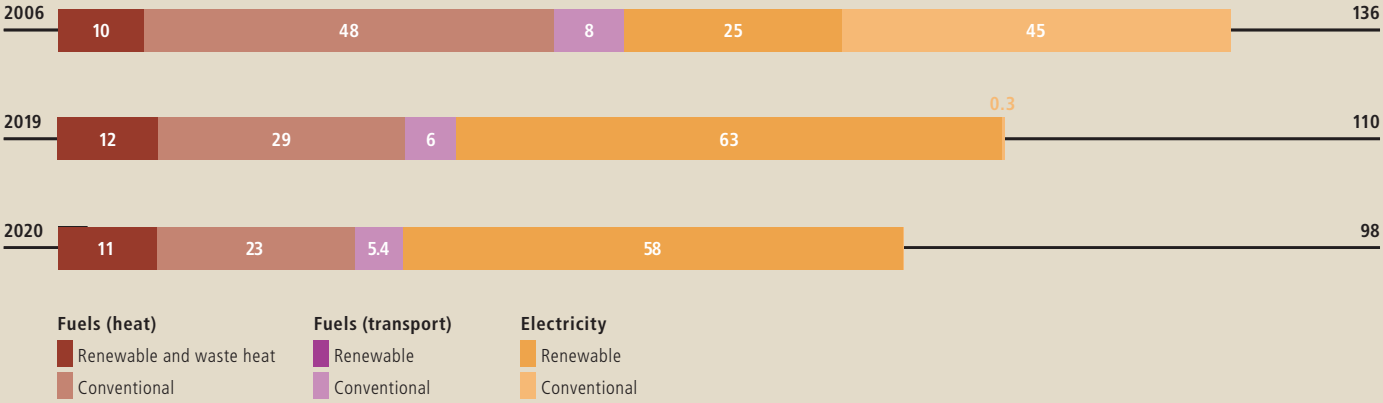
Success story

Greater use of bikes

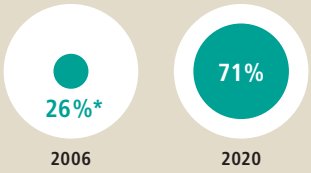
Together with the DDPS, the Federal Department of the Environment, Transport, Energy and Communications (DETEC) has launched a pilot project to encourage employees to cycle more often. This helped to ensure that social distancing could be better maintained than on public transport during the COVID-19 pandemic. At the same time, the bicycle was promoted as a healthy, low-emission and efficient mode of transport for commuting and business trips. In five pilot administrative units, e-bikes were made available, mainly for business trips, but also for commuting to work. Employees were also offered a free annual subscription for a bike-sharing programme. The pilot project was accompanied by active communication about the project and on the topic of bicycles, as well as the annual "Bike to Work" challenge. During this time, attractive offers and discounts on all aspects of cycling were available to the entire Federal Administration, and active use was made of them. The exact results are still being evaluated and will serve as a basis for deciding whether to extend the project.

Final energy consumption by energy source

in GWh/y



Renewable energy as a proportion of total consumption



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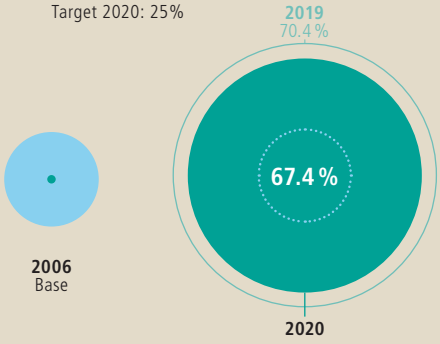
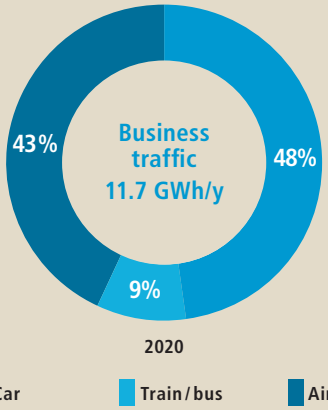
Increase in **energy efficiency**

