

Good Energies Chair for  
Management of Renewable Energies



University of St. Gallen



**RAIFFEISEN**

**9<sup>th</sup> Consumer Barometer  
of Renewable Energy**  
in Cooperation with  
Raiffeisen Switzerland and  
SwissEnergy, 2019



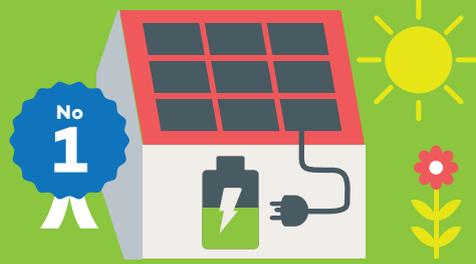
# CONSUMER BAROMETER OF RENEWABLE ENERGY 2019

## CLIMATE AMBITION FOR THE YOUNG GENERATION



**61%** of consumers, young and old, think that Switzerland should pursue more ambitious climate policy in response to the #FridaysForFuture movement.

## SOLAR PLUS STORAGE IS ON THE RISE



For the first time in the last 10 years, solar panels with battery storage have overtaken heat pumps as the most popular energy investment option for homeowners.

## INCREASING CLIMATE CONCERNS



What do people associate with climate change? One of the biggest worries, independent of political orientation, is the future of Swiss glaciers.

## E-CARS: CLEANER AND SIMPLY BETTER



What do Swiss consumers consider to be the top 3 reasons to buy an electric car? The environment, clean air in cities, and because they perceive them as technologically superior.

## SOLAR EMOTIONS PREDICT CAR PURCHASES



People who are curious about solar energy are **2x** more likely to buy an electric car.

## HIGH EXPECTATIONS VIS-A-VIS BANKS



**59%** of Swiss consumers think that banks should engage more strongly in financing clean energy projects.

## STRONG FEELINGS ABOUT WIND ENERGY



**70%** of Swiss consumers are curious about wind energy, while **11%** are angry about it. Men are almost twice as likely to be angry than women.

## KNOWLEDGE GAPS ON IMPORT DEPENDENCE



For the third year in a row, more than **90%** of respondents underestimate Switzerland's energy import dependence. In fact, three quarters of our energy comes from abroad.

## FLYING IS TOO CHEAP



**63%** of respondents agree that "flying is too cheap". A majority support a carbon-tax on aviation, only **34%** are opposed to it.

## TRANSPARENCY ABOUT ENERGY EFFICIENCY



**58%** of Swiss consumers would support mandatory building energy efficiency ratings. Only **8%** currently think that a positive rating could increase property values.

## FAMILIARITY DECREASES CONCERNS



**43%** of people unfamiliar with wind farms are afraid of them. Among those who are used to seeing wind farms, the number drops to **12%**.

## CAR SHARING GOES ELECTRIC



**65%** of potential car sharing customers would prefer driving electric.

First issued in 2011, the annual Consumer Barometer of Renewable Energy is one of the most comprehensive reviews of the Swiss population's preferences on energy topics. It is tracking the evolution of customer preferences on energy and climate-related issues over time and helps to identify emerging trends in areas like energy efficient buildings, electric mobility, social acceptance of wind energy, community financing of renewables, and green investment. The study is based on a representative sample of 1021 respondents in the German- and French-speaking parts of Switzerland.



## Executive Summary

- The results of the 9<sup>th</sup> Edition of the Consumer Barometer of Renewable Energy show that Swiss consumers are concerned about **climate change**. 55% of respondents (rather) agree that the **climate strikes** of the #FridaysForFuture youth movement are justified (N=1021). 61% think that as a response, **Swiss climate policy** should be more ambitious. Support for climate strikes comes from a variety of age groups, with the highest support coming from the oldest (>59) and youngest (<30) parts of the population. Swiss consumers appear to conceptualize the issue of climate change as “melting glaciers” as it is one of the most frequent spontaneous associations on this issue.
- 95% of respondents think that Switzerland should at least partially fulfill its **climate targets** domestically, and 62% think the share of domestic **emission reductions** should be 50% or more<sup>1</sup>. A significant share of respondents (47%) indicates an interest for more information about the consequences of reducing CO<sub>2</sub> emissions domestically versus abroad. 59% of respondents would like Swiss banks to be more active in financing low-carbon projects.
- One way to reduce emissions domestically is to expand the share of solar and wind energy in Switzerland. A large majority is in favor of deploying both **solar** (88%) and **wind** (70%) on a global scale, and they also support the expansion of solar (85%) and wind (57%) on a national scale. When moving from **general acceptance** to the emotions elicited by the two energy sources on a **local scale**, the challenge that Swiss wind energy projects are facing becomes more apparent. More people feel worried (42% vs. 9%) about having wind vs. solar power plants installed in their neighborhood, and less people feel proud (28% vs. 66%). Finally, while 70% of respondents are curious about wind energy, a small minority of 11% feel rather angry about it (8% of women and 13% of men). These results show that addressing **emotional concerns**, in addition to providing factual information, is an important element of social acceptance.
- 63% of respondents (rather) agree that “**flying is too cheap**”, an increase of 6 percentage points compared to 2018. Our results suggest that a tax of about 20 CHF on short-haul flights could find approval by a large share of the population. 24% of respondents are fundamentally opposed to a **carbon tax** on airplane tickets.
- 33% of current car drivers (N=887) could (rather) imagine buying an **electric vehicle** (EV) in the next two years. This share increases to 47% when also including those interested to buy an EV at a later stage. 65% of potential or current **car-sharing** customers (N=330) say that they would prefer renting an EV over a fossil-fueled car if offered the option.
- **Positive emotions** about solar energy are a strong predictor for interest in other **energy-related investments**. For example, those who are curious about solar energy are twice as likely to buy an electric car in the next two years. For the first time in 10 years, **solar panels with battery storage** have overtaken heat pumps as the most popular energy investment option for homeowners.
- A majority of respondents (58%) support the **Swiss energy performance label for buildings** to become mandatory<sup>2</sup>, while only 8% are aware that more transparency about energy efficiency has led to increased property values in other countries. A majority significantly underestimate Switzerland’s **import dependence**: Only 4% of respondents know that 75% of Swiss energy demand (heat, electricity and fuels) is covered through imports, 3 percentage points less than last year.

<sup>1</sup> Includes 968 out of 1021 respondents who said that Switzerland should accomplish between 10% and 100% of its climate change mitigation measures domestically.

