











Just as the Starship Enterprise ran on an impulse drive, impulses drive us in our lives. When people embark on new endeavours, when they want to change their behaviour, they need impulses. These are not impulses from a miracle machine conceived by science fiction but impulses from politics, business and society.

If the impulses needed to give people their inner drive are lacking, they simply drift through the challenges of their time rather than striving to reach their goals. In this report, our aim is to showcase the impulses the SwissEnergy programme has created in its third decade of operation and to give you the impulse to question and contemplate the energy system of tomorrow and the role of SwissEnergy on this journey.







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IMPULSES FROM SWISSENERGY



Dear readers,

Free will — The Swiss system draws its energy from the creative power of its people, the innovative strength of its businesses and the desire to work together to achieve a goal, despite their many differences. The Swiss system was built to be as stable as the Alps thanks to its federalist structure, thanks to the involvement of all – including and especially of our minorities – and thanks to the balance of power, which rests on the pillars of autonomy and freedom. All of this does not mean implementing fundamental system renovations from above, by decree, but rather combining a multitude of measures to enable society and the economy to adapt to changing circumstances themselves by remaining agile and through continued learning. This includes, for example, the shift in the energy market, Switzerland's new energy strategy, which, on the basis of broad public willingness, will, in the long term, lead to lower CO₂, better energy efficiency and an energy system free of fossil fuels. Free will, not diktat: Over the last three decades, SwissEnergy has created impulses that have demonstrably driven the energy transition forward – using information, concepts, strategies, awareness-raising campaigns, new business models and, of course, money. Money invested wisely to make a big impact. Minergie. Energy Cities and Smart Cities. New jobs, for example in the solar sector. The energy label. The target agreements concluded with the industry. As well as other things that will be discussed in this ten-year report, which not only reviews what has been achieved so far, but also looks towards the prospects for the future. We cannot recommend this strongly enough: our work is not yet done. This cross-generational project is not complete.

Daniel Büchel Head of SwissEnergy "SwissEnergy has created impulses to develop a voluntary shift towards a new market-oriented energy system for Switzerland – a system that will make us more independent, is more environmentally friendly and will provide security of supply."

Daniel Büchel has been the Vice Director of the Swiss Federal Office of Energy (SFOE) and head of the Energy Efficiency and Renewable Energy Division for eight years.



IMPULSES IDEAS AND INNOVATIONS

Courage and determination: the future needs strong roots

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Switzerland's building stock offers a wealth of potential in terms of energy efficiency. For over 25 years, innovative thinkers have been working on the solution, culminating in an extremely effective model that is the result of collaboration.

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From the commitment to develop "energy cities", sustainable quarters and 2000-Watt sites, the Smart City Hub has emerged.

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Funded until market-ready: the idealistic projects of yesteryear have led to the foundation of a company that is setting a trend and has redefined the concept of mobility.

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Sitting on the fence means staying in the same place, persisting with old ways of thinking. The creators of Minergie risked a lot, and now, after more than 25 years of widespread support from politics and the construction industry, Switzerland is reaping the rewards. Today, new buildings need less and less energy. Almost no other project demonstrates in such an exemplary way just how SwissEnergy is supporting bold individuals and institutions that want to design our energy future – until they can stand on their own two feet.

Nowadays, SwissEnergy only supports particular projects. The Minergie Association, which now has its own offices, has been self-supporting for a while, making significant contributions towards an energy-efficient building stock, today and in the future.

Another strong idea was to establish "Energy Cities". Over 20 years ago, thinking about energy efficiency as a locational advantage was just a new idea. Now it is a success story, leading the way into the future. The first cities, such as Winterthur, are trialling networking and digitisation. The Smart City Hub is also fostering a national dialogue about cities and municipalities that are not only efficient, but also smart.

It is not only Switzerland's energy sector that boasts innovative thinkers and companies; promotion also needs innovation. Without promotion, nobody would learn about any of this. Promoting means driving forward – into a Switzerland that is prepared for any economic, energy-policy and technical challenges that the future may hold.

9,5 million litres of fuel saved by Mobility customers every year.

10 million tonnes of CO₂

saved by Minergie since 1998.



150 billion Swiss francs of investments were triggered by Minergie since 1998.



per cent of the Swiss population lives in an energy city.



429 Swiss municipalities have earned the "Energy City" label.

11

European states have adopted the Swiss "Energy City" success model.



Franz Beyeler. Promoter.

People who made Minergie

Minergie has become an established name. The label for energy-efficient buildings and comfortable well-being is 20 years old and now runs almost entirely independently of SwissEnergy support.



"Another green cause!" Zurich's Director of Construction and Swiss People's Party member Hans Hofmann's reaction was instinctively reserved when Ruedi Kriesi, head of his energy department, asked him to establish a label for sustainably constructed buildings under the name of MINERGIE. He wanted time to take a second look at the matter. That was back in November 1996. It took very little time for Kriesi and business economist and brand specialist Heinz Uebersax, who died in 2010, to convince Hofmann with their arguments: connecting this green cause with more comfort and increased property value. By the following summer, the founders were entrusting their brand to the cantons of Bern and Zurich.

IN BRIEF

- Minergie is a collaborative project bringing together the cantons, the Federal Government and the private sector.
- > Minergie is marketed by a broadly supported association with professional management.
- > The label was simple and always involved the latest in technical possibilities with one aim: zero-energy housing.
- > Minergie will also be key in the future to act as a pioneer and testbed for legislation within the cantons, for example.

Collaboration was key Following this, Minergie was set to become a truly Swiss project, with collaboration between the cantons and with the Federal Government together with SwissEnergy as the initial investor. "SwissEnergy has worked hard to relieve tensions between the Federal Government and the cantons," explains Andreas Meyer Primavesi, the current Managing Director of Minergie. It has also made it easier to establish links with the private sector, which was only possible because SwissEnergy follows a different philosophy from the administration. "The outstanding interplay between all the actors involved was crucial for the success of Minergie." It took a second meeting to bring the canton of Bern on board, and thanks to its commitment and the support of the canton of Valais, the rest gradually joined in too.



MINERGIE SMART CITY MOBILITY

IMPULSES



NEW BUILD

Minergie-P-ECO, 2016, 4051 Basel, Minergie no BS-055-P-ECO

Architectural art: the extension of Switzerland's most significant art museum

MINERGIE SMART CITY MOBILITY IMPULSES





had kicked off similar plans arisen through incorporating the Energy Article into the Federal Constitution in 1990 and launching the Energy 2000 programme, the predecessor to SwissEnergy. With the launch of SwissEnergy in 2001, the Federal Government then wholeheartedly switched its support to Minergie, abandoning its own eco-building standards.

The project, finely balanced on the scales of the political spectrum, developed into a success. By its 20th anniversary in 2018, 45,000 properties had been certified in accordance with standards, bearing the "Kriesi Medal", as the plaque was originally, humorously, called. What's more, many buildings are now designed with an eye towards today's voluntary Minergie standard with its various forms, even though they do not have the certificate. Today, Minergie has become an important element of canton energy policy.

There is still work to be done

On the whole, there is still a lot to be done: there are some 1.7 million residential buildings in Switzerland. And the leverage effect of the building stock in terms of climate protection is huge, with almost half of final energy consumption accounted for here. "A drain," says Armin Binz. With this in mind, the architect and long-time technical manager at Minergie poured his energy into promoting energy-efficient buildings, and came up with the Canton Building Energy Certificate (GEAK). "Minergie is a powerful normative force," he says. The cantons will follow through with regulations where the Minergie standards have proven themselves to be effective. They are a supplement to the requirements of the model provisions established by the cantons in the field of energy (known by the German acronym MuKEn). It is an interaction that motivates both sides to strive for high quality and one that Ruedi Kriesi, the founder and long-time vice president and head of the strategy group, is happy to note: "We have achieved our vision of using Minergie to correct the negative perception of energy-saving houses that existed at the time." In his view,



Armin Binz. The architect-engineer.

An architectural giant, he is not – "I'm more of an engineer," he says modestly. He realised this shortly after finishing his studies and decided to follow his eco-friendly conscience, dedicating himself to tackling the "biggest drain" on Switzerland's environmental performance. Having released a few publications that inspired the Minergie founders, he can look back at his life's work with contentment. He may not have founded Minergie, but in his capacity as technical manager, he has played a key role in driving it forward. "It's great to see how far we've come," he says. For him, the secret to success is clear: "On the one hand, the voluntary participation and collaboration from the cantons and the Federal Government, and on the other, the fact that we promoted the latest in technical possibilities."



730.0

vom 30. September 2016 (Stand am 1. Januar 2018)

152

Energiegesetz (EnG)

gestützt auf die Artikel 64, 74–76, 80 und 91 der Bundesverfassung), nach Einsicht in die Botschaft des Bundesrates vom 4. September 2012

1. Kapitel: Zweck, Richtwerte und Grundsätze

1 Dieses Gesetz soll zu einer ausreichenden, breit gefächerten, sichen träglichen Energieversorgung beitragen lichen und umweltver

a. die Sicherstellung einer wirtschaftlichen und umweltver 2 Es bezweckt:

- stellung und Verteilung der Energie: die sparsame und effiziente Energienutzung
- den Übergang hin zu einer Energieversorgung, die stärker auf der Nutzung erneuerbarer Energien, insbesondere einheimischer erneuerbarer Energien,

mindet Richtwerte für den Ausbau der Elektrizität aus erneuerbare

Art 2 Energier rbaren Energien, au Wasserkraft, ist ein Ausbau anzustreben, mit dem die durchschnittlich Produktion im Jahr 2020 bei mindestens 4400 GWh und im Jahr 2035 Bei der Produktion von Elektrizität aus erneuer ² Bei der Produktion von Elektrizität aus Wasserkraft ist eit nittliche inländische Produktion im Jahr mit dem die durchschnittliche 37 400 GWh liegt. Bei Pumpsper

en Zuflüssen in diesen Richtwert Der Bundesrat kann gesamthaft oder für e

AS 2017 6839 SR 101 BBI 2013 7561

Hans Hofmann. Dori Schaer-Born. The politicians.





the financial support from SwissEnergy has been valuable, "but unfortunately, in terms of concept, it stayed well away from the brand's approach, which is why it sometimes strongly promoted competitor products." Yet, this openness from Swiss-Energy did lead to some good results and Kriesi's overall conclusion is positive: "Minergie has awoken a desire for comfortable buildings that also consume less energy, and Franz Beyeler, the Development Phase Director, has implemented that very successfully." He sees the voluntary nature of the project as a key factor – and the fact that Minergie is a progressive building standard that is easy to understand and implement and that everyone can benefit from. Alongside professional networking, communication and marketing have also been crucial. In the canton of Bern, for example, Dori Schaer-Born and Kriesi's counterpart, Ruedi Meier, worked to develop a strong network with professionals and universities.