Target 2020: 25%



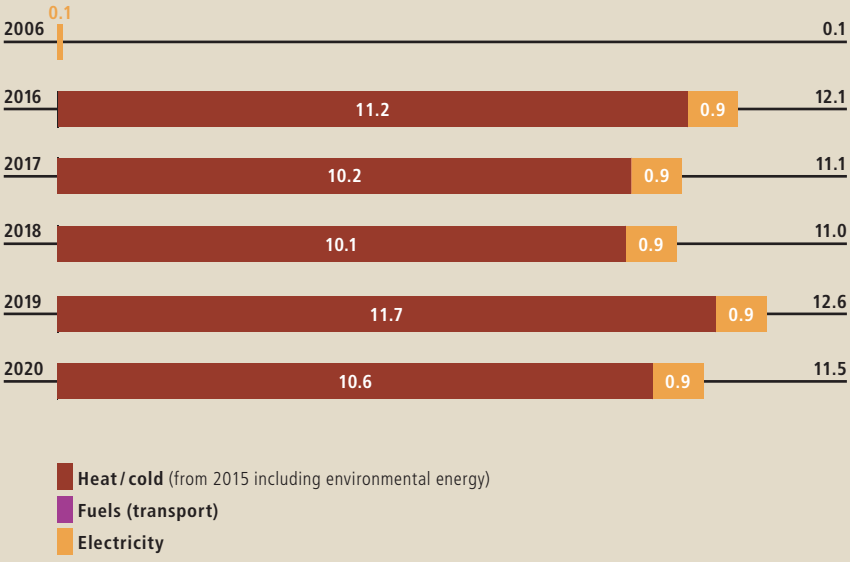
Energy consumption for **mobility**

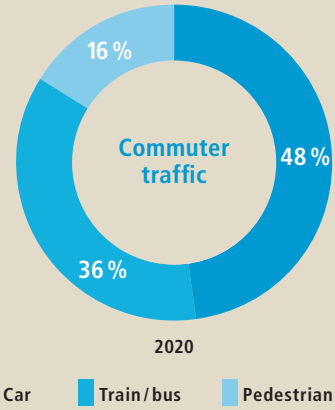


Note: Percentage shares based on energy consumption. The category Car includes the energy consumption of the actor's own vehicle fleet and of rented and private vehicles.

Production of renewable energy

in GWh/y





Civil Federal Administration

Joint measures

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● Adopted and at least 80% achieved
● Adopted and in implementation phase
○ Adopted, no data yet
– No leeway for action

17

Video and telephone conferences encouraged

Video and telephone conferences help to reduce the burden on the environment. In the wake of the COVID-19 pandemic, the number of federal employees working from home increased sharply, which led to a large rise in the number of video and telephone conferences. In response, the Federal Office of Information Technology, Systems and Telecommunication (FOITT) massively increased the capacities of the existing collaboration tools within a very short space of time and made alternative video and telephone conferencing tools available to the entire Federal Administration. This ensured that up to 20,000 federal employees could access the federal network from their home-based offices every day, and that up to 6,000 online meetings could be held daily – around ten times as many as before the pandemic.

Civil Federal Administration

Specific measures

Nr. Measure
Target (target year)

01 ● Resources and Environmental Management programme of the Federal Administration RUMBA (including business travel)
2.3 GWh/y (2020)

02 ● Reduction of energy consumption from business travel
0.5 GWh/y (2020)

03 ● Energy-efficient enveloping system
75% saving (2013)

04 ● Construction of new photovoltaic installations; replacement of fossil energy with renewable energy
0.6 GWh/y (2020)

05 ● Sustainable building abroads
Introduction (2018)

06 ● Update of "Ecological assessment data for the construction sector" to promote energy-efficient construction (KBOB)
Every 2 years (2020)

07 ● Making employees aware of energy-efficient and environmentally compatible behaviour at the workplace
2 measures per year (2020)

08 ● Voluntary target agreement with the Energy Agency of the Swiss Private Sector (EnAW)
2200 t CO_2/y (2022)

09 ● New tunnels fitted, and existing tunnels refitted, with LED lighting
Ongoing

● Implemented
● In implementation phase

02

Climate-friendly business trips

Air traffic is responsible for almost 50% of the CO_2 emissions generated by the Federal Administration. The Federal Council has therefore adopted the air travel action plan to reduce CO_2 emissions from business air travel by 30% between 2019 and 2030. Journeys of up to six hours are made by train and only economy class may be used for air travel. Reducing the size of delegations and encouraging video conferencing also cuts the number of trips.