<sup>2</sup> Gebäudeenergieausweis der Kantone, GEAK

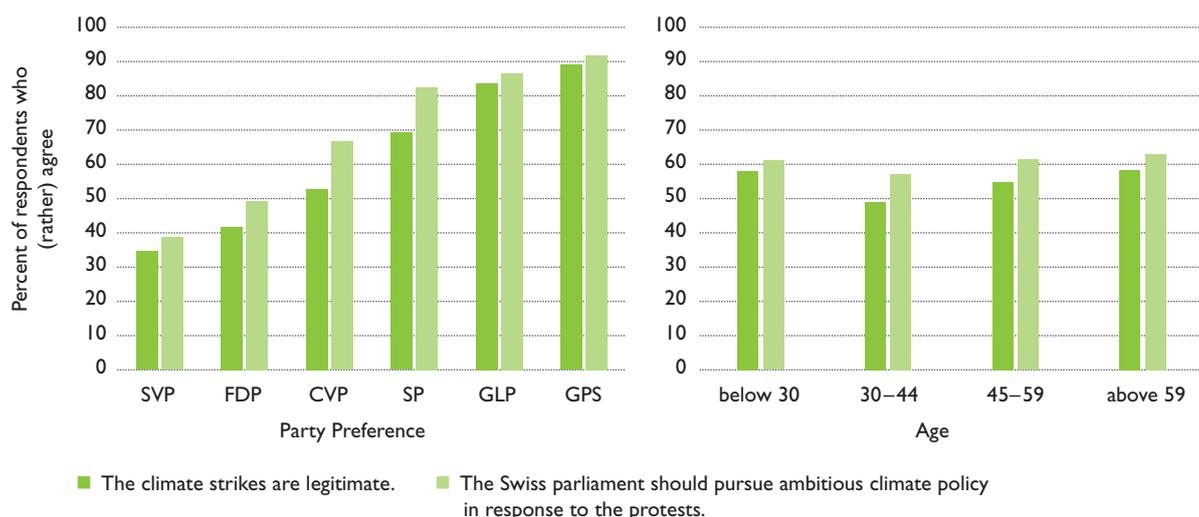
## Climate Strikes and Energy Policy

As **climate strikes** are taking place in Switzerland and around the world, the first part of this year's consumer barometer gauges the public opinion on those strikes. We find that while 33% of the population fully agree that those strikes are justified, only 14% fully disagree with this statement. One of the key demands made by the strikes' participants is that the government introduces a more ambitious climate policy. This year's survey shows that 34% fully agree with this request and this share increases to 61% when including those who (rather) agree, indicating that a majority of the Swiss population supports a **more active climate policy** in general.

The existence of a generation gap and of divisions between political parties with regards to climate issues has often been mentioned. The survey shows that opinions on climate strikes and policy are following a traditional left-right cleavage with regard to party preferences. In contrast, the differences between age groups are more subtle: the 30- to 44-age group shows relatively less support for climate strikes and more ambitious climate policies and we observe slightly higher levels of support from the oldest (>59) and youngest (<30) share of the population.

While a majority of respondents support the students' climate strikes, they also point out ambiguities. 65% of respondents (rather) agree with the statement: "The behavior of the protesters is totally contradictory – they demand more climate protection, but cannot do without flying and using their smartphones". How can climate action be achieved in a world in which consumer behavior is sometimes characterized by contradictions and inconsistencies? And what is the role of emotions in moving from attitude to behavior? This will be discussed in the next sections of our study.

**“The ‘Climate strikes’ initiated by the 16-year-old Swedish climate activist, Greta Thunberg, are currently taking place in Swiss cities. They involve primarily students, but other segments of the population are also taking part. To what extent do you agree with the following statements?” (1021 respondents)**

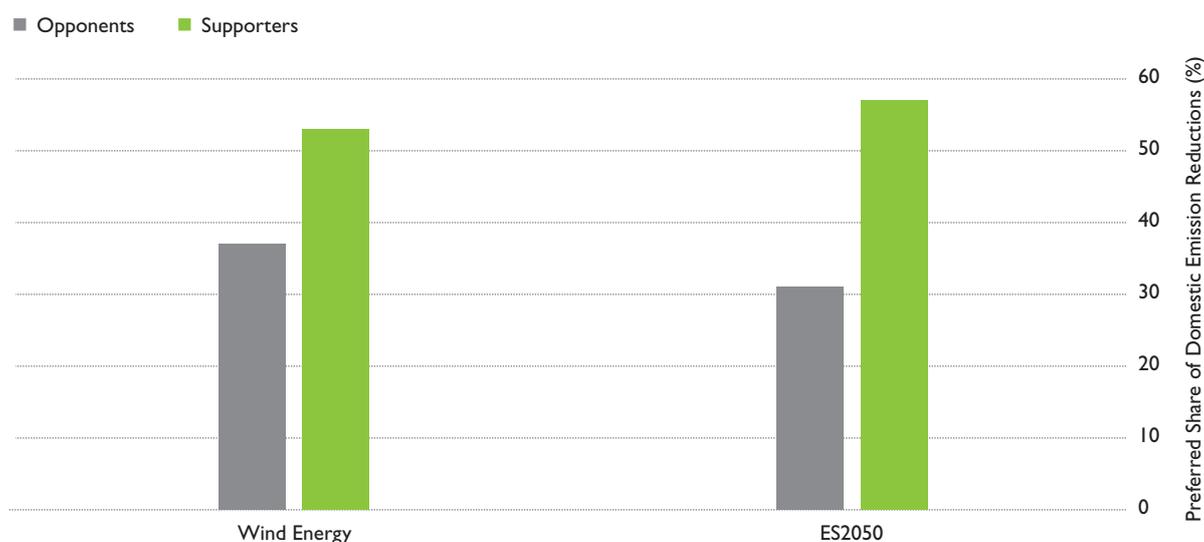


## Reducing carbon emissions – at home or abroad?

To address global climate change and its impacts, different countries including Switzerland have signed the **Paris Agreement** in 2015, which aims at reducing global greenhouse gas emissions and limiting global warming to well below 2°C, if possible 1.5°C. As part of this agreement, Switzerland has committed itself to reducing its CO<sub>2</sub> emissions by 50% by 2030 (compared to the 1990 levels). In December 2018, the Swiss National Council rejected a draft of the revised CO<sub>2</sub> law which was intended to meet the commitments of the Paris Agreement as no consensus between political parties could be found. Two major objects of discord have been the extent to which the **reduction target** should be fulfilled domestically vs. abroad, and the **internalization of external cost of aviation** through a carbon tax on flight tickets.

With regard to the first issue, we asked, “In your opinion, what percentage of the total CO<sub>2</sub> emissions’ reduction should be done domestically (within Switzerland)?”. The results show a wide divergence of opinions, ranging from 0 to 100%, similar to the views expressed in the parliamentary debate. Only about 5% respondents say that the entire amount of emission reductions should be achieved outside of Switzerland’s borders. 62% think that the share of domestic reductions should be 50% or more. Being aware of the complexity of this question, we asked respondents what additional information they would need to have to further substantiate their answer to this question. Responses show that despite increasing overall awareness about the problem, there are still open questions. Some of the frequently mentioned questions and concerns include: “What are the CO<sub>2</sub> emissions for a Swiss citizen versus other citizens on the planet?”; “How can we reduce CO<sub>2</sub> emissions concretely? Which activity produces the most CO<sub>2</sub> emissions?”; “What are the emissions emitted by the citizens versus those emitted by firms?”; “What are other countries doing to reduce their CO<sub>2</sub> emissions?”; “What would be the costs of reducing CO<sub>2</sub> emissions in the country versus abroad?”; “How would reducing CO<sub>2</sub> emissions in Switzerland affect my life?”<sup>3</sup>.