Technical development does not stand still Minergie has made its mark on technical development in construction, for example developing comfort ventilation systems and new window technologies, establishing heat pumps and, above all, raising awareness of the fact that buildings are holistic systems. Ruedi Kriesi thinks that there is another effect that is equally important: "The characteristics of Minergie have aroused the interest of the industry, and have therefore given even conservative politicians access to this field, which was formerly the preserve of the greens and the left." And by updating its standards in 2017, the brand even gained new momentum: from now on, at least a part of the energy required should be self-generated and heating systems in new builds must run without fossil fuels. However, technically, Minergie will always remain neutral, and therefore open, "and will always observe developments in new building technologies," explains Andreas Meyer. Provisionally, the focus will be on promoting quality when implementing the standards in buildings and operations and on increasing the renovation quota. "Another positive," says Ruedi Kriesi, "is that SwissEnergy is still supporting Minergie on one-off projects, which has led to new, very innovative products." With the Minergie system upgrade, building developers can now compile a solution from a series of modules. "We still have a lot to do in terms of the current building stock," says Andreas Meyer. "Our work will not be complete until every house in Switzerland has an optimum energy balance." Adding: "Until everybody in every house feels at home."

npulses from Minergie

IMPACT 5,000 BUILDINGS CERTIFIED



MINERGIE

SMART CITY MOBILITY IMPULSES

NEW BUILD

Minergie, 2012, 1242 Satigny, Minergie no GE-472

The 11,000 m² logistics building for the International Committee of the Red Cross (ICRC) opened in 2011 in Satigny – an ambitious Minergie construction project.

Smart little towns

The "Energy City" label led to the development of Smart Cities, which have recently come together to form a hub. So, what is a smart city and how are they driving Switzerland forward?

Swiss cities are now discovering their 'smartness' and have sketched out their smart-city strategy. Using all the old favourites, for example, e-government, as well as promoting 2000-Watt sites using fibre-optics. Basel has even selected one of its quarters to be a Smart City Lab: in its Wolf district, tests are currently ongoing to find out what could, one day, bring citizens closer together and make the city more intelligent.

One of the pioneers in this field is the "garden city" of Winterthur. The city recently adopted a strategy for this and made money available for innovations. Here, Digital Officer Christoph Zech looks after the Smart City programme (see box on right) in collaboration with an innovation team formed of representatives of the individual departments and Zurich University of Applied Sciences. This programme is managed by a steering committee consisting of three members of the city council and the CIO, who contributes in an advisory capacity. As of 2019, Winterthur even has a specialist "Smart City" department. Completed and ongoing pilot projects provide examples of just what makes a "smart city" (see illustration on right).

Switzerland's sixth biggest city has a clear strategy for this: using information and communication technologies to unleash the potential in cities, which are responsible for 70–80% of greenhouse gas emissions and two thirds of energy consumption. Encouraged by SwissEnergy, the first Smart Cities have now come together to form a hub.

This digitalisation and networking builds on the development of the "Energy City" label, which has been available for over 25 years. It is the most successful management tool for efficient energy policy within the municipalities, more than 420 of which now have the label, including some of the smallest in Switzerland. The label can be put to good use for area promotion. SwissEnergy also promotes the development of sustainable quarters with a free-to-download decision-making tool. The "2000-Watt site" certificate (2000watt.swiss) is a label for populated built-up areas that represent a sustainable development. In September 2012, Greencity (Sihl-Manegg, Zurich) became the first 2000-Watt site. For several years now, SwissEnergy has been supporting mergers between municipalities to form energy regions with synergy benefits in terms of energy efficiency and renewables. local-energy.swiss

So where does the smart city of Winterthur stand?

Christoph Zech is the Digital Officer for Winterthur's IT services and is responsible for digital transformation.

SwissEnergy: the partnership

"Our collaboration works very well, it's low-threshold and personal. SwissEnergy is a significant driving force behind the topic in the city of Winterthur. The financial support provided for various projects contributed significantly to launching our Smart City initiative – it was originally intended as a contribution to our 2000-Watt goals, but has since gone beyond this to incorporate the subject of energy."

Smart City: the current situation

"We are currently in the pilot phase or proof-of-concept phase with most of our projects. Once completed, these should show what benefits those projects can effectively deliver. At present however, we still need to develop basic infrastructure, which, outwardly, does not yet have any ascertainable immediate value."

Smart City of the future. Derived from Winterthur

city projects.

Smart guarters Designing a new living space with an information and sharing platform, energy cooperatives, coworking spaces, community gardens and many other measures. Smart administration Applying for and approving building permits online or reporting damage via the Stadtmelder [city messenger] app. 11 11 Smart parking Equipping popular getaway destinations with a traffic management system and digital parking space management Smart lighting Intelligent radio-controlled lights with different colour temperatures communicate with each other and are self-regulating. Solar lights work self-sufficiently.



MINERGIE

SMART CITY

MOBILITY

Smart mobility

carvelo2go and urban car sharing schemes, such as BICAR, for journeys from home to the train station: mobility sharing platforms redefine mobility in smart cities.

Smart energy production

For example, waste should be stored in a seasonal fuel storage facility and be used to produce energy during the winter.

Smarter energy consumption

When people know their power consumption and compare themselves against others, they use less energy.

Smart City Dashboard

Using a joint platform, city departments and divisions can provide and call up sensor data, e.g. from motion sensors, climate loggers, traffic radar or noise measurement devices. More data means greater transparency and encourages new projects.

Mobility over time

Mobility, recognisable by its red cars on Switzerland's streets, has become just what SwissEnergy always hoped: an independent company that is now making its own money after its start-up funding and which has brought about a change of awareness in terms of environmentally harmful forms of mobility. Yet it has not always been plain sailing for this company.

Back in 1987, a group of young people fresh from the hotbed of the green alternative scene of the 80s met in the "Schlüssel" restaurant in Stans and founded the "Auto Teilet Genossenschaft", or ATG, a car sharing cooperative. Just 17 days after this memorable meeting, the ShareCom cooperative was formed in the Seebach quarter of Zurich – all without either cooperative knowing of the other's existence. Normal for those pre-internet, pre-smartphone times. Yet economic fate would bring these two cooperatives together, even though they were focussed on different things at the time: ATG on cars and ShareCom on consumer goods in general, from video cameras to cars. Ernst Reinhardt distinctly remembers those initial meetings with the youngsters, with the two organisations, which began working together in their infancy and provided each other's customers with access to their vehicle fleets. They even considered merging on multiple occasions, though negotiations repeatedly failed due to internal disputes.

Collaboration with the Federal Government begins

Within the Energy 2000 programme, SwissEnergy's predecessor, Reinhardt, now 75, was responsible for the "Fuel" division on behalf of the Federal Government and was given the task of increasing energy efficiency in private transport by Federal Councillor Adolf Ogi himself. He soon identified the potential of Auto Teilet. In 1993, he approached then Programme Manager Luzius Schmid with a fully-fledged proposal. Luzius Schmid wanted to know only one thing: would this car sharing ultimately lead to more vehicles on the road? Not at all. Reinhardt's answer convinced him: people would use their cars more consciously, the number of people in the cars would increase and it would win over new public transport users. What helped him here were the studies already available that showed that more conscious use of vehicles leads to fewer cars on the road and greater efficiency. One significant study was carried out by Peter Muheim, who today still works in the field of mobility for the Canton of Bern – demonstrating that some of the most mobilised youngsters from back then have become today's mobility experts. Muheim joined ATG in 1989, later became a member of the executive board and helped shape the cooperative. "Everything was terribly amateurish at the start," he remembers. But the cooperative idea was what really counted; everything was voluntary, at both cooperatives, and yet they were constantly holding each other back. "They were always arguing." Ernst Reinhardt noticed that this was an obstacle preventing the development of car sharing in Switzerland. Together with Monika Tschannen from VCS (Swiss association for transport and environment), herself

June 1987: a bold group from Stans in the Canton of Nidwalden establishes the ATG Auto Teilet, a cooperative that founded car sharing worldwide as part a redefined sharing economy



a car sharing pioneer, he pushed for the two organisations to merge and become professional. And by 1997, they had done just that.

The secret to success lies in control Conrad Wagner, ATG member number 1, founding president and later president of the merger, looks back with pride at how the two cooperatives were the catalyst for a new form of mobility, encouraging people to consider the "intermodal transport chain". Put simply, this was the first time that owning a car, long a symbol of status, began to lose importance. A new form of mobility had arrived, without compromising on comfort, made possible thanks to the SwissEnergy programme. With the resources for more publicity, more professionalism, more marketing - all from its start-up funding. An investment of around 500,000 francs per year made it possible to develop a sort-of national "car park" for shared cars. With time, this allowed even small towns and villages to join the car sharing scheme. Yet Ernst Reinhardt remains modest: "We simply brought everyone together around the table," he says, "today, we'd call it people empowerment." The Energy 2000 and later SwissEnergy projects were controlled from the very beginning by budgets and proof of efficacy. "That took away the politics," explains Reinhardt, "and made collaboration with market partners easier." Mobility is living proof of this: over 32 years, the company has gone from nothing to 3,000 vehicles, 177,100 customers and 1,480 locations. And now, it is independent of SwissEnergy, dominates the market in Switzerland and is viewed internationally as a model for successful and fully functional car sharing. With hindsight, Ernst Reinhardt believes it has been a first class systemic achievement to spread this car sharing scheme across the entirety of Switzerland.

mobility."

growth phase.

Digitalisation

The development of the Mobility dash-

board computer is a good example of successful digitalisation. In the beginning,

the car sharing processes were charmingly

analogue, with ATG key cards, logbooks,

markers, pencils and rubbers. ShareCom in particular was an early adopter, taking on

an electronic telephone-based booking sys-

tem. The "Energy 2000" federal programme

pushed for the two cooperatives to take

a joint approach to dashboard computers

that automatically save journey data. The

result was the "ShareLog" system, which

ShareCom put into operation first. In 1999

Mobility integrated their own vehicle

dashboard computers for the first time,

under the leadership of Project Manager

Transport Network. This marked the end

of the key card and the start of the next

Lorenzo Martinoni, the long-time ShareCom Director, who now works at ZVV, the Zürich



What does the future hold?

The turbulent past of the car sharing setup was probably the first stage of development of this new way of looking at mobility. The two Mobility co-founders and car sharing pioneers, Peter Muheim and Conrad Wagner, are now working on the future of mobility. Muheim talks about system limits that still exist, by which he means the fact that Mobility leases cars, while SBB (Swiss Federal Railways) sells rail services. Yet customers just want to get from A to B. "Mobilution", Muheim's app vision, aims to overcome these limits and unite all means of transport.