05

Sustainable hybrid building in Seoul

In Seoul, a contemporary reinterpretation of a traditional Korean hanok has been created to house the new Swiss Embassy. The embassy building has a hybrid wood-concrete design that is innovative in South Korea and was awarded the prestigious "Korea Wood Design Award 2020".

07

Environmentally friendly with the RUMBA challenge

A total of 1004 federal employees have made their working day more climate-friendly by taking part in the "Klima konkret" RUMBA challenge. From airing their house to tidying up their e-mail inbox to completing a quiz – the challenge offers tips and tricks to motivate people to behave in a more energy-efficient and environmentally friendly way.

The 39 joint measures taken by all actors in detail

The Exemplary Energy and Climate initiative has defined 39 joint measures in the three action areas buildings and renewable energy, mobility, and data centres and Green IT. Here you can read the detailed descriptions, including the relevant indicators and targets.

Action area buildings and renewable energy

01 Energy-efficient new and converted buildings
The actors' strategies for buildings and sites are guided by best practice. For specific building standards they are based as much as possible on existing labels, such as Minergie-P-ECO.
For sites, strategies with an aggregate energy review are appropriate.
Indicator: standards existing, published and complied with.
Target: 100 % compliance with the standards from 1 January 2016.

02 Analyses of potential of waste heat and renewable energy
The actors each draw up an analysis of potential. It is intended to show the extent to which waste heat could be utilised and renewable energy produced on their sites and in their buildings, and what this would cost. The FOE is consolidating these analyses and drawing up a master plan called "New renewable energy in the Federal Government and parastatal enterprises".
Indicator: analyses of potential available.
Target: analyses of potential available.

03 No new fossil-fuel powered heating systems
The actors no longer build any fossil-fuel operated heating systems in their buildings. This also applies explicitly when replacing existing systems. Justifiable exceptions are possible, for example for special sites or functions. In such cases, renewable substitute energies such as biogas should be used or, as the second priority, emissions should be offset by CO_2 reduction measures.
Indicator: newly-installed heating systems operated without fossil fuels.
Target: 100 % from 1 January 2016.

04 Full cost accounting of energy efficiency
In order to evaluate energy efficiency measures, the actors use life cycle costs (LCC) or total cost of ownership (TCO) approaches. Investments in energy efficiency measures that pay for themselves over the life cycle of a measure are implemented. The application of the methodology is made public in a strategy paper.
Indicator: 1–2 case studies available.
Target: available from 1 January 2017.

05 Energy-efficient lighting
The actors now only procure lighting that is guided by the best practice principle, i.e. which is based on the latest and most energy-efficient technology. In the case of outdoor lighting, special attention is paid to nature-related issues, especially light pollution. Indicator: internal standards available and complied with.
Target: 100 % from 1 January 2016.

06 Energy-efficient cooling machines
The actors plan, procure and operate cooling machines to best practice standards: first of all, generation of heat/cold has to be designed integrally and, if possible, without a cooling machine (taking account of the annual heat / cold curve, use of waste heat, free cooling). If a cooling machine is nevertheless required, it has to be implemented according to the latest SIA standard; in addition, a greenhouse gas effect evaluation should be carried out.
Indicator: proportion of cooling machines procured in compliance with the requirements.
Target: 100 % from 1 January 2016.

07 Energy-efficient sanitation facilities
Cold water alone is the standard for hand-washing and similar activities in toilet blocks and comparable facilities in new and renovated buildings. In addition, the actors now only procure sanitary ware in energy class A, except for showers (energy class B).
Indicator: internal standards available and complied with.
Target: 100 % from 1 January 2016.

08 Energy-efficient electromotors
When installing (in new and replacement buildings) new electrical building apparatus (ventilation, air-conditioning, cooling, sanitary), electromotors and other electrical apparatus (e.g. lifts, conveying equipment, compressors), the actors use the most efficient electromotors in each case (best practice strategy).

Indicator: internal standards available and complied with.
Target: 100% from 1 January 2016.