The results also show that the preferred level of domestic emission reductions is 26 percentage points higher among those who voted in favor of the **Swiss Energy Strategy 2050** than among those who voted against. Similarly, wind energy opponents would prefer a share of domestic emission reductions that is 16 percentage points lower than what supporters of wind energy would. This suggests that a stated preference for emission reductions abroad might not just reflect beliefs about economic efficiency, but also correlates with a preference for maintaining the status quo in Switzerland.



<sup>3</sup> While the open-ended nature of this question does not allow to claim representativeness, these quotes reflect the spectrum of responses. They have been translated from German and French.

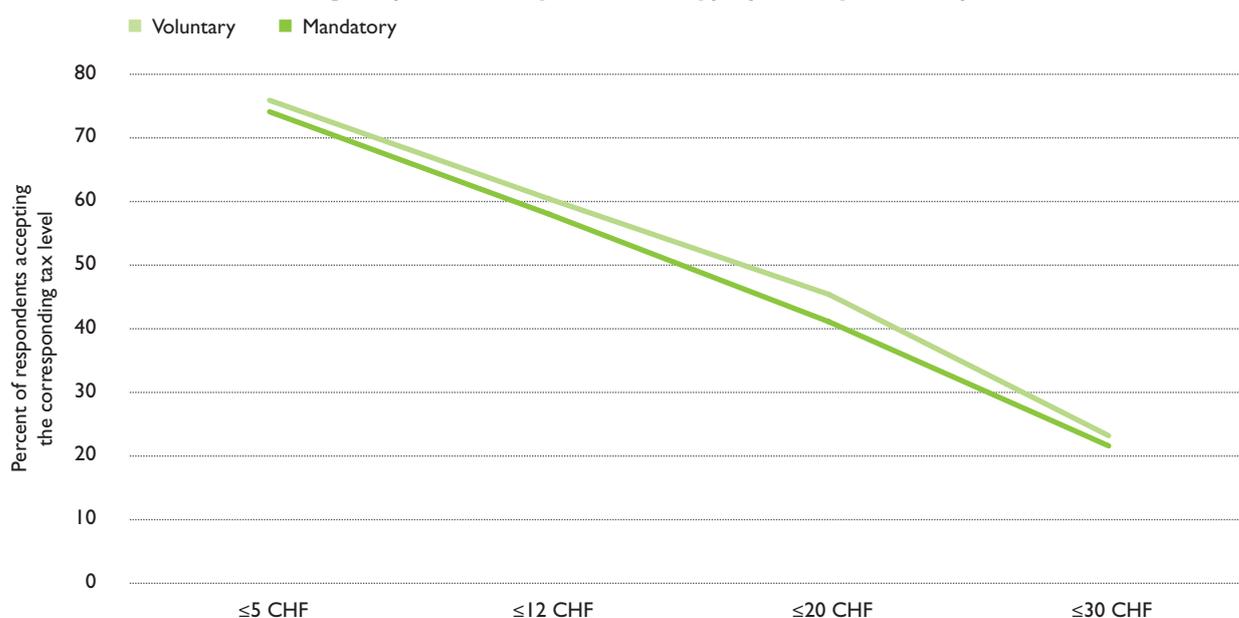
## Internalizing the external cost of air travel

One way to lower CO<sub>2</sub> emissions is to fly less. Similar to last year, we asked people's opinion about the **impact of air travel** on our climate. Opinions compared to last year reflect increased concerns of the impact of aviation on the climate. For example, 63% of respondents (rather) agree to the statement that "flying is too cheap", which is 6 percentage points higher than a year ago.

Airplane fuels represent up to 18%<sup>4</sup> of Switzerland's overall **carbon footprint**<sup>5</sup>, which is one of the reasons why a potential tax on **airplane tickets** has recently been discussed as part of the revised CO<sub>2</sub> law. It is already possible today to pay a voluntary surcharge to offset CO<sub>2</sub> emissions. The amount of this compensation depends on the distance travelled. Respondents were asked the maximum amount they would be willing to pay on a voluntary basis for short-haul and long-haul flights<sup>6</sup> respectively (round-trips). We find that while 24% (N=205) indicate that they would not make any **voluntary** payment for both short-haul and long-haul flights, the rest would be willing to pay for offsets<sup>7</sup>. For a **mandatory** tax, the results show that the share of respondents who express their opposition increases only marginally (by 2-3 percentage points), while overall there are no significant differences between the willingness to pay for voluntary versus mandatory offsets. As experience shows that people tend to overestimate their willingness to engage in voluntary environmental behavior<sup>8</sup>, mandatory implementation of a flight ticket tax might be more effective in internalizing external cost.

In terms of demographics<sup>9</sup>, young people are relatively more supportive of a mandatory flight ticket tax. Only 18% of those below 30 are against a mandatory tax while this share almost doubles (32%) for those between the age of 45 and 59. The highest support for a flight tax comes from those who never fly (N=171), of which only 17% would be against a mandatory tax. The more people fly, the less likely they are to support a flight tax. Among those who mentioned they would be against a mandatory tax, only 17% know that the current CO<sub>2</sub> tax, introduced in 2008 to reduce the use of fossil fuels, is redistributed to the population.

### "Please choose the maximum amount of tax you would be willing to pay for short-haul flights (within Europe/ round trip)" (850 respondents<sup>7</sup>)



<sup>4</sup> [https://www.swissinfo.ch/fre/sci-tech/conférence-climatique-de-bonn\\_-il-est-choquant-que-les-déplacements-en-avion-ne-soient-pastaxés-/ 43667216](https://www.swissinfo.ch/fre/sci-tech/conférence-climatique-de-bonn_-il-est-choquant-que-les-déplacements-en-avion-ne-soient-pastaxés-/ 43667216)

<sup>5</sup> The statistic depends on different studies and methodologies: <https://www.wwf.ch/fr/nos-objectifs/trafic-aerien>; [https://www.iet.hsr.ch/fileadmin/user\\_upload/iet.hsr.ch/Power-to-Gas/Kurzberichte/04\\_CO2-Fluisse\\_Schweiz.pdf](https://www.iet.hsr.ch/fileadmin/user_upload/iet.hsr.ch/Power-to-Gas/Kurzberichte/04_CO2-Fluisse_Schweiz.pdf)

<sup>6</sup> Within and outside Europe respectively

<sup>7</sup> N=850 as it only includes respondents who indicated they fly

<sup>8</sup> In fact, Swiss travelers voluntarily compensated the carbon emissions of less than 1% of their flights in 2018. <https://www.nau.ch/news/schweiz/klimastreik-start-kompensation-von-flugen-65489966>

<sup>9</sup> While for the comparison between voluntary and mandatory taxes, we included only people who fly (N=850), to compare the preferences regarding a mandatory tax between demographics, we included the whole sample (N=1021).