Conrad Wagner, who is now a psychologist, market researcher and operator of a "mobility thinktank", talks about a mobility system that breaks with old habits – a new identity with smartphones as the core tool, rather than an identity defined by the car. After all, mobility is linked with other areas, for example advertising, jobs or settlement and city planning. The benefit for society and the individual goes well beyond the journey. "We can therefore envisage this trend towards cost-free

MINERGIE SMART CITY MOBILITY IMPULSES



SmartGridready Smart label for buildings and appliances

Buildings and appliances that operate within a smart grid, in other words an intelligently controlled power network, must have a suitable interface. Jürg Grossen, one of the founders of the new "SmartGridready" label, discusses the networked energy system.

What does the "SmartGridready" label offer?

Jürg Grossen: SmartGridready forms a communication bridge between the appliance sector, the building sector and the energy supplier. It establishes a simple, secure connection between electricity generators, storage units and consumers, and protects you from making bad investments. In the future, all appliances and systems will need to work together and so the aim of SmartGridready is to coordinate the activities of the manufacturers and system providers to work towards this goal.

What is it for?

The electricity networks are being compelled to develop into smart grids with intelligent control over decentralised production. This is the only way to guarantee a reliable and efficient power supply. A smart grid controls local production and consumption, which will make Switzerland's power system more efficient, cost-effective and secure.

You are working with SwissEnergy on this. Why?

Broad support is absolutely central to this. SwissEnergy has proven its ability to firmly establish labels on the market. As soon as the SmartGridready label is available, other manufacturers and system providers will come on board. They will then be able to count on the fact that they are providing their customers with future-ready products. And their customers can be sure that they are investing in the right building technology. smartgridready.ch

energo

27.6

million francs

Thanks to energo's achievements (a competence centre for energy efficiency in buildings and a project partner of SwissEnergy), its customers were able to save a total of 27.6 million francs in 2017, primarily by increasing energy efficiency. This translates into a saving of over 51,000 tonnes Of CO_2 . energo.ch

> Bike4Car Vehicle swap



Hand in your car keys or number plate, pick up an e-bike and away you go! Since the launch of the Bike4Car campaign by climate protection movement myblueplanet.ch, in conjunction with SwissEnergy, around 5,000 drivers have trialled the swap scheme. According to a 2016 assessment carried out by Zurich University of Applied Sciences (ZHAW) and the University of St. Gallen, many of the participants then analysed their mobility behaviour and considered purchasing an e-bike.

swissesco Calculable energy savings



MakeHeatSimple **Remote heating** control

Second homes consume unnecessary energy for heating when empty. With remote control capability, energy consumption can be cut back during these periods by switching to frost protection mode. With its new campaign, SwissEnergy is raising awareness of these smart, network-capable heating regulators among property owners, while also bringing importers and manufacturers to the table.



Whether you are replacing several thousand lights or installing a heat pump system, when renovating energy-intensive public buildings, contracting for energy-saving solutions is a worthwhile investment. Here, an energy service provider guarantees savings and implements a project to this end. The provider also takes responsibility for the facilities. If the provider exceeds its targets, it receives a bonus and conversely, if it fails to achieve those targets, it pays a premium. To help this business model break through, service providers, instigated by SwissEnergy, have come together to form the swissesco association. Energy savings contracting mainly targets public facilities, particularly those that are energy intensive such as swimming pools, schools or hospitals. The model saves operating and energy costs, freeing up the public purse. In this way, expensive investments that tie up resources become calculable contracting costs. swissesco.ch



New ways of car sharing are integrating individual public transport into Switzerland's mobility mix. The provider "Catch a Car", a Mobility subsidiary, is now offering floating cars, in other words, cars that do not have a fixed parking spot. So far, the cities of Basel and Geneva have benefitted from this new offer, with more set to follow. SwissEnergy is offering its scientific expertise to support this innovative business model

IMPULSES **DIALOGUE AND COLLABORATION**

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SwissEnergy is looking for partners in agriculture and other sectors and industries, as only by working together will it be possible to reach the goals of the Energy Strategy 2050. Examples can be taken from across this versatile world of partnerships.

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A collaboration of five universities of applied sciences in Switzerland is offering a joint degree programme in sustainable

ENERGY SHOW 26

But how do you open a dialogue with the population? Expert Marc Muller was co-host of a successful programme co-financed by SwissEnergy and broadcast on Western Switzerland's public television station, RTS. Here, Marc takes stock.

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Close partnership: opening dialogues with the economy and the population

Good intentions may well be noble, but if nobody knows about them, then formulating intentions makes as much sense as having constant ventilation in a Minergie house. To make sure this does not happen, SwissEnergy is designing the energy of tomorrow together with a range of partners that are transforming their intentions into sustainable products and projects, with messages that stick.

Using a very diligent, tried-and-tested process, partnerships develop to meet the transparent goals for the medium- and long-term future. Whether a start-up in agriculture or a television programme that has successfully reached an enthusiastic audience in French- and then German-speaking Switzerland, dialogue is key.

Dialogue with business: numerous companies, associations and universities of applied sciences have, in the past, been given considerable boosts and are today working independently, and occasionally with support, towards an energy future.

Dialogue with the population: Thanks to events such as the Energy Challenge, the public now has exciting opportunities to take ownership of the principles of Switzerland's new energy sector. They are provided with targeted information explaining how they can reduce their energy consumption while maintaining their quality of life. Underlying all of this is the old principle that if you want something to take off across the country, you first and foremost need the right impulses. In dialogue.



430 partners from business, administration, education, consumption and the environment participate in the SwissEnergy programme.

projects implemented every year by SwissEnergy and its partners.

trade show and event attendees

actively took part in the on-site Energy Challenge 2018 launched by SwissEnergy.



70 million clicks and views for the Energy Challenge 2018 in the media partner's platform.



viewers tuned in to watch the series "Aujourd'hui" broadcast by RTS in 2017 and 2018.



Boost

A partnership with SwissEnergy brings well-grounded business models. An example from agriculture.



SwissEnergy enters into technology- and sector-neutral partnerships provided they serve its overarching goal: to enhance and promote voluntary measures to implement the Swiss energy policy, to increase knowledge and skills in energy matters and to test innovative ideas on the market that may even set the standards for tomorrow's legal regulations or make new laws unnecessary.

The detailed plan for 2013 to 2020 describes SwissEnergy's tasks and goals with which any project applications must comply. Once an analysis has taken place and priorities have been set, discussions about possible collaboration can begin. However, SwissEnergy also approaches a potential partner itself if its experts are looking to create targeted boosts and impulses.

for the sectors

Telecommunications Building technology Energy sector Education Wholesale Forestry and agriculture Mechanical engineering Construction/architecture Automobile/transport Electronics Hotel/restaurant trade

for agriculture



Even agriculture is not immune to climate change: people who work with nature and create value from it really want to look after it. "This is borne out by the increasing interest from farmers in sustainability and protecting the climate," explains Fabienne Thomas, Deputy Manager of the Production, Markets and Ecology Department of the Swiss Farmers' Union. At the same time, consumers are increasingly on the lookout for this. This has led to an increase in the proportion of renewable energies used in agriculture over the years, although the potential is still large: it is estimated that by 2030, agriculture will be using 1234 GWh of solar energy and 421 GWh of biomass energy per year, with a similar amount from wind energy, which is barely used today. Here, as Simon Gisler, managing director of AgroCleanTech, an agricultural sustainability and energy efficiency consultancy company organised as an association, explains, farmers are being thoroughly pragmatic and want to optimise their costs to face tough price competition. Energy costs still account for eight per cent of their outlays. And the need for self-produced and self-consumed energy is expected to rise in future with, as Simon mentions, increasing robotisation and electrification of mobility coming to the agricultural sector as well.



WORLD OF PARTNERSHIPS

SUSTAINABILITY ENERGY SHOW IMPULSES

Surviving the early years

AgroCleanTech, based in Bern, has received significant support from SwissEnergy. Recently, however, the agreement under which financial aid was provided to drive forward the establishment of the energy consultancy company for farmers, with the help of the Federal Office for Agriculture and State Secretariat for Economic Affairs (SECO), came to an end. As Managing Director Simon Gisler explains, one of the most significant goals has been reached: "We are now independent and are funding ourselves with capital from the private sector." He goes on to say that the aid from the Federal Government has conditions attached and that the requirements in terms of proving the efficacy of the measures and the new products were high. "This partnership was not only beneficial financially, but also at a content and business level," says Gisler. "We have grown thanks to this support!"

Overall, the agricultural, not-for-profit start-up received half a million francs in aid, which it used to develop its provision of information including a website, workshops and an annual conference as well as an energy and climate check (energie-klimacheck.ch) for the agricultural sector. It increasingly provides advisory services, answers an ever increasing number of queries, mostly about energy efficiency, and contributes to climate protection and energy efficiency measures in agriculture. In 2017, it also received numerous questions about producing renewable energies. These make up around a third of all enquiries received. "Questions on climate protection are on the increase," acknowledges Simon Gisler, "given that under the new CO₂ law, the agricultural sector is also bound by a greenhouse gas emission reduction target." In Simon's view, there is still a lot to do, in terms of nitrogen efficiency using climate friendly fertilisers for example, and in terms of reducing fossil energy sources.

Mastering the future one project at a time

Given today's low energy prices and the lack of financial incentives from the energy market, raising awareness has, according to Simon Gisler, become one of the most important targets. And that target has been reached. "Where politics focuses on voluntary measures, awareness is doubly important!" Now, AgroCleanTech wants to develop new services, for example an energy consultancy service adapted for agriculture, in collaboration with PEIK (peik.ch), another project supported by SwissEnergy. The AgroCleanTech adaptation needs to be low-threshold and simple. And cost effective. For this and other projects, Gisler and his small team apply for assistance, including from SwissEnergy, which carries out a careful assessment to ascertain whether the desired impact can be achieved with the funds provided. "The submission is a time-consuming process," explains Simon Gisler, "and there are a few advance services required of us, including advance payments." The energy consultancy project is well on its way and Gisler is hopeful of a positive decision from the bodies to which applications have been submitted. And AgroCleanTech is also contemplating another innovative idea, namely supplying electricity meters to farmers, whose data would then be handled by specialists who are best placed to understand the farmers' processes and challenges for drawing energy from nature in the form of foodstuffs.



"Convinced by the quality



From materials to ventilation optimisation

Students following this master's course in sustainable building can compose their own training programme from a variety of modules. These could include, for example, material flows when building, indoor climate or operational optimisation. The latter is extremely important as many new buildings are not run as efficiently as is theoretically possible. In a wider sense, this could be seen as a construction defect as people are not given correct instructions or systems are not properly run. Yet, people are hardly likely to notice when their heat pump doesn't run efficiently, unless they are checking. enbau.ch

No sustainable building without standards

Standards are the basis for buildings. For this reason, many of the regulations and laws in force refer to standards. In Switzerland, the Swiss Society of Engineers and Architects (SIA) develops all the standards that are of vital importance for construction as well as some for sustainability and energy efficiency in construction. The society's specialists work on a voluntary basis, with SwissEnergy providing financial support for specific projects, which significantly speeds up the development of standards. After all, even the best training is of little use if there are no generally recognised standards for the state of the art to accompany these more efficient buildings.

job," Altenburger explains. sense of the word.