09 Building technology with operating optimisation regime

The actors subject their building apparatus to continuous operating optimisation (OO). Recognised measures for increasing energy efficiency are being implemented constantly.
In addition, whenever a new apparatus is commissioned in a building, an acceptance procedure is consistently carried out; any defects are rectified.
Indicator: consumption of apparatus with a continuous OO regime as a percentage of total annual energy consumption.
Target: 60% (by 2020).

10 Procurement of green power and power from renewable energy

The actors will gradually increase their proportion of green power (naturemade star or equivalent) to 20% by 2020. The remaining power requirement should be met by no later than 1 January 2020 exclusively with power from renewable energy sources.
Indicator: 1. green power as a percentage of total consumption, 2. power obtained from renewable energy as a percentage of total consumption.
Target (not including rail traction power): 1. 20% (by 2020), 2. 80% (by 2020).

11 Mobility concepts for buildings

From now on, the players only construct new buildings with more than 50 permanent employees when there is an overriding mobility concept, and take the traffic volume into consideration already when choosing the location. The concept comprises minimum requirements for opening up areas with public transport (PT) and non-motorised traffic, as well as measures to reduce induced traffic and promote energy-efficient mobility.
Indicator: new buildings (> 50 permanent jobs) as a percentage of all new buildings (> 50 permanent jobs) with a mobility concept.
Target: 100% from 1 January 2016.

12 Creation of ecofunds

The actors each create an ecofund of their own. These ecofunds are financed out of the reimbursement of the CO_2 and VOC levies, and out of further reimbursements of monies in connection with environmental incentive levies, provided that these are not to be used by law or under a performance agreement for other purposes, or from other financing sources. The ecofunds finance measures in the energy or environmental sector.
Indicator: % of reimbursed environmental incentive levies that flow into the ecofund.
Target: 100% (by 2020).

Action area mobility

13 Integration of mobility management
The actors implement structures and processes for regular assessment and effective management of employee mobility in terms of their environmental impact.
Indicator: % of employees for whose business divisions a mobility management system has been implemented.
Target: 100% (by 2020).

14 Central information and booking platform
The actors provide a central, web-based information and booking platform that allows easy access to planning and decision-making tools, guidelines and other information on service offers from the mobility sector.
Indicator: % of employees having access at their workplace to a mobility information platform.
Target: 80% (by 2020).

15 Encouragement of mobile-flexible forms of work
The actors enable forms of work that allow employees with suitable job profiles to choose, as freely as possible, their time and place of work (e.g. at home, when travelling, at other company sites). This includes equipping them with the necessary devices (e.g. mobile devices with remote access to the corporate network) and creating the cultural preconditions by picking a central theme in management and staff development.
Indicator: employees who regularly use mobile-flexible work forms as a percentage of all workers with a suitable job profile.
Target: 30% (by 2020).

16 Promoting work hubs
The actors provide work hubs at which employees from other sites or other companies and organisations can work temporarily. In addition, they create the cultural preconditions for working at work hubs.
Indicator: % of suitable office locations with workstations to which in-house or outside employees from other sites have access.
Target: 100% (by 2020). In addition, reviews are conducted of the extent to which premises can be opened reciprocally within the Exemplary Energy and Climate initiative.

17 Promotion of video and web conferencing
The actors' employees have access to video and web conferencing or, as applicable, corporate collaboration solutions, which make personal exchanges possible over great distances.
Indicator: employees who regularly use video / web conferencing as a percentage of all employees with a suitable job profile.
Target: 30% of the workforce, 70% of the employees making several international business trips per year (by 2020).

18 Incentives for using public transport (PT)
The actors ensure that employees can be reimbursed through expenses for business travel with PT even if they use season tickets they have paid for themselves, and that the expense regulations do not give them any incentive to use their own car. The use of private cars requires approval from one's superior in keeping with clearly-defined criteria, and is only reimbursed with a cost-covering per-kilometre rate.
Indicator: expenses reimbursement for using PT, rules for use of private cars, kilometre rate.
Target: expenses reimbursement of the PT ticket price based on the half-fare travelcard, even if self-paid PT season tickets are used, clearly-defined criteria for using private vehicles, km rate for private cars, max. CHF 0.64 per km.