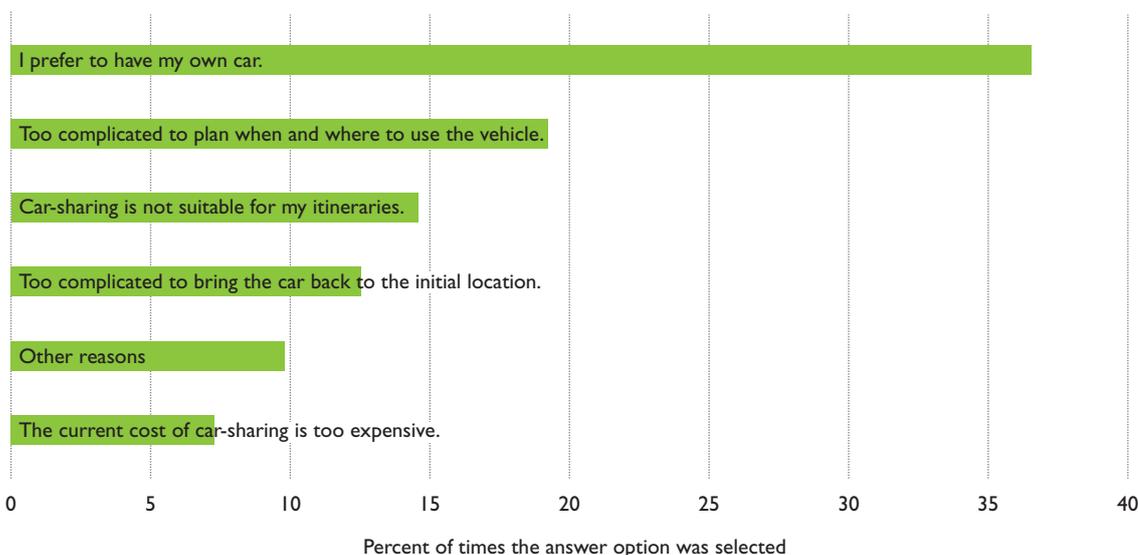
## Low-carbon transportation: E-Mobility and Car-Sharing

About a third of Swiss carbon dioxide emissions originate from the **transportation sector**. An important way to decrease CO<sub>2</sub> emissions is therefore to shift to **electric mobility**. We asked current car drivers (N=881) if they could imagine buying or leasing an electric car within the next two years. 6% of current drivers indicate they could certainly imagine it (N=49). This share increases to 33% when including those who could (rather) imagine it (N=287). This is 8 percentage points higher than in 2016. Among the latter, there is an even balance between men (51%) and women (49%). However, when looking only at the share of those who would certainly imagine buying one, men (67%) seem to be more determined than women (33%). Of those who mentioned they could not imagine buying an electric vehicle in the next two years (N=581), 10% indicate they could imagine buying one in the next 3 to 5 years, 39% in more than 5 years, while 29% indicate they would never be interested in buying one.

Among those who are interested in buying an electric vehicle at some point in time or already have one (N=552), the most important reason<sup>10</sup> indicated is to have an environmentally friendly car (24%). This is followed by improving air quality (21%) and having a technologically superior car (17%). The top reasons<sup>10</sup> indicated by those who mentioned they would never buy an electric car (N=151), are that they believe electric cars to not be cleaner than gas or diesel cars<sup>11</sup> (18%), they perceive them to be too expensive (15%) and they doubt that Switzerland will have enough electricity to charge all electric cars (14%).

While electric cars can help lower CO<sub>2</sub> emissions, the same goal can be supported by decreasing the number of cars on the road. The results show that 30% of current drivers would be (rather) interested in using a **car-sharing** service. We asked those interested in car-sharing and current car-sharing users (N=330) whether they would prefer using an electric or a combustion engine car, when using the service. 34% would certainly select an electric vehicle over a conventional car if available, and this percentage increases to 65% if we include those who would (rather) select an electric vehicle. The main two reasons<sup>12</sup> indicated for not using a car-sharing service were a preference to use one's own car (36%) and finding it too complicated to plan when and where to use the vehicle (19%). The cost of the service did not appear to be prohibitive, as it comes as the least important reason not to use car-sharing with 7%.

### “You mentioned that you do not currently use or wish to use a car-sharing service. What are the reasons for it? (551 respondents)”



<sup>10</sup> 11 answer options were offered to participants in total for this question.

<sup>11</sup> According to several studies, electric cars have significantly lower life-cycle emissions than fossil-fueled cars under a wide range of assumptions (e.g. [www.carboncounter.com](http://www.carboncounter.com)).

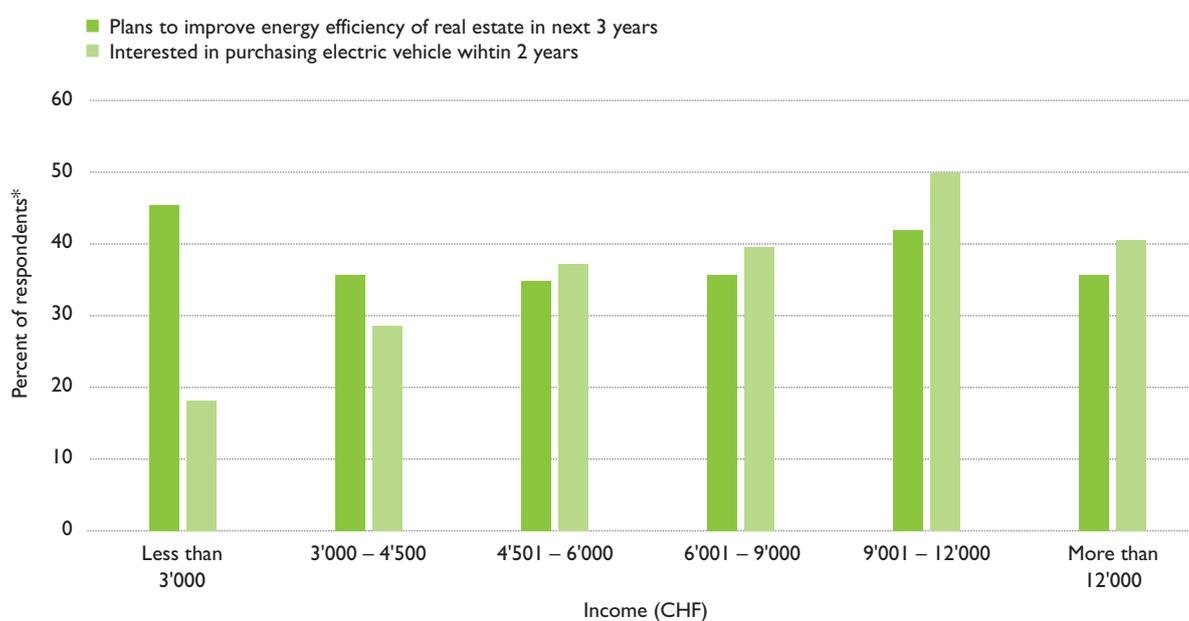
<sup>12</sup> 6 answer options were offered to participants in total for this question.