WORLD OF PARTNERSHIPS

SUSTAINABILITY

ENERGY SHOW IMPULSES

sustainability when building

Without the right skills, it will not be possible to renovate the energy system. And it is in universities of applied sciences that these skills are born. With SwissEnergy support, five universities in Switzerland (University of Applied Sciences and Arts Northwestern Switzerland, Lucerne University of Applied Sciences and Arts, Bern University of Applied Sciences, Zurich University of Applied Sciences and Chur University of Applied Sciences) have joined forces to develop a joint study course. Professor Adrian Altenburger of Lucerne University of Applied Sciences and Arts believes that this brings many advantages: "Each university has its own distinct core skills and, in this alliance, can focus on its own strengths". He also explains that, as the universities are organised at canton level, there was always a risk that they would not harmonise and would not be able to develop universally recognised solutions and courses. "But thanks to our collaboration with SwissEnergy, we have created a programme that works across Switzerland." And of course, the construction industry also benefits from coordinated further study: "When looking to employ specialists, companies and building developers do not need to search through dozens of similar courses to find the most suitable person for a specific

The Master of Advanced Studies (MAS) in Sustainable Building is a postgraduate course for active construction professionals. It not only teaches the latest expertise in sustainability and energy efficiency, but also promotes interdisciplinary understanding between the individual fields, which is key when planning and constructing sustainable buildings. Since its launch in 2007, 254 students have already been awarded the MAS. This high number is important as this postgraduate course depends on volumes; only with very high numbers of graduates will the effort ultimately make an impact in the form of more efficient buildings. This is sustainable investment from SwissEnergy in these people's learning - in the best





«Aujourd'hui» – Romandy's must-see eco TV

The relaxed programme with Jonas Schneiter and Marc Muller draws in the crowds.

Aujourd'hui ("Today") has become a cult classic in Romandy. The relaxed programme on Radio Télévision Suisse (RTS) with ecologist Marc Muller and presenter Jonas Schneiter is a fun "road movie" series that discusses the opportunities of ecological living. The programme's running gag and silent hero is an electrified 1970s VW Transporter fitted with solar cells that the two presenters use to quite literally travel from subject to subject. The programme is not just about electricity and solar energy; it also looks at waste prevention, reparable computers and a Geneva start-up that, for just a small fee, repairs shoes so they look as good as new. The programme is now in its third year and has made a real name for itself. Up to 600,000 people tune in to watch Muller, the enthusiast, and Schneiter, the sceptic, as they criss-cross the country in their cool electric Transporter, picking up guests along the way and then suddenly stopping in places where our energy future has already started, for example a hydroelectric power station that produces hydrogen for fuel cell cars.

"What we're doing is called "positive ecology" in Romandy," explains Marc Muller, a former employee of the Swiss Federal Office of Energy who has himself developed energy self-sufficient houses. When he first crossed paths with Schneiter, Jonas said: "Ecology is good and right, but there is always an aspect of sacrifice and austerity. And that's not fun for anyone".



Limitless energy

Energy Challenge: fun and games all about energy. 2018 saw the third Energy Challenge held at five different venues across Switzerland. The objective of the challenge is to "gamify" saving energy, to change behaviour through games. Together with partners, games and sporting challenges are held about all things energy. The aim of the Energy Challenge 2018 was to reduce energy consumption by 30 million kilowatt hours. In practical terms, this means a family of four would need to consume 20 per cent less energy. Throughout the challenge, one family was given tips and tricks to reduce their personal consumption – and then reviewed at the end to see if they had reached their goal.

240,000 francs flowed in.

And this is precisely where "Aujourd'hui" makes a big difference – by bringing fun to ecology. That's what reaches out and attracts people. The projects shown in the episodes get a real boost: the young cobblers from Geneva, for example, were overrun with new customers soon after appearing in the programme. And the town of Delémont, which, thanks to citizen funding, has been installing large solar plants on its buildings for several years and feeding the power into the municipal network, was also able to fund a large, new plant following its appearance on the programme. Just one day after Muller and Schneiter presented the project,

The third series has seen the programme up its game: each episode now last 42 minutes and occupies a Saturday evening prime-time slot. It has an accompanying radio show in which listeners can ask questions. The project is also actively followed on social media. A similar concept has now been launched on Switzerland's German-language television, but is not yet enjoying the success of its counterpart in Romandy, where the show even seems to be bridging entrenched ideological divides, seen, for example, in emails that Muller receives from viewers saying: "I don't like the greens, but your show is great". rts.ch



Expertise for the energy future of the construction industry

Swissbau is one of Europe's biggest construction trade shows and the largest in Switzerland. Over five days every two years, the Swiss construction industry's central meeting place in Basel plays host to around 1100 industry exhibitors, welcoming over 100,000 visitors. The event offers them the opportunity to gain a comprehensive overview of the market and get to know a range of new products and services. As discussion and dialogue develop, exhibitors, associations, institutions and visitors can share expertise and network – and it's no different in the Swissbau Focus event and networking platform, which puts on around 70 events. SwissEnergy is the leading partner of Swissbau Focus and holds a variety of events there. SBB school train

The funds provided by Swiss-Energy for education and training since 2015 have amounted to between six and seven million francs per year. The support available ranges from the Master's study programme to the learning opportunities offered to primary schools. The SBB school and adventure train is a real highlight. Since 2003, this classroom on wheels, with its Energy Carriage from SwissEnergy, has inspired over 12,000 classes for over 230.000 children with its experienced-based learning.

Avenir Mobilité | Zukunft Mobilität

Let's talk about mobility

"Avenir Mobilité | Zukunft Mobilität" is a dialogue platform for intelligent traffic. The platform seeks to intensify the exchange of knowledge and the mutual collaboration between the various stakeholders involved in transport and mobility policy. This holistic perspective should help to foster discussions about and drive forward progress of medium and long-term solutions. SwissEnergy is supporting this discussion platform with the aim of promoting discussion between business, science and society, developing new approaches for sustainable and energy-efficient mobility and, where possible, launching joint projects.





Communication

Three questions for

VALÉRIE PECALVEL

Owner and strategic manager of FRANZ&RENÉ, a communications agency that has implemented numerous projects with and for SwissEnergy.

How do people change their behaviour?

There is not just one way to communicate. In fact, there are various possibilities: demonstrating positive behaviour, emphasising the influence of the individual as part of a whole or creating a shock, to name just a few. There is no right or wrong. What's important is to analyse your target audience and understand their psychology.

How can we instil the complex messages of the Energy Strategy 2050 quickly and permanently?

By simplifying them. Every day, we work to convey complex messages using simple wording that speaks to everyone. A clear message that states the drastic consequences – and without pointing the finger at anybody. It's often a balancing act.

What was your greatest success working on behalf of SwissEnergy and why?

It's not really a question of a biggest success, more the many challenges involved in the countless subjects connected with saving energy. 2011 was definitely a special time: we launched the new umbrella campaign for SwissEnergy with a new mascot and with Federal Council Member Doris Leuthard.



Energy is money

PFIK

PEIK, the energy efficiency platform for SMEs, is the name in professional advice for small and medium-sized enterprises on all energy matters. PEIK was launched in 2017 by SwissEnergy and supports companies in finding economically attractive energy optimisation opportunities in their operations, which can then be implemented across their businesses. For example, an SME may be able to reduce its energy costs by 10–15 per cent by taking simple, immediate action. **peik.ch**





Special Edition

With circulation of over 1.2 million, SwissEnergy's once or twice-yearly energy newspaper for private home owners has been providing information on trends in building renovation, use of renewable energies and mobility since 2008. Homeowners can also learn about solutions and subsidies in their local area, as well as tools developed by SwissEnergy. Each issue brings more enquiries and increased orders.

energieschweiz.ch/zeitung

IMPULSES **TOOLS AND KNOWLEDGE**

SOLAR ENERGY 32

Switzerland is able to cover a large proportion of its energy needs using photovoltaics. In order to access the full potential of this energy source, a range of tools and training opportunities have been created in recent years.

ECODRIVE 34

How can I drive fuel-efficiently in a petrol car? One instructor explains how EcoDrive is encouraging her students to drive more sustainably.

MORE IMPULSES 35



Useful tools for switching to new energy technologies

If you want to stay on course, you either need a clear view of the stars or a compass and sextant. Using these old tools is now a skill that has to be learned and practised as the need for them declines. And just as in seafaring, digital technologies have also taken hold in Switzerland's new energy sector: houses now have heat pumps and batteries installed in their cellars rather than oil heating systems, while state-of-the-art, glare-free, high-efficiency panels on roofs and façades provide electricity. In summer and winter.

This needs a new way of thinking. New starting points. New data and new tools to make it easier to access this domain. For this very reason, SwissEnergy has developed an entire toolbox to help private individuals and professionals access solar energy.

"EcoDrive" is another particular success. Launched over 10 years ago, this method of fuel-efficient driving has long been a feature of driving lessons and is now a mandatory part of further driving training once students have passed their test. It has even had a lasting impact on driving instructors.

This all goes to show that with the right tools and instruments, we can set a safe course for the future.

building energy certificates issued in Switzerland since 2010.



464,000 vehicle energy checks carried out by Swiss garage owners for their customers, saving 56,000 tonnes of CO₂.

using the training opportunities offered by SwissEnergy each year.



solar experts trained in Switzerland every year.



15.000 test drives in fuel-efficient vehicles offered by SwissEnergy since 2011.



A solid foundation for solar energy

Around half of Switzerland's energy needs could be covered by solar energy. For this reason, SwissEnergy is working with partners to do everything in its power to make the sun Switzerland's second largest energy source, after hydropower.