19 Providing or co-financing PT season tickets
The actors encourage the use of PT for business and commuter journeys by providing a half-fare railcard and / or by making a financial contribution to other PT season tickets (zone, point-to-point or network-wide season tickets).
Indicator: minimum contribution to PT season tickets for employees.
Target: all employees are entitled to a half-fare travelcard or a corresponding company contribution to a PT season ticket.

20 Criteria for choosing mode of transport
The actors introduce a guideline with clearly-defined travel distances for rail or air travel, as well as criteria for using video and web conferencing and corporate collaboration solutions. They provide a simple decision-making tool and cover all international business travel reimbursed via the expense accounts or the travel agency.
Indicator: proportion of air travel to destinations that can be reached by train from Basel, Zurich or Geneva in a maximum of five hours.
Target: less than 20% (by 2020).

21 Active parking space management
The actors charge for employee parking spaces at usual market rates and allocate them using clear criteria such as level of service by PT at place of domicile, time difference between using a private car and PT to travel to work, working hours, participation in car sharing agencies and / or energy efficiency of the vehicle. New sites are planned

with a minimum number of parking spaces.
Indicator: proportion of parking spaces with clear allocation criteria and usual market rates.
Target: 100% (by 2020).

22 Provision of bicycle parking spaces

The actors provide covered and secure parking spaces for two-wheelers and the associated infrastructure (changing rooms with showers). Minimum requirements are, for example, that the spaces should be covered, be near the entrance or have structures to which the bike frame can be padlocked.
Indicator: % of sites (> 100 employees) with a number of bike parking spaces to match demand, as per minimum requirements.
Target: 100% (by 2020).

23 Provision of bicycles and e-bikes

At larger sites, the actors provide self-rental bikes and e-bikes for mobility between nearby sites (e.g. PubliBike stations, company bicycles).
Indicator: % of sites (> 100 employees needing this service) with access to self-rental bikes.
Target: 100% (by 2020).

24 Criteria for procuring energy-efficient vehicles

The actors apply clear energy-efficiency criteria such as the energy label when procuring vehicles. For all new vehicles (incl. delivery vans), the fuel consumption / CO_2 value is weighted as an evaluation criterion with at least 15% in the benefit analysis.
Indicator: % of newly-procured cars with up to a max. of five seats in energy efficiency class A, not counting all-wheel-drive vehicles, intervention vehicles such as ambulances and goods transport vehicles.
Target: 100% (by 2020).

25 Eco-driving training courses for frequent car users

Employees who drive more than 20,000 km a year for business are trained every three years in eco-driving courses. In the case of employees who use the company fleet, the employer supports privately-attended eco-driving courses with a 30% contribution to costs.
Indicator: % of employees driving more than 20,000 km a year who have attended an eco-driving course in the last three years.
Target: 100% (by 2020).

26 Promoting the use of car sharing agencies

The actors provide information on and access to their own or an outside car sharing agency for arranging lifts and to carpools in commuter and business traffic.
Indicator: % of employees who depend on the car to travel to work and who have access at their workplace to a car sharing agency (prerequisite: a sufficiently large number of employees).
Target: 80% (by 2020).

27 Joint use of a company carpool

The number of business vehicles is reduced byinterdepartmentaluse of carpool vehicles. A vehicle management tool is introduced and used regionally.
Indicator: average length of time for which company vehicles are used (not counting intervention vehicles such as ambulances).
Target: vehicles used for < 2 hours per day are incorporated into the vehicle pool.

28 Provision of charging stations for electric vehicles

Parking spaces at larger sites are equipped with charging facilities for ordinary electric vehicles, for example electric cars, electric scooters and e-bikes. In new buildings, plans must ensure the subsequent installation of charging stations for electric vehicles.
Indicator: % of sites (> 500 employees) with charging facilities for electric vehicles.
Target: 100% (by 2020).

Action area data centres and Green IT

29 Full cost accounting of energy efficiency in procurement
The actors assess and select for a predetermined specification their IT infrastructure according to the total cost of ownership (TCO) approach, including energy consumption. Energy consumption must be disproportionally overweighted here, unlike with the purely TCO approach.
Indicator: % of the IT appliances evaluated according to the description of measures in new calls for tender.
Target: 100 % from 1 January 2015.