## Energy Efficiency in Buildings

Initially introduced on a voluntary basis, the **energy efficiency rating for buildings** (GEAK)<sup>13</sup> has become mandatory in some cantons, as well as in other European countries. The label shows how much energy a building consumes for heating, hot water, lighting and other electricity use. Similar to last year, 58% of respondents (N=1021) are (rather) in favor of making GEAK mandatory. This share has been remarkably stable over the past years (59% in 2017 and 57% in 2018). Also, the share of those who have no opinion (26%) has been constant, reflecting the fact that awareness about GEAK is stagnating. The main two reasons<sup>14</sup> indicated by home or condo owners to use GEAK is to obtain information on (1) the building's energy consumption (32%) and (2) its operating cost (e.g., savings from reduced energy consumption) (31%). A potential increase in the value of their property, that has been shown to be a driver for adoption of energy efficiency ratings in other countries<sup>15</sup>, is not widely recognized by Swiss homeowners yet (8%). In fact, it is the least important of five potential reasons for considering energy certification.

New buildings tend to have better energy efficiency standards, which translate into lower **energy consumption** and thus lower costs. We asked respondents about the factors they consider when moving into a new residential building for rent or lease. We found that while location (94%) is the most important aspect, heating cost (87%) and energy efficiency of the building (67%) are high on their priority list, too. This interest in energy efficiency is also reflected by the fact that 37%<sup>16</sup> of home or condo owners (N=467) indicate that they are planning to improve the energy efficiency of their property in the next 3 years<sup>17</sup>.

In terms of demographics<sup>18</sup>, we observe that “green” investments are not always a function of income. While we would expect those, who have the highest income, to be more prone to invest in energy efficiency, we observe that homeowners in the lowest income bracket are more likely to do so, potentially planning to save money in the future on energy costs. In contrast, for electric vehicles, the relationship between income and willingness-to-invest follows an inverted U-shape, with the highest interest currently coming from upper middle-class respondents.



\*This figure excludes respondents who did not want to indicate their income

<sup>13</sup> GEAK in German (Gebäudeenergieausweis der Kantone), CEBS (Certificat énergétique cantonal des bâtiments officiel) in French and CECE (Certificato energetico cantonale degli edifici ufficiale) in Italian

<sup>14</sup> 5 answer options were offered to participants in total for this question, and they were asked to pick the two most important ones.

<sup>15</sup> <https://doi.org/10.1016/j.eneco.2013.07.020>

<sup>16</sup> Includes the share of agree and rather agree to the question: “Do you plan to make energy efficiency improvements in your current home/apartment in the next three years?”

<sup>17</sup> 27% of them have already used the services offered by the confederation (SwissEnergy) in terms of advices regarding energy efficiency.

<sup>18</sup> Here, we compared investment in electric vehicles and investment in energy efficiency. As such, we included only respondents who were both condo or home owners and car drivers (N=403).

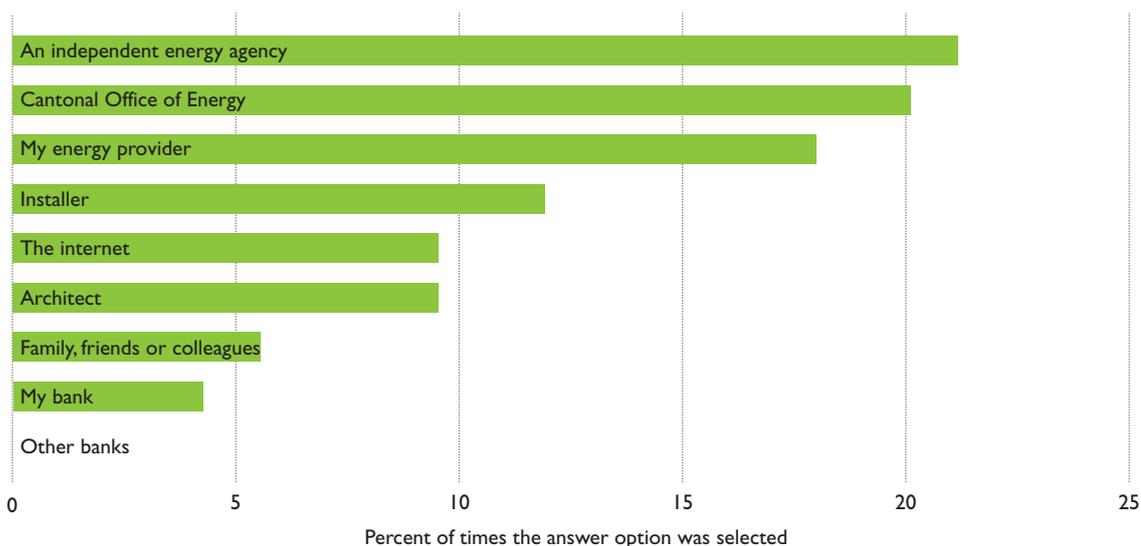
## Preferences for Green Building Features

When homeowners take decisions about **energy-related investments**, those compete with other investments in their house, such as a new kitchen or renovating their bathroom. Given a range of investment options, respondents indicated that if they had savings available, they would invest most of them in installing a **solar system with battery storage** (24%). Solar-battery systems are thus beating heat pumps in terms of preferred investment for the first time. Renovating the roof comes in second (14%) followed by heat pumps (11%). Last year, we found that one of the main reasons for homeowners to install a solar system with battery storage was to gain more independence. Given the increasing desire for independence on the individual level, it is striking that respondents are still largely unaware of the degree to which Switzerland depends on energy imports. Only 4% are aware that 75% of Swiss energy consumption is covered by imports<sup>19</sup>. Awareness of import dependence is even 3 percentage points lower than last year.

When asking only about preferred heating systems, **heat pumps** (53%) are still the most popular technology, followed by solar thermal energy (21%). The least preferred types of heating solutions are gas (8%) and oil (3%). Improving the energy efficiency of a home or investing in renewable energy technologies requires funds. We thus asked homeowners interested in making **energy efficiency improvements** (N=172) at what investment level they would need to take out a loan to do so. While 46% indicate they would not need a loan and 30% that they do not know, those interested in taking a loan indicate an average amount of CHF 20'018.

Different actors are exploring the opportunity to offer new products and services with regards to energy-related investments. We have asked those interested in making energy efficiency improvements in their homes, who they would contact to get information. We observe a clear preference for an independent consulting center/energy agency (21%) and the cantonal office of energy (20%).