Simple steps towards your own PV panels

Simple tools that make it easier for homeowners to access photovoltaics and solar thermal energy are a central element of the SwissEnergy strategy to work with its partners to draw on the free potential of the sun. Just seven steps, each with its own tool, are all it takes. The first step involves checking the building's potential on sonnendach.ch or sonnenfassade.ch. Further tools are also available to determine how high your personal consumption could be and the profitability of the future solar installation. In the fourth step, SwissEnergy experts provide a free assessment of three offers from professionals in the solar industry. Thousands of people have already benefited from this. There are also sample letters and forms available for registering your interest with your municipality, canton and insurance company. An overview of the subsidies and compensation brings us the final step: operating and maintaining the system. For this step, a partner is on hand with quality tests and a brochure to reduce operating costs.

energieschweiz.ch/meine-solaranlage

Investment and return

SwissEnergy provides decision-making tools on its website at energieschweiz.ch and in its various brochures. You can, for example, learn what the one-off payment for small and large systems is about and how to get subsidies from your canton or municipality. SwissEnergy also presents the business models available on the solar energy market and provides information on selling the solar power produced to an energy provider. Purchase is guaranteed and you are also entitled to subsidies and compensation from the Federal Government. Another option is to lease large roof areas, for example on commercial buildings, to an energy provider to install a photovoltaic system, which then becomes the building owner's property once the agreed lease period has expired. energieschweiz.ch/oekostromvermarktung

The cost-covering feed-in tariff (KEV) and other schemes have led to a huge surge in solar energy. This has created an interesting business segment for this developing industry. Today, 72,000 photovoltaic systems cover just under 2.9% of Switzerland's energy consumption. With a large number of start-ups in the sector, training and quality assurance are now of great importance. SwissEnergy's partners are standardising and coordinating the training activities provided by industry associations, training centres and the solar industry, thereby guaranteeing their guality. The "Solar Pros[®]" label from Swissolar is one example of the quality seals available. SwissEnergy is currently working to integrate training as a "Solateur" into the Swiss vocational and professional education system. swissolar cl



Training solar professionals

Enlightening messages

Many myths have emerged over the history of solar energy, which is why SwissEnergy launched a national campaign to correct some of these prejudices – with great success. For example, solar plants are today seen as anything but ugly: developments in panel technology are giving architects a huge amount of design flexibility. SwissEnergy is working with the architectural magazine "Hochparterre" to raise awareness of this among architects - finally, a beautiful PV system will speak for itself. But sometimes this is just not enough: for example, more information is needed, in all forms, including traditional paper brochures. SwissEnergy is therefore providing specific support to its partners in producing analogue and digital media to embed solar energy in the Swiss economy and society.





Rolling instead of racing

Driving style has a major impact on consumption. With EcoDrive, the aim is to train people to drive further using less fuel.

EcoDrive means looking ahead instead of reacting suddenly, relaxation instead of stress, rolling instead of racing. And all that, without slowing down. The programme, supported by SwissEnergy, works with driving instructors and course providers to organise courses and other activities to teach participants how do drive fuel-efficiently. Simply driving more consciously could save around 600 million litres of fuel every year in Switzerland – just under 10 per cent of total consumption. The training programmes are aimed at all drivers, not just learners, because, whether you drive for business or privately, modern vehicle technology requires even experienced drivers to adopt different behaviours than they have previously learned. There are even training courses for truck drivers. And as an added bonus for everyone: EcoDrive does not only save energy: by instilling a safer driving style, it also reduces the number of accidents.

In Switzerland, there around 5.5 million people with a driving licence. Since 2007, around 20–25 per cent of those drivers passed their test having been taught the latest EcoDrive ways of driving. These activities have been very successful, yet the potential for further improvement is still huge. And that potential will only grow as we move towards electric vehicles. The average Swiss vehicle is 8.5 years old, so, while this does mean that the majority of people will continue using traditional vehicles for quite a long time, there is also considerable potential for EcoDrive with alternative drive types. In electric vehicles, for example, EcoDrive immediately pays off with greater driving range. And even with the trend towards more and more assistance systems, humans and their driving knowledge will, for the time being, remain the deciding factor when it comes to the efficiency of their driving. ecodrive.ch

>>>> Eco-friendly is the way to go

K Most young people who come into a driving school or take the obligatory further driving course for newly gualified drivers are already aware. In the past, it was a struggle at times, but nowadays, recycling and the environment are a school subject, and many parents are now trying to lead by example when it comes to showing their children how to behave in an environmentally friendly way. Environmentally friendly and cooperative driving are core areas of the further driving courses. However, driving examiners are now even looking for smooth driving in driving tests. Of course, there are some instructors who do not place much value on eco-friendly driving. But when they find more and more of their students failing their tests, they will soon take note. So it should take care of itself.

Naturally, there are some students who want to drive permanently in low gears. Some of them are used to practising their driving with their parents, who teach them to use engine breaking. My response is to ask them how they ride uphill and downhill on their bikes. And whether they race up to a red light like a fool and then end up slamming their foot on the brake. Of course they don't! Well, just as with a bike, you should drive a car in a way that lets you travel as far as possible, using as little power as possible.

Sometimes I ask them: "Why do you want to use the low gears? Why don't you want to look ahead and let the car roll to a stop?" The digital fuel consumption displays are also really helpful here. Some students are not even aware that they can set the display in their cars. So we show them how to do it. Most of them think it's easy and many discover a passion for using as little fuel as possible. They start a sort of competition against themselves. And what's more, training to be an EcoDrive instructor has even led me and my husband to adopt a more sustainable lifestyle. >>>

> Yvonne Gasser, 63, certified EcoDrive and seniors' driving course nstructor, Homburg (Thurgau)

Canton Building Energy Certificate (GEAK)

The energy label for houses



The Canton Building Energy Certificate (GEAK) is to houses what the energy label is to electrical appliances: it shows a building's energy performance and rates properties in terms of their overall energy efficiency. The GEAK also gives recommendations for concrete measures. In 2012, the GEAK Plus was added to the programme: this includes an advisory report with a schedule of measures and a cost estimate and it entails a discussion with the builder.

In the construction sector, SwissEnergy is working closely with the cantons and supporting the measures they are taking, for example, in developing ambitious building standards and enhancing the GEAK system. geak.ch



AutoEnergieCheck

Driving sustainably

The AutoEnergieCheck [vehicle energy check] was developed by garage owners of the Swiss Automobile Trade Association together with SwissEnergy. The check can reduce fuel consumption by up to 20%. To increase awareness of the AutoEnergieCheck, SwissEnergy lent its support to a campaign rolled out in winter 2017 in German-speaking Switzerland and Romandy featuring cross-country skiing champion Dario Cologna. Appearing as a fuel attendant, to name just one example, the 2012 Swiss Personality of Year and four-time Olympic gold medallist offered tips for sustainable driving. But was it successful? Within eight weeks, almost 40,000 people had taken an in-depth look into the AutoEnergieCheck on the campaign website. autoenergiecheck.ch







Wind Atlas

Where is the best place to set up a wind turbine?

The Wind Atlas of Switzerland, commissioned by SwissEnergy, provides information about the annual average of the modelled wind speed and direction at five different heights above the ground. This makes it an important instrument for wind turbine planning. In Suisse Eole, SwissEnergy has a partner that supports the cantons and investors when planning wind turbine projects and helps them to increase and consolidate the public's acceptance of turbines. windatlas.ch

IMPULSES AUTONOMY AND EFFICACY

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Thanks to the voluntary target agreements with the Federal Government and collaboration with the Energy Agency of the Swiss Private Sector (EnAW), Feldschlösschen brewery is now able to implement continuous production process optimisation.

ENERGY LABELS 42

Manufacturers voluntarily launched an energy label for coffee machines, together with the Federal Government and SwissEnergy – with remarkable success.

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No pressure: solutions for business and consumers

The target agreements established between the Federal government and companies are an important tool for achieving energy efficiency in all sectors of industry. Companies should be given the room they need to implement effective measures to optimise processes and achieve a profit along the way.

Here, SwissEnergy helps companies with specific projects and services, as well as close cooperation with industry associations, such as Swissmem or asut. This has made it possible to significantly increase the energy efficiency in data centres, for example. And all on a voluntary and independent basis.

This shows that implementing energy-saving measures does not need legal pressure, but merely an awareness of the profitability those measures can bring. In coffee-loving Switzerland, for instance, this has led to the development of an energy label that represents one of the few special solutions developed in the country. This cooperation between manufacturers, associations and SwissEnergy came about voluntarily and without pressure, with spectacular results: almost all coffee machines are now class A in terms of energy efficiency.

And this is not only the case for Swiss coffee machine manufacturers, but also small and medium-sized enterprises, which are now seeking advice and obtaining analyses, for example via a pinch analysis (energieschweiz.ch/pinch). In this way, people learn which gears to pull to progress further with less energy.

9

per cent

less energy consumed by Switzerland's stock of electronic appliances since 2002, despite growth of 40 per cent.



500,000 tonnes of CO₂

saved by Swiss companies since 2001 thanks to target agreements with the Federal Government.



per cent of the Swiss light market now covered by LED, the most energyefficient light technology.



per cent

of Swiss electricity generated by providers that voluntarily submit to industry benchmarking for greater energy efficiency and renewable energies.

11111111111 Thomas Janssen (left) on a visit with EnAW consultant Othmar Arnold.

For several years now, the Feldschlösschen brewery has been making efforts to save energy and reduce its CO₂ emissions, and today, the company is seen as a model operation – in part thanks to its voluntary target agreements.

A gentle aroma of malts hangs in the air. The brewery itself, built to look like a castle in Rheinfelden (Aargau) can be seen from miles around. The high chimney and many turrets are characteristic of the historic Feldschlösschen complex that gives its name to the beer that has been brewed there for over 100 years. Thomas Janssen moves through the narrow passages between the buildings and the laby-rinthine corridors within as if in his own home. The current Head of Technology and Environment has been working at Switzerland's largest brewery since 2002, and his role also includes energy management.

Binding obligation

Feldschlösschen is one of Switzerland's model companies when it comes to optimising energy consumption. The company voluntarily signed up to an agreement for this purpose back in 2004. And in 2008, it entered into an obligation with the Federal Government for the first time to reduce its CO₂ emissions. "Although this obligation was entered into voluntarily, once you enter into it, it's binding," says Thomas Janssen. In setting its goals, Feldschlösschen seeks advice and support from Othmar Arnold from the Energy Agency of the Swiss Private Sector (EnAW). Arnold takes a look at the situation analyses and discusses possible measures and goals with Janssen. This often involves a range of different ideas that, individually, make a lesser or greater impact, but which altogether make a real difference. Arnold also explains the legal environment and the framework conditions, and reviews how effective the measures are. The two men are in regular contact throughout the year, sharing information on how the measures are progressing. But not every idea can be implemented: "It's always a balancing act between energy efficiency and profitability," explains Janssen. "The bottom line is whether or not something is worth it." Each investment





"We are always on the lookout for little production process optimisations. But we're not exactly reinventing the wheel here – this is what we do every day."

Thomas Janssen, Head of Technology and Environment, Feldschlösschen



TARGET AGREEMENTS

ENERGY LABELS IMPULSES

should pay itself off within about five years. If the project phase shows that an idea is on the wrong side of profitability, the project is stopped and put to one side. In Rhäzüns, for example, the company considered switching its heat source from oil to wood chips, but soon saw that it would be around 20 years before the investment paid off. One measure that was successfully implemented was recovering pure alcohol used in manufacturing alcohol-free beer. "Now we use it to run one of our three boilers." This means that about a quarter of its heat is now produced carbon-neutrally. In Arnold's view, when calculating profitability, it's a question of how to fund the investments. Here, it's also important to take into account the pure costs of the energy and the CO₂ emissions that are avoided. By marketing with "carbon-free generation" certificates, it is often possible to significantly increase the profitability of energy-relevant projects. As Arnold explains: "In our experience as planners, many large-scale projects to increase energy efficiency are just not economically feasible without these certificates."