30 Specifications for new servers and new data centre hardware
The actors systematically call for joint state-of-the-art specifications when procuring new servers and further data centre hardware. The state-of-the-art specifications are based on existing labels (for example, 80 PLUS Gold-Label or ENERGY STAR Programme Requirements for Computer Servers) or standards.
Indicator: % of compliant servers and further hardware in the data centre in new calls for tender.
Target: 100 % from 1 January 2015.

31 Highly energy-efficient data centres
The actors implement the most energy-efficient concepts and technologies in the data centres' infrastructure systems (ventilation, cooling, uninterrupted power supply, lighting).
Indicator: average PUE value (power usage effectiveness) over all of the data centres. The PUE value is defined as the ratio of the total electrical energy consumption of the data centre to the energy consumption of the IT equipment.
Target: < 1.3 by 2030. (In new and larger data centres, smaller PUE values are expected, while best efforts are expected in smaller data centres).

32 Pushing passive cooling solutions in data centres
The actors push the use of energy-efficient passive cooling solutions without cooling machines by using the air-conditioning range permissible for servers as per current standards. As a first measure, in existing data centres with conventional cooling, the cold operating temperature is raised to at least 26 °C.
Indicator: 1st part: existing data centre surface area with temperature > 26 °C; 2nd part: data centre surface area with extended temperature range or with passive cooling.
Target: 1st part: 100 % from 2015; 2nd part: 33 % by 2025, 66 % by 2035.

33 Encouraging server virtualisation in data centres
The actors aim for a high server capacity utilisation. To this end, increasing reliance is placed on server virtualisation and on memory technology (SAN) in the storage area.
Indicator: percentage share of virtual servers: number of virtual servers / (number of virtual + physical servers).
Target: > 85 % (by 2020).

34 Bundling of data centres / outsourcing of IT services
The actors check potential for increasing energy efficiency as part of data centre consolidations.
Indicator: checked potential.
Target: 100 % by the end of 2015.

35 Monitoring and evaluation of new technologies
The actors monitor or evaluate new technologies with energy-efficiency potential and operate a technology board within the Exemplary Energy and Climate initiative.
Indicator: number of technologies evaluated.
Target: at least 1 per year.

36 Promotion of waste heat recovery
The actors promote the feeding of their surplus heat from civil IT production into district heating grids, provided that suitable heat customers exist and a contractor is prepared to take on the project in full. Financing, planning, construction and operation from the heat production site are a matter for the contractor.
Indicator: % use of surplus waste heat.
Target: 50 % by 2030 (data centres of > 250 m^2).

37 Promotion of economy mode at computer workstations
The actors ensure that, when not in use, computer workstations switch to the idle state after a predetermined time.
Indicator: % of workstations with active power management.
Target: 90 % by 2015.

38 Promotion of energy-efficient printing solutions
The actors optimise the number of printers per employee and implement modern printing solutions in the office area, such as the follow-me-printing function. As a result, printer operation is optimised and paper and power can be saved.
Indicator: no. of employees per printer; kg of paper per employee.
Target: 100 employees per printer or at smaller sites a maximum of 1 printer by 2020; 5 kg of paper

per employee per year (= approx. 1000 A4 sheets) by 2020.

39 Promoting reuse of appliances

The actors promote reuse of old, but still-serviceable, equipment by passing on old PCs to specialised companies, aid agencies or by giving them to employees. Equipment that has to be disposed of is processed only by certified recycling companies. (In order to ensure energy efficiency, the actors can define additional criteria, for example that only equipment less than 8 years old should continue to be used.)
Indicator: guidelines for recycling no-longer-used equipment are available.
Target: 100% by 2015.

You will find a detailed description of the measures at www.exemplary-energy-climate.ch.

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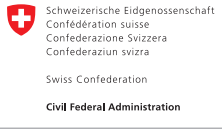
The actors



In the second phase of the initiative starting in 2021, the following actors are represented in addition: PostBus, PostFinance (both previously represented by the actor Swiss Post), Zurich Airport Ltd, RUAG MRO Holding Ltd and SRG SSR.