### “Who would you contact to obtain information on the energy efficiency of your real estate?” (172 respondents<sup>20</sup>)



<sup>19</sup> When considering all areas of energy demand (heating, transportation, electricity)

<sup>20</sup> Home or condo owners interested in improving the energy efficiency of their real estate in the next three years

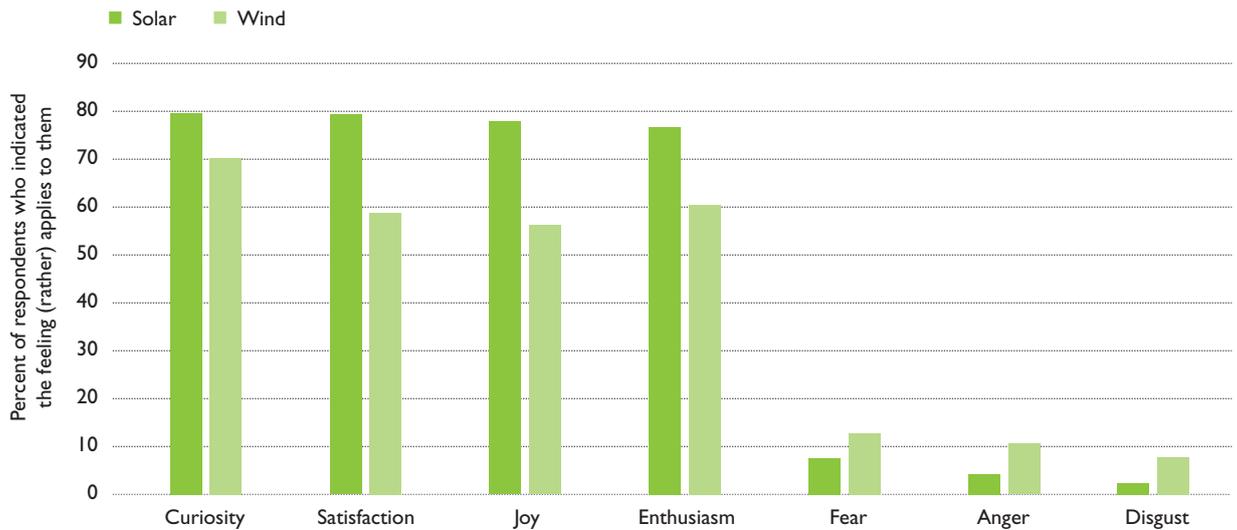
# Social Acceptance of Renewable Energy

The consumer barometer has consistently shown positive attitudes among the Swiss population with regards to renewable energy, however, one of the areas where progress towards the Swiss Energy Strategy 2050 targets has been slow is the implementation of **wind energy** projects. Almost every wind turbine project in Switzerland has faced opposition, and often legal action. Our survey results illustrate that wind energy is facing relatively more acceptance issues than solar energy and allows us to explore some of the underlying emotional drivers.

A large majority is in favor of deploying both solar (88%) and wind (70%) on a global scale and support the expansion of solar (85%) and wind (57%) on a national scale. When moving from general acceptance to the **emotions** elicited by the two energy sources on a local scale, the challenge that Swiss wind energy projects are facing becomes more apparent. More people feel worried (42% vs. 9%) about having wind vs. solar energy plants installed in their neighborhood, and less people feel proud (28% vs. 66%). Finally, while 70% of respondents are curious about wind energy, a small minority of 11% feel rather angry about it (8% of women and 13% of men).

One factor that influences social acceptance is **familiarity**. Indeed, while only 22% of those who indicated being rather familiar to seeing wind turbines in their immediate neighborhood (N=194<sup>21</sup>), say they would be (rather) worried with having a wind turbine built close to their homes (5km), this share increases to 43% for those who indicated that they are rather not familiar with seeing wind turbines in their immediate environment (N=807<sup>21</sup>). This corresponds to findings from the previous year where we found that, on average, respondents who had already been close to a wind park were more favorable to having one built in their community. Among those who are (rather) curious (N=718) about wind energy, 49% are (rather) not worried to have a wind park built close to their homes, whereas this is only the case for 20% for those who are not curious about this technology. These results show that addressing **emotional concerns**, in addition to providing **factual information**, is an important element of social acceptance.

### “Please indicate to what extent you feel the following emotions when you think about solar/wind energy:” (1021 respondents)



<sup>21</sup> This result excludes those who indicated they did not know if there was a wind park in their immediate environment or/and did not know if they would be worried about having a wind turbine being built close to their home.

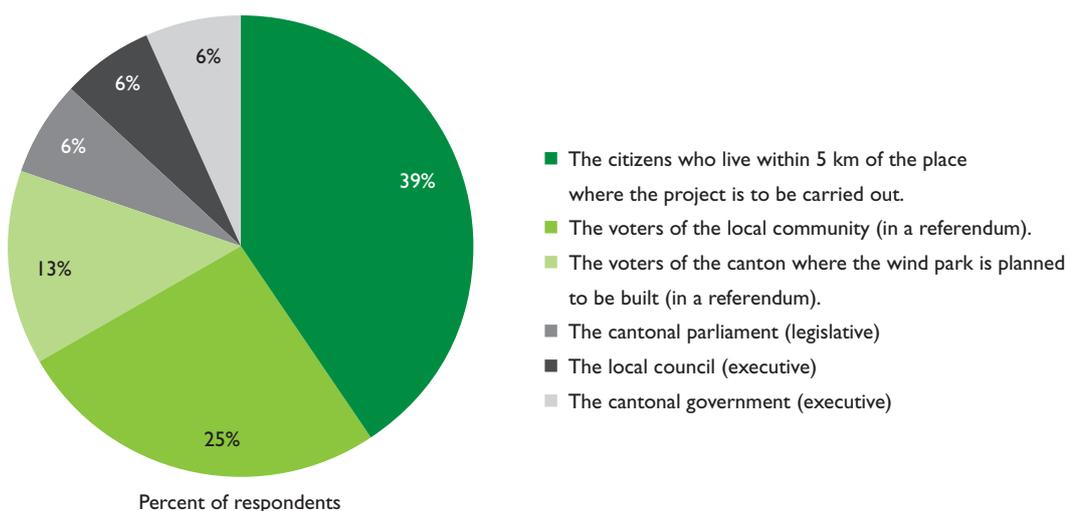
## Deciding on wind parks: who should have the final say?

In contrast to the worldwide growth of wind energy, not a single new wind turbine has been constructed in Switzerland last year. Many planned projects are facing long delays. Resistance is not just coming from actual residents and non-governmental organisations, but sometimes also from cantonal or local authorities. This has sparked a debate around **governance processes** that could help to bridge the gap between federal renewable energy targets and local implementation. Given Switzerland's long tradition of **direct democracy**, one question is whether decisions about wind energy projects should be made by **public authorities** or by the **affected population** in a referendum. In reality, responsibilities are being split between federal, cantonal and local authorities, leading to a diversity of approaches being pursued in different regions, and sometimes a lack of clarity for project developers. We asked respondents who they think should have the final say with regard to wind park implementation.

Out of six options that we offered them, we find that direct democratic votes were more popular than decision-making by government or parliament. The preferred option was to give local residents living in proximity (within 5 km) of the wind park the final say (39%), followed by a referendum in the local municipality (25%), and a cantonal referendum (13%). It is worth noting that out of the three preferred options, only the latter two are feasible under current legislation, as people living within 5 km of a project might live in different municipalities or even cantons. So rather than providing a direct template for implementation, the preferences stated here seem to reflect a general principle that decisions should be taken by those who will have to bear the costs and benefits of a project. Having the local council, the cantonal parliament, or the cantonal government decide was preferred by 6% of respondents.