In Janssen's view, the Swiss framework conditions are a good way to promote energy efficiency. Over the past few years, more than 30 measures, some large, some small, have been successfully implemented. Among the smallest was switching the lighting to LED technology, while one of the largest was building the Rheinfelden Mitte heat network. "We think it was quite unconventional and bold," says Janssen. It was a question of reusing as much of the low-temperature waste heat generated in the brewery during the cooling process as possible and compressing it using high-pressure heat pumps in order to heat large parts of buildings in Rheinfelden old town. As a result, the underground passageways of the company's numerous buildings not only host the technology to manufacture beer and other drinks but also to increase energy efficiency. Waste heat storage facilities and high-pressure heat pumps can convert warm wastewater at 20 to 25°C into hot water at a temperature of 70 to 77°C. And waste heat from compressed air is even reused, meaning the heat is recovered.

Power consumption significantly reduced

Feldschlösschen is also investing in renewable energies. One of its recent additions is a new fuel management system in its heat supply equipment. The majority of the machine drives in the bottling plants are equipped with a frequency regulator and high-efficiency gear motors. "This measure has significantly reduced running times and led to a huge power saving." Now, the machines need just 10 per cent of the energy that they needed before. In Janssen's view, the constant efforts made by the company are backed up by clear commitment from the management committee to autonomy and responsibility. And of course, these measures have a secondary effect on the company's reputation. "But, ultimately, the investments are always assessed against economic criteria." They're always on the lookout for further improvement opportunities: The ultimate goal is to be a carbon-neutral brewery, after all.

"The Feldschlösschen example shows how. over time, voluntary measures become *a corporate obligation* to increase energy efficiency and prevent CO₂ emissions."

Othmar Arnold, EnAW consultant



The historical Feldschlösschen brewery is planning measures that also incorporate the wider region.



Thomas Janssen (right) and Othmar Arnold working in close cooperation

> Option derived from the target agreement: CO₂ reduction obligation with tax exemption

So how do target agreements work?

Major energy consumers can enter into target agreements with the Federal Government to strive for greater energy efficiency. These targets are implemented and monitored via Cleantech Agentur Schweiz (act) and EnAW. The agreements are designed either as voluntary target agreements or as obligations leading to exemption from the carbon tax. Qualifying companies may also be entitled to a network charge refund.





ENERGY LABELS

IMPULSES

TARGET AGREEMENTS

Current situation and potential analysis **Profitability calculation**

Determining the required target figures

Concluding a target agreement with the Federal Government to increase energy efficiency

Optional integrated emissions target: project to reduce emissions in Switzerland



Feldschlösschen's ultimate aim is to be a carbon-neutral brewery, but the measures taken along the way must always be commercially viable.



TARGET AGREEMENTS

ENERGY LABELS

IMPULSES

V-Zug AG Stephan Keller, Director Technical Division



"V-ZUG has enshrined energy efficiency as one of its areas for innovation research. The energy label targets give it better results in a competitor comparison, lead to technological advances and therefore are both beneficial for end users and contribute to sustainability."

Dipl. Ing. Fust Ltd. Susanne Benz, Category Manager



"The energy label gives us direction and makes it easier to explain the advantages of more energy-efficient appliances in advisory discussions. The label has significantly increased customer awareness of energy consumption."

Lenkerhof gourmet spa resort Gernot Brendle, Head of Finance/IT



"As an ISO 14001-certified company that is also exempt from the Swiss CO₂ levy, our priority when purchasing new electronic appliances is always on increasing our energy efficiency. We therefore rely on the customary energy labels and our technical partners."

No cold coffee

In the past, coffee machines were real energy guzzlers. But with the energy label, all that has changed. A prime example of Swiss collaboration. Total energy consumption for coffee machines



Many people don't even leave the house before they've had a coffee. Coffee machines are now, quite literally, part of the furniture. In Switzerland, three million appliances pump water through capsules or firmly pressed powder, consuming 400 million kilowatt-hours of energy in the process. That is a lot! But over the last few years, these appliances have become more and more frugal, in large part due to a colourful label that shows the energy efficiency class of the appliance.

"The energy label is one of the most effective tools for energy efficiency," explains Eric Bush, Managing Director of SwissEnergy partner Topten. The secret to its success lies in the fact that it creates transparency. It provides consumers with information that helps them choose an appliance without basing their decision solely on the purchase price. "The energy label has become an important selling point," says Diego de Pedrini, Managing Director of FEA, the Swiss industry association for electrical appliance manufacturers for households and trade.

Efficiency and cooperation

The energy label is not a Swiss invention, but can be traced back to two EU regulations from the 90s. The energy label for fridges and freezers was made mandatory in 1996, and was later rolled out to other appliances, such as washing machines, tumble dryers and lamps. And of course, the label then appeared on a voluntary basis in Switzerland. However, it was estimated that only 10% of appliances had the label, which was not very transparent, and it was therefore made mandatory in Switzerland in 2002.

SwissEnergy took care of coordinating with the EU and Switzerland's domestic industry and of developing its own labels, which are not yet mandatory in the EU but have achieved resounding efficiency success. The energy label for coffee machines is just one example. This idea was launched back in 2006 by energy efficiency agency S.A.F.E. and Topten. At the time, coffee machines were consuming around 180 kWh every year. Together with the industry association FEA and manufacturers such as Jura and Saeco, a standard consumption concept was then designed for all systems, whether fully automatic, piston machines or capsule systems, and the energy label was finally launched in 2009.

A stimulating energy label

The energy label for coffee machines was a real Swiss solution, the result of constructive collaboration between the Federal Government and business. As Jürg Berner, Specialist Delegate for FEA, puts it: "The impact was enormous!" Manufacturers worked to make their machines fit for class A and today, good coffee machines consume less than 50 kWh per year. The industry association is convinced of this label, which was made obligatory in 2015, yet Diego De Pedrini still sees its introduction as a real feat. It is important, he says, "that Switzerland stays in sync with the EU". Special solutions specific to Switzerland would, in his opinion, only make appliances more expensive and reduce the range of efficient appliances on offer.

In the meantime, the EU has busied itself reorganising the energy label and tightening the criteria to re-standardise class A, as the many + symbols show just how innovative manufacturers can be when it comes to energy efficiency. Eric Bush believes that "the energy label has been a real motivator". Or a stimulant, like coffee.



The EU sets the pace, from which Switzerland rarely deviates. In the case of coffee machines, SwissEnergy developed its own solution together with the manufacturers.



The energy consumption of coffee machines was reduced by two thirds.

2018





Energy future shelved

The "training initiative" launched in 2014 at the instigation of 18 associations in the construction industry was intended to coordinate the further training they provided in the areas of energy efficiency and renewable energy in the building sector. The goal was to speed up the transfer of knowledge and combat the lack of specialists in the construction industry, all under the motto "We are building our energy future". SwissEnergy developed an implementation concept for this.

However, by 2016, it was apparent that the associations involved were not sufficiently willing to work together to establish an inter-association setup for further training. As commitment from the partners involved was an essential prerequisite for success, SwissEnergy consulted the associations and decided to suspend the project. This approach

proves that SwissEnergy works carefully with the resources deployed and will only pursue projects if they have realistic chances of success.



"By replacing one of its pumps, Swiss Quality Paper is now able to save 495.000 Kilowatt hours of electricity per year – the equivalent of 50 per cent. With electricity prices at around 10 centimes per Kilowatt hour, this equates to around 50,000 francs per year."

ProEPA

Burkhard Wombacher, Head of Technical Sales and QA at Swiss Quality Paper AG, Balsthal

Swiss Quality Paper is one of three pilot companies taking part in the cross-sector "Programme for Efficient Pump Systems" (ProEPA). With ProEPA, SwissEnergy is addressing the high energy saving potential in pumps, together with Swissmem, the industry association for the Swiss machinery, electrical and metal industry.



co2tieferlegen.ch

Fun and power – even in fuel-efficient cars

co2tieferlegen is a SwissEnergy campaign to promote fuel-efficient vehicles. Its particular highlights have been its successful appearances at the Geneva International Motor Show and the large BEA and MUBA public trade shows. Olympic snowboarding champion louri Podladtchikov has been an ambassador for the campaign since autumn 2015, notably appearing in a TV advert. co2tieferlegen.ch

Impulse for refrigeration systems

Two steps for more energy-efficient refrigeration

It costs around 1.3 billion francs per year to power Switzerland's refrigeration systems, yet there is the potential for a 20% saving here. With their "Efficient Refrigeration" campaign, the Swiss Refrigeration Association (SVK) and SwissEnergy are demonstrating how this potential can be exploited. In the initial step, between 2010 and 2013, the campaign developed the necessary foundations, information resources and tools for refrigeration specialists and system operators. In the second step, between 2014 and 2017, these documents and the knowledge were further instilled in the refrigeration specialists and in customers and energy-efficient refrigeration was established as a model for successful business development. energieschweiz.ch/effiziente-kaelte

The potential for efficiency in terms of infrastructure in Swiss server rooms and data centres is already very high, at 17%. But that's not all: by incorporating potentials on the IT side, overall energy efficiency increases of over 50% are attainable, without any operational limitations. In 2017, SwissEnergy teamed up with the Swiss Telecommunications Association (asut) to launch the "Less power, more efficiency in server rooms and data centres" campaign.

Energyday impulse

A day full of energy every year since 2006

The energyday, Switzerland's national energy-say ing day, has been taking place every year since 200 The event, which is aimed at a wide audience, organised in close cooperation with partners fror the household appliance and electronics sector.



TARGET AGREEMENTS

ENERGY LABELS

IMPULSES





		2018 —	The energy future at your fingertips
	(2017 —	The energy future at your fingertips
		2016 —	Winter time = Energy saving time
		2015 —	Act intelligently, save energy
		2014 —	Less energy, full effect
7-		2013 —	Let there be LED
*	\leq	2012 —	Replace, don't repair
6.		2011 —	Efficiency is the name of the game
is		2010 —	Save and enjoy
m		2009 —	Efficiency is king
		2008 —	Simply switch it off
		2007 —	A is in
		2006 —	Less is more

IMPULSES VIEWPOINT

DISCUSSION 48

How has SwissEnergy risen to the challenges of the Energy Strategy? And where is this journey heading? Councillor of State Jacqueline de Quattro (Free Democratic Party of Switzerland [FDP], Vaud) in discussion with Patrick Kutschera, Manager of SwissEnergy.



Change needs solid points of view

A solid grasp of the facts means you are less likely to be thrown off course. Our society is changing, and business with it; digitalisation needs new energy forces that can no longer be drawn from fossil fuels. Protecting the environment is too important – young people have long been aware of this, and it has recently started gaining momentum in the political centre.

Reliable, secure and neutral information is the basis on which this change can take place. And that is precisely what SwissEnergy is fighting for, both now and in its fourth decade (2021–2030). A chat between Patrick Kutschera, Manager of SwissEnergy and Jacqueline de Quattro, Vaud Councillor of State (Free Democratic Party of Switzerland) highlights the fact that cantons and SwissEnergy have long been pursuing the same goals (from page 48).

A bold project, such as SwissEnergy, that aims to motivate, initiate, promote and boost is always under scrutiny. For this reason, constant exchange with the population, with business and with the politic sphere is essential for SwissEnergy, both today and in future. This is the only way for the future to be a success. And we already know what kind of future it will be: digital and renewable.

per cent of Switzerland's energy production comes from renewables.



300 per cent increase in power from solar, wind, biomass, geothermal and waste heat forecast for Switzerland by 2035.





Jacqueline de Quattro, Councillor of State for the Canton of Vaud and Head of the Department for Spatial Development and Environment

Patrick Kutschera, Manager of SwissEnergy

Interviewer Fabien Lüthi, Media and Politics Specialist, Swiss Federal Office of Energy

Photographer Jeannine Kämpfer, Mediamatician, Swiss Federal Office of Energy



As SwissEnergy readies itself for its fourth decade, now is the time to both take stock and look ahead to the future. For example, the climate movement, or the green boom in politics. How should SwissEnergy meet its societal commitments while turning a profit? How can Switzerland achieve a transformation that goes beyond mere change to full renewable energy reliance? Councillor of State for the Canton of Vaud, Jacqueline de Quattro, (FDP) and Patrick Kutschera, Manager of SwissEnergy, discuss the challenges of the past, present and future.

What do you think are the biggest past and current challenges in the areas of energy and climate?

J.d.Q. Gaining acceptance of hydropower was definitely one of the biggest challenges we faced in the past. When we built the large dams, people took to the streets to oppose the plans set out in the hydropower expansion policy, just as they later protested against nuclear power, and are now calling for more climate protection. People were scared of radical changes in the landscape and the loss of habitats for flora and fauna, and now we are seeing this again in connection with wind power. Today we are proud of our hydropower; it represents independence and strength and even arouses feelings of patriotism.

P.K. And the large dams represent a time when Switzerland made a decision between fossil fuels, at the time meaning coal, and sustainable energy, with a view to achieving an independent national energy supply. This was necessary because, during the war years, coal was not always

Today, hydropower

accounts for just

under 60% of all Switzerland's

electricity

production



available in Switzerland, but we had water in abundance. It's interesting that we set a course for renewable energy a hundred years ago and yet today, we still find ourselves in political, ideological trench warfare fossil and nuclear versus renewable – at a time when heating with renewable energies is more economical than with fossil fuels, nuclear power is more expensive than solar power and using an electric vehicle is just as fun as driving a fuel-run car, if not more so. To me, this is a real anachronism: the technologies have been ready for a long time but people are still using the same old, long-outdated arguments.

J.d.Q. In actual fact, today's challenges do indeed resemble those of hundred years ago: it's still a question of accepting the new technologies. And today, those technologies are for solar, biomass, geothermal and wind power. The Swiss people are very aware of the questions surrounding energy and climate, know the possibilities of alternative technologies and are showing their desire for change. They made this clear at the ballot box; in our canton, 73.5% of voters supported the Energy Strategy 2050, established by the Federal Council and Parliament. So, we have



"By using neutral, expert information, SwissEnergy can help in the implementation of the Energy Strategy." 21 May 2017: Swiss voters adopt the new Energy Law by a majority of 58.2%. J.d.Q. the technologies, the legal framework and the planning tools for a system change, we just don't have the acceptance of these new technologies. Indeed, there have also been other democratic outcomes, such as the right of associations and residents to appeal against building projects, that make it more difficult to establish enough alternative energy systems in a relatively short time to achieve the targets of the Energy Strategy 2050. And that's why, for me, implementing the energy strategy is the biggest challenge that we presently face.

You said that the Swiss people are already aware of and know the alternatives, it's just a matter of acceptance. So what can SwissEnergy do about this?

The consumer barometer, measured annually by the University of St. Gallen, Raiffeisen and SwissEnergy, shows just what Switzerland's citizens think of renewable energies.

Download: https://iwoe.unisg.ch/en/ lehrstuhlmanagementee/ publikationen/ kundenbarometer

J.d.Q. Ultimately, it's a question of explaining to each and every citizen and company what the consequences of the system change will be for them. What changes do they need to accept and which changes can they use to their benefit? What will it cost them and what can they take from it? And then maybe, when those people are purchasing a car or replacing their heating system, they won't make the same choice as they would today. Maybe they will need to accept higher investment costs, but will then have lower running

costs. Or maybe they need to learn to accept wind farms as people once had to learn to accept electricity pylons and road tunnels. We need to be able to explain the consequences to the people in such a way that each and every one of them can realistically assess the advantages and disadvantages. If we communicate honestly, based on facts, Swiss-Energy can contribute to reducing the information deficit and debunking false myths. Because yes, my neighbour's solar panels might blind me at certain times of the day, the biogas plant near my house might cause bad smells every now and then and the planned wind farm might generate a bit of noise, but no, wind turbines do not cause cancer and don't kill masses of birds.

I also think that we need to find new P.K. ways to communicate with people. For example, we need to consider why so many homeowners today are still replacing their old oil or gas heating systems with another fossil fuel-based heating system – in the canton of Zurich, for example, 90 per cent do so. The positive arguments for choosing something different are there, so what's getting in the way? We know that, on the one hand, people are poorly informed about new technologies - homeowners generally only have to consider replacing their heating once or twice in their lifetime and on the other hand, people are unsure of exactly how to proceed. The simplest option for them is to Removing the barriers blocking these new technologies will require tools and knowledge – see the solar energy example on page 32.

go straight to their plumber, who all too often is more knowledgeable about old, fossil technologies and so doesn't necessarily recommend that customers switch to renewable energies. In future, we need to take homeowners, together with highly trained plumbers and planners, on a journey and support them step by step on the road to their new heating system. We call this approach "Customer Journey". In line with this, we need to train specialists (in this case, plumbers and planners) in the new technologies, together with the industry associations. Although we are already doing this, in future we need to adopt a broader, cross-sector approach. And thirdly, we increasingly need to relieve customers of the responsibility of getting to grips with the complex technical requirements of their heating systems themselves by defining voluntary quality standards that they can rely on. We are already doing this; for example, we have introduced the "Heat Pump System Module" in response to the many heat pumps that have, on inspection, turned out to have been incorrectly installed. This provides customers with a guarantee that their heat pump system can be operated as efficiently as possible.

Information on the heat pump system module: wp-systemmodul.ch ...taking customers "on a journey", supporting them "step by step" in their decision-making process... how big is the risk that SwissEnergy will be accused of manipulating customers? Recently, SwissEnergy was accused of being a propaganda tool of the Federal Council for the Energy Strategy 2050.

P.K. SwissEnergy is non-political, though it is in the political sphere. We are only using the funds entrusted to us effectively if we can bring about voluntary behavioural changes. And bringing about behavioural changes by providing information is often linked to propaganda. But it is only reprehensible when false information is spread. SwissEnergy cannot afford to do this; we are under such close political and media scrutiny that disseminating incorrect information would immediately trigger a heated response. And it's interesting that the SwissEnergy strategy group, in which the various parties, organisations, cantons and municipalities are represented, even recommended that we were a little bolder and carried out larger, more visible campaigns to reach younger people, who are generally less aware. That's exactly what we did with the Energy Challenge - to great success. And we also learned where the limits of our possibilities lie: if we are too visible, the political pressure mounts up. In future, we will concentrate on the most important target groups, for example homeowners and mobility users, providing specific information and simple tools to support

2019 saw SwissEnergy motivate Switzerland to make energy savings for the fourth time. As planned, SwissEnergy will step back from the Energy Challenge project from 2020, as it has become self-sustaining. (Page 27) For more information on the MakeHeatSimple campaign, turn to page 19. them through their decision-making processes. We started this during this year's campaign, which aims to equip 700,000 second homes in Switzerland with remote heating control in the hope of saving 3% of the energy consumed by Swiss households.

J.d.Q. I don't think there are any limits on SwissEnergy's information and communication activities, provided that this is based on facts and takes all aspects into consideration. SwissEnergy is not a lobby; its task is to inform the population in an honest and transparent way. But the challenge here lies in positioning itself as a neutral, non-political information platform alongside all the lobbyists spreading one-sided or even incorrect facts. Somebody needs to take on the task of refuting false information with knowledge from scientific studies and of countering the influence of lobbyists on public opinion. And, in my opinion, SwissEnergy is the right vehicle to explain the consequences of the system change to the people in a neutral way, and therefore bridge the gap between the authorities and the public. This means that Swiss-Energy also needs to provide information on the disadvantages. Yes, wind farms have high investment costs, change the landscape, make noise and, occasionally, harm or kill birds. We cannot lie about this.

P.K. I'm convinced that the majority of Zurich's homeowners who have replaced their heating with another fossil fuel system would have opted for renewable energies if they had been equally well informed about all their options. We must explain to people that they have a choice. And it's not just homeowners - we also need to show plumbers all their options, because it is not a question of faith for homeowners or plumbers when it comes to replacing a fossil fuel heating system with another; rather it is a question of information and knowledge about alternative technologies. And this is where SwissEnergy can help, not in the sense of manipulation, but in the sense of providing neutral, expert information, which today is usually lacking.

In which areas do voluntary measures work? Where do voluntary measures reach their limits and regulations become necessary?

J.d.Q. We have been using voluntary measures in Switzerland for a long time, though we do have to admit that things would not work without regulations. In many circles, people *"SwissEnergy is the vehicle for explaining the consequences of the system change to people in a neutral way."*

> More information on the history of Minergie can be found from page 8 onwards.

still hold to the belief that environmentally friendly solutions are not economical and that the energy shift will fundamentally harm business. I belong to a pro-business party and have been the environment and energy minister in our canton for 12 years. In this time, the Canton of Vaud has implemented the most progressive energy laws in Switzerland. Between 2012 and 2018, the Buildings programme in our canton generated an order volume of 700 million Swiss francs. That's a lot of money flowing into the economy and creating jobs. This shows that, along with strict regulations, subsidies are also required to attract investment. However, this needs funding, through taxes and duties, which the business world does not always welcome. But the "carrot and stick" strategy has proven its worth: for example, today we have 30 per cent more heat pumps installed and only 2 per cent of newbuilds have fossil fuel heating systems.