In terms of demographics, Swiss People's Party (SVP) and Green Liberal Party (GLP) voters are particularly in favor of having the local citizens decide (49% and 38% respectively), possibly for different reasons, given the parties' diverging views on wind energy. Among those who indicated they are rather used to seeing wind turbines in their immediate environment (N=194), 32% would want the local citizens to have the final say.

### “In your opinion, who should have the final say on whether or not to build a wind park?” (1021 respondents<sup>22</sup>)



<sup>22</sup> 5% had no opinion



## Positive emotions and low-carbon behavior

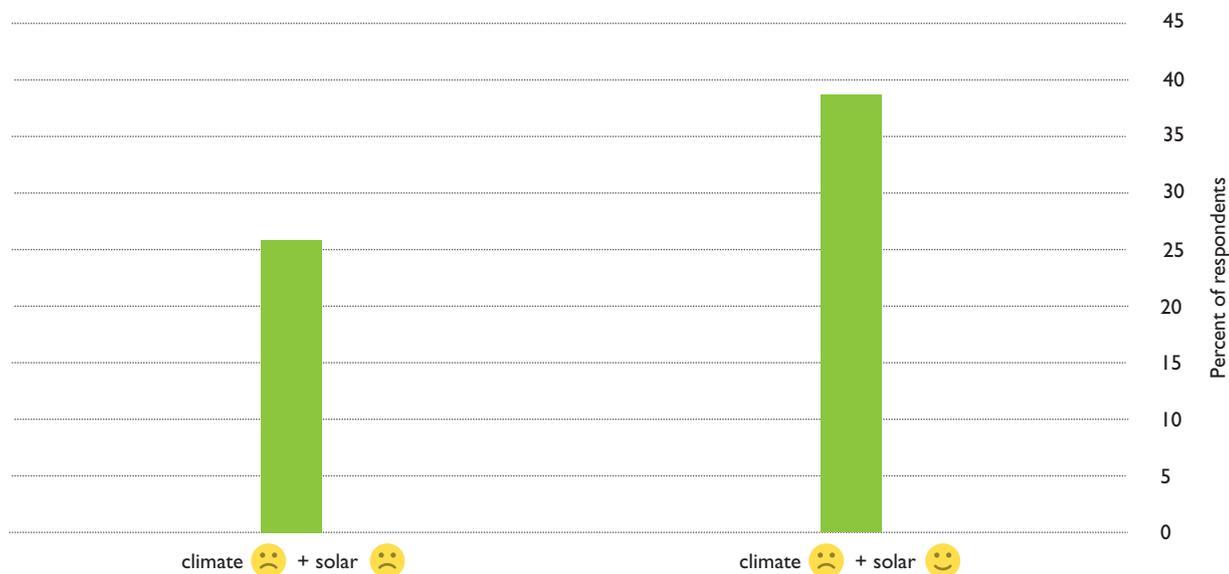
While climate change is often related to negative emotions, the energy transition is not all doom and gloom. One energy that can be a strong source of positive emotions is solar energy. What is the role of such positive emotions in driving adoption of sustainable solutions? And how do fear towards climate change and positive feelings towards clean energy solutions interact when it comes to stronger climate action?

The data shows that among the people who are (rather) curious about solar energy and are current drivers (N=653), 40% indicated that they are thinking about buying an EV in the next two years, while this share drops to 21% among those who are (rather) not curious about solar energy (N=169). Moreover, among those who have positive feelings about solar energy, their preferred share of domestic CO<sub>2</sub> emission reductions is higher than the average. Specifically, among those who are enthusiastic about solar energy (N=784), the average share of domestic reductions is 52% while it drops to 36% for those who indicate they are not enthusiastic about solar energy (N=237). We also find that feelings vary by gender. While 13% of men feel angry about wind energy, this percentage falls to 8% for women. Moreover, we find that among those who have negative feelings about climate change, those who have, at the same time, positive feelings about solar energy (N=550) are more likely to buy an electric vehicle in the next two years compared to those who have negative feelings about both climate change and solar energy (N=88) (39% versus 26%).

These results show first that **positive emotions** about solar energy can lead to a **higher adoption rate of sustainable technologies**, opening **market opportunities** for low-carbon product bundles, such as EVs with solar carports, or solar-battery-systems. They also indicate that people who combine climate fear with positive solar emotions are more likely to take climate action than those who have negative feelings about both the problem (climate change) and the solution (solar power).

### Combined effect of climate and solar emotions on adoption of electric vehicles

■ (Rather) interested in buying an EV in the next two years



# The Role of Banks in Climate Action

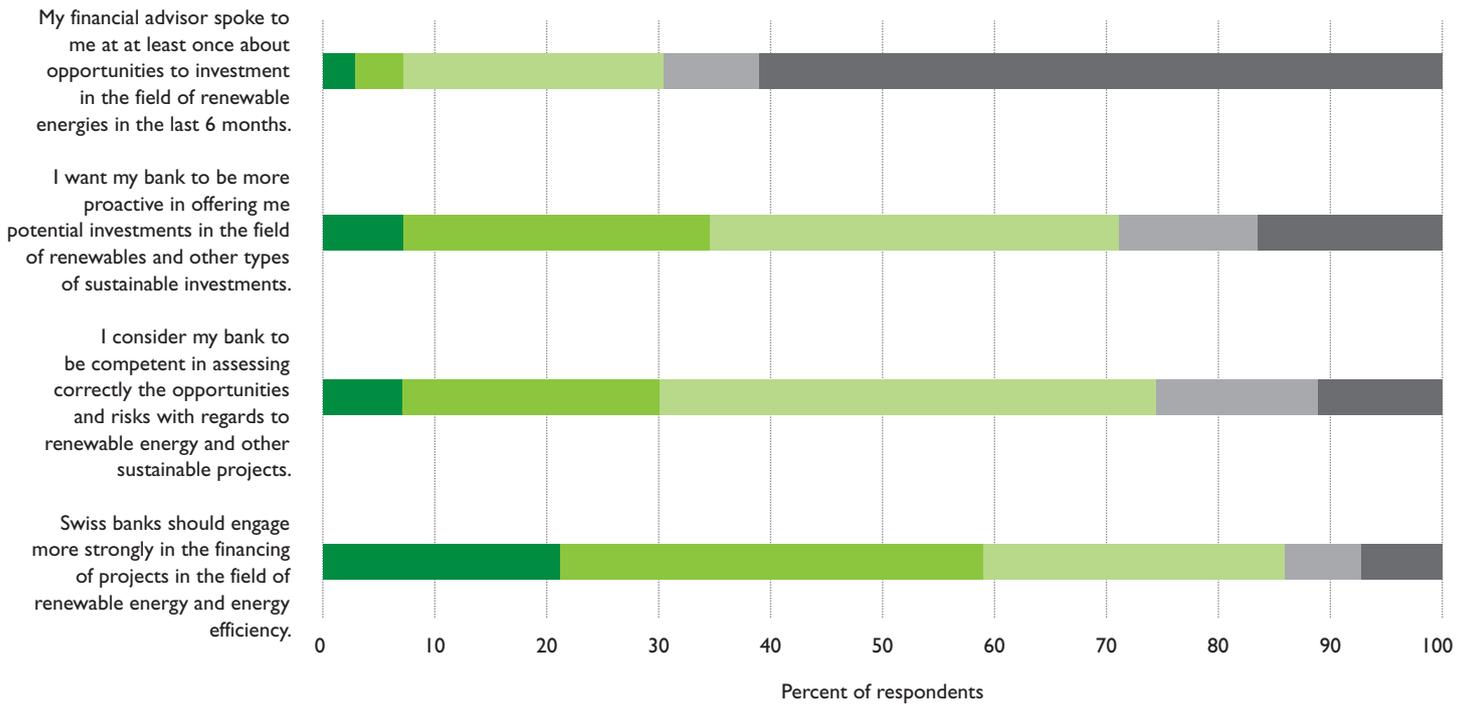
Banks can play an important role in transitioning to a cleaner energy future through their **investment decisions** and by offering **new products and services**. This year's consumer barometer shows that consumers expect banks to take an active role in contributing to climate action.