PK. Financial incentives and voluntary measures, such as those implemented by SwissEnergy together with the cantons, municipalities and numerous partners from the world of business, help new technologies find their way onto the market quicker and gain acceptance. In this way, for example, the pioneering Minergie was able to not only showcase its economically and ecologically sound building development with very low energy consumption, but was able to go one step further, becoming the new standard.

J.d.Q. It's interesting to see that the political reservations are often not confirmed by the market. For example, in our canton, the mandatory introduction of the Canton Building Energy Certificate (GEAK) took place without making big waves, while in other cantons, they are still debating whether this is reasonable for property owners. But this could be resolved with a GEAK subsidy. In implementing this mandatory measure, our primary aim is to create greater transparency for purchasers and renters and, ultimately, make it economically worthwhile for property owners and landlords to invest in their buildings.

I am convinced that the threepronged approach involving voluntary measures, incentives and regulations is the best way to achieve our climate goals and at the same time benefit the economy. But I still believe that there is too little discussion of the effort required for this, particularly in relation to the budget for subsidies and voluntary measures.

All around the world, young people are heading out onto the streets and demanding that politics does more to protect the climate. Should SwissEnergy be participating in this movement?

J.d.Q. This movement shows that the keen climate awareness among young people is real. And it is remarka-

The first 15,000 Canton Building **Energy** Certificates (GEAK) were awarded in 2009 as part of a nationa launch campaign run by SwissEnergy Since then, the GEAK has been further developed and, with the GEAK Plus, is now the most used advisory instrument on the Swiss renovation

"Political reservations are often not backed up by the market which is interesting to note."

"SwissEnergy is not a platform for political demands; if we were, we would no longer be neutral and credible."

Do you have a vision for SwissEnergy? What do you think should make SwissEnergy stand out in the next few years?

P.K. I support the first part of your statement: politics needs to take this movement seriously. But Swiss-Energy should not get involved in political movements and this call for more climate protection from young people is just that, a political movement, just as the anti-nuclear demonstrations were in the past. We have been asked by various movement founders to provide support, but we have consistently declined as there are always political parties behind the actors. Obviously, all parties and political movements can use the information that SwissEnergy provides for their own purposes, but we should not unilaterally give them a platform for their political demands, or we would no longer be neutral and credible.

ble to see how much influence the

current situation is having on the political sphere. This is an opportunity for all parties involved to strive towards a system change. For this reason, it is a good idea for us to support and exploit the potential of this

movement.

- J.D.Q. Yes, I agree. I meant SwissEnergy can benefit from the heightened awareness that this movement has brought about.
- **P.K.** Yes, we can benefit above all from the fact that politics has now maybe moved things up a gear and is making more rapid progress in implementing the energy strategy and can now overcome the old ideological trench warfare.

IMPULSES - SWISSENERGY REPORT

- J.D.Q. I recommend that SwissEnergy strengthen the areas in which it has always been strong: helping, training and informing the public so that they can make conscious decisions in full knowledge of the facts. And it should do this by putting good examples in the spotlight.
- **P.K.** I would like SwissEnergy to empower people to align their behaviour and decisions on energy matters to sustainable solutions and to act as a reliable and trustworthy guide through the transformation process. By transformation, I don't simply mean the change from fossil and nuclear to renewable energies, but also the very dynamic digitalisation of the energy sector. Many people are overwhelmed by this digitalisation and are being left behind. SwissEnergy should help all population groups transition with this technological shift.

SwissEnergy is entering its fourth decade. The strategy for 2021 to 2030 is now available to download here: energieschweiz.ch/strategie2021-2030

SwissEnergy. Informative. Competent. Independent.

SwissEnergy has contributed to the faster spread of energy-efficient vehicles and alternative drive systems, to the improved framework conditions for electromobility, to an increased and varied range of car and bike sharing services and to the bike trend among the Swiss population. Thanks to SwissEnergy, drivers are now aware of methods for efficient driving and municipalities and companies have the tools for successful mobility management. SwissEnergy supports offers combining various mobility services and digitalised access to mobility, while also contributing to the implementation of sustainable mobility concepts in local, spatial and development planning.

Significant projects from this decade:

- co2tieferlegen (p. 44)
- Electromobility roadmap
- AutoEnergieCheck (p. 35)
- EcoDrive campaigns (p. 34)
- Bike campaigns
- Catch a Car (p. 19)

 Mobility management for companies and municipalities

SwissEnergy has set the trend for more energy-based renovations on the renovation market and has supported the cantons in developing and launching the energy label for buildings (Canton Building Energy Certificate (GEAK)). With help from SwissEnergy, new SIA (Swiss Society of Engineers and Architect) standards have been developed, Minergie has successfully repositioned itself on the Swiss market and a new, advanced standard for sustainable building on the institutional real estate market has been introduced. Today, both professional and private property owners can further their knowledge of energyefficient building operation and real estate renovation thanks to the versatile information and advice offered by SwissEnergy.

Significant projects from this decade:

- GEAK and GEAK Plus (p. 35)
- Minergie (p. 8–13)
- Swiss Sustainable Building Standard (SNBS)
- energo (p. 18)
- swissesco (p. 19)

Electrical Appliances and Energy Efficiency

By offering information and advice about the "Best Available Technology" for household appliances, lighting, IT and consumer electronics, SwissEnergy has helped to guarantee more rapid market penetration and thereby made a contribution to the continued improvement of the energy efficiency of electric appliances. Various information programmes have been developed to provide private households and commercial and service companies with expertise in purchasing, using and replacing electric appliances. Together with the industry as a whole, SwissEnergy has provided information, advice and training to improve the energy efficiency of processes across various sectors. SwissEnergy has launched projects using digitalisation to capitalise on efficiency potentials.

Significant projects from this decade:

- Voluntary energy labels (p. 42 and 43)
- compareco
- topstreetlight
- MakeHeatSimple (p. 19)
- ProEPA (p. 44)
- Efficient refrigeration (p. 45)
- Efficient data centres (p. 45)

Significant projects from this decade:

- Sonnendach.ch and sonnenfassade.ch (p. 32)

Industry

SwissEnergy has provided industry

and service companies with support

in concluding target agreements with

the Federal Government. By establish-

processes, infrastructure facilities and

building technology, it was possible

efficiency and reduce CO₂ emissions.

For small and medium-sized enter-

prises, SwissEnergy has developed a

comprehensive advisory service and

sector-specific information on saving

energy. And for industrial companies

intensive power systems, SwissEnergy

now offers specific analysis tools and

with complex heat flows or energy-

to meet targets to improve energy

ing concrete measures, in particular

in the case of thermal production

and Services

11111

(p. 29)

advisory services.

- Industry guidelines

SwissEnergy has made a significant contribution to improving the information made available to the general public about the various technologies for creating energy from renewable sources and to fostering acceptance among the Swiss population. Today, SwissEnergy provide step-by-step support to private and commercial property owners to help them find the most suitable solar energy system and offers interactive tools and tailored advice. SwissEnergy has also made planning tools available for all the technical disciplines involved and has supported authorities in improving their framework conditions for matters under energy law and spatial planning.

Significant projects from this decade:

- Voluntary target agreements (p. 38-41)
- PEIK, energy advice for SMEs
- Pinch analyses
- VELANI (efficient electric motors)

Project contracts Mobility Buildings Electrical Appliances and Energy Efficiency Industry and Services Renewable Energies

382

184

2012

96

2011

- AgroCleanTech (p. 23 and 24) • Heat pump system module • Windatlas.ch (p. 35) • Solaris (integrated photovoltaic
- systems for architects p. 33)

Thanks to SwissEnergy, the number of Swiss cities and municipalities that have been awarded the "Energy City" label or European "eea Gold" award has grown considerably yet again. The "2000-Watt Site" label is a tool for modern urban development with its renovation potential for entire city districts and its conversion plans for inactive commercial/industrial areas. With its "Energy Region" programme, SwissEnergy has been supporting municipalities looking to use renewable energies collectively, involving local companies and creating new value chains in agriculture and tourism. And with its "Smart City" programme, SwissEnergy is helping towns and cities to use digitalisation as a tool to improve their resource efficiency.

Significant projects from this decade:

- Energy City label
- 2000-Watt Site label
- Smart City Hub foundation (p. 14 and 15)
- 2000-Watt Society programme
- Energy Region programme
- Project funding for energy cities and energy regions

Total number of project contracts **210**

Total number of partners

Cities/Municipalities/Sites/Regions

Education and training

Programme management

Cross-sector projects

Communication

Over the course of this decade, SwissEnergy has made end-users the priority, using national campaigns to further rectify the lack of awareness and information among the general public and the most important target groups. The Energy Challenge is a new, successful format for young people who are less aware of energy matters. And the television programme known as "Aujourd'hui" in French-speaking regions (broadcast by RTS) and "heute und hier" in German-speaking regions (broadcast by SRF) has made it possible to reach a large, valuable and demographically broad audience. To enable communication with the key target groups, SwissEnergy has modernised longstanding communication channels, such as the high-circulation newspaper for homeowners, and developed new channels online (websites, social media).

Significant projects from this decade:

- Energy Challenge (p. 27)
- Aujourd'hui / heute und hier
- (p. 26 and 27)
- Newspaper for home owners (p. 29) • energyday (p. 45)
- Topical campaigns (heating correctly, switch off appliances, photovoltaic preconceptions, etc.)

Education and training

496

171

2013

747

216

2014

930

393

2015

904

446

2016

810

428

2017

780

419

2018

Together with the cantons, sector and professional associations and educational institutions, SwissEnergy has trained specialists and provided them with knowledge of new technologies, materials and ideas for improving energy efficiency and using renewable energy. By introducing educational transfer programmes and the joint image campaign "We are building our energy future", it has been possible to counteract the skills shortage in the building and energy sector. SwissEnergy has also created appealing training courses with universities of applied sciences – a significant contribution to the urgently needed skills in the Swiss construction and energy sector. In addition, SwissEnergy has provided teaching materials and issued reference books for all education levels.

Significant projects from this decade:

- Education initiative (p. 44)
- MAS EN Bau / MAS EDD-BAT (p. 25)
- Energy engineer transfer course Coordination and development of solar
- education (p. 33) • SBB school and adventure train (p. 28)
- "Nachhaltiges Bauen und Erneuern"
- [Sustainable Building and Renovation] reference book series

Much has changed. For the better. More and more people and companies are now aware of just how fragile our energy system is and how fiercely we need to protect the climate, from which we draw our energy on so many levels.

But the work is far from done. Not for individuals, not for business and certainly not for SwissEnergy. In its fourth decade (2021 to 2030), the programme has highlighted three priority areas for action:

- Building efficiency and renewable energies of private households
- Mobility of private households and companies
- Systems and processes in industry and services

These three areas are responsible for 74% of final energy consumption in Switzerland. And we are all responsible for keeping the system in balance, which we can achieve with individual responsibility and voluntary measures. Publisher SwissEnergy, branch office
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We are there for you.

SwissEnergy

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