We first asked respondents whether their financial advisor had mentioned to them, at least once in the last six months, the opportunities to invest in renewable energy products. We find that this is the case for only 7% of respondents<sup>27</sup>, indicating untapped potential for low-carbon products and services. 35% of respondents mention they would like to receive more active advice from their banks with regards to investment opportunities in the field of renewables and other sustainable investments.

But consumers' expectations are not limited to banks' classical financing and advisory role. 59% of all respondents indicate they would like to see Swiss banks engage more strongly in supporting projects in the field of renewable energy and energy efficiency.

## “To what extent do you agree with the following statements on the role of the financial sector in promoting renewable energy technologies and energy efficiency?” (1021 respondents)

■ Agree ■ Rather agree ■ Neutral ■ Rather disagree ■ Disagree



<sup>27</sup> Includes the share of agree and rather agree

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## Data and Methods

The study is based on a representative survey of 1'021 Swiss respondents aged 15 to 74, residing in the German- and French-speaking parts of Switzerland. The data was collected in March-April 2019 and the sample was drawn from the B2C online panel of intervista AG<sup>28</sup>. The sample is representative for gender (51% women) and education, with 38% of respondents having obtained a higher education degree. Geographically, the sample corresponds to the distribution of the overall population among the German and French-speaking regions of Switzerland. 25% of respondents reside in Western Switzerland, 24% in Alpine / Pre-Alpine regions, 22% in the Western Midlands and 29% in the Eastern Midlands. Since 2017, the Consumer Barometer sample is also representative for political orientation according to the results of the latest national elections. 29% of respondents stated their views were best represented by the Swiss People's Party (SVP), 16% by the Liberal Democratic Party (FDP), 4% by the Conservative Democratic Party (BDP), 12% by the Christian Democratic People's Party (CVP), 5% by the Green Liberal Party (GLP), 7% by the Green Party of Switzerland (GPS) and 19% by the Social Democratic Party (SP). The remaining 8% stated that another political party best represented their views and opinions. The sample included 62% of home or condo owners and 38% of renters or cooperative partners.

<sup>28</sup> <https://www.intervista.ch/panel/>

## From Attitudes to Behavior: A Note on Interpreting Survey Data

Decision-makers who take the study results as a starting point for strategy development should be aware of the following points.

**Consumer behavior materializes in situational contexts**, in which several factors beyond basic preferences play a role.

- **Status Quo Effect:** Overcoming the status quo is a time-consuming and emotional effort for the consumer. In the electricity market, only about 10% of customers actively choose a different product than the pre-defined default (*Litvine & Wüstenhagen 2011, Kaenzig et al. 2013, Chassot et al. 2017*).
- **Lack of Supply:** In a new market (such as electric mobility or solar-battery systems) there is often only a limited number of suppliers. Under such circumstances, existing products may not correspond to consumer preferences with regard to aesthetics, price or other attributes.
- **Peer Group Effect:** Human decision-making is based not only on individual preferences, but also on social influence. The opinion of relevant reference groups may, for example, affect voter behavior (*Rinscheid & Wüstenhagen 2018*). Conversely, the probability of purchasing solar panels can be increased by neighborhood effects (*Bollinger & Gillingham 2012, Dharshing 2017*).
- **Interest-based Communication:** Markets and the political process are characterized by competition between different communication strategies. Established players may influence preferences for change in favor of the status quo through deficit-oriented communication (*Longchamp 2008*).
- **Emotional Influences:** Decision-making is a complex interplay of rational and emotional factors (*Kahneman 2011, Brosch et al. 2014, Rinscheid & Wüstenhagen 2018*). Successful energy communication must also appeal to the emotional level.

It should also be noted that surveys can only cover a part of the population. Concerning **representativeness of the sample**, the Consumer Barometer meets the highest standards with regard to the Swiss population. However, differences can occur if an observed sample does not correspond to the overall population (e.g. if less than half of the voters participate in a referendum). When using the results in marketing, it should be considered that usually only part of the consumers (the so-called target group) consider the purchase of a given product. Observing the preferences of the overall population helps to identify the market potential, but should be supplemented by target group-specific analyses (*Kaenzig & Wüstenhagen 2008, Tabi et al. 2014, Salm et al. 2016*).

### Chair for Management of Renewable Energies, University of St.Gallen

The Good Energies Chair at the Institute for Economy and the Environment, University of St.Gallen, focuses on issues related to management of renewable energies, including analysis of investment strategies and policy, as well as research on business models and consumer behavior. The Chair's research has been published in leading academic journals in the field and has informed decision-makers in Switzerland and internationally. The Chair was founded in 2009 and is led by Prof. Dr. Rolf Wüstenhagen.

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### Raiffeisen: Third Largest Banking Group in Switzerland

Raiffeisen is Switzerland's leading retail bank with 3.8 million clients served in 896 locations across Switzerland. With a 17.6% share of the Swiss mortgage market and CHF 185 billion in loans to clients, we strive to advance sustainable investment together with our corporate and private clients, and as such understand the need to track and assess opportunities and risks of renewable energies. The "Consumer Barometer of Renewable Energy" provides context and valuable insight into customers' views on renewable energy as well as their expectations from financial services providers. Raiffeisen applies these findings by developing sustainability products and services tailored to our clients' needs.

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### SwissEnergy: Raising Awareness for Energy Efficiency and Renewable Energy

Launched by the Federal Council in 2001, the SwissEnergy programme aims to increase energy efficiency and the use of renewable energies, thus making a substantial contribution towards achieving energy and climate policy goals. The programme focuses on raising awareness and on providing information and advice, basic and continuing education and training and quality assurance in various priority areas. A particular objective is to break down the barriers that prevent the full potential of energy efficiency measures and renewable energies from being realised. SwissEnergy supports the implementation of legislation, promotion programmes and market instruments related to energy and climate policy. Through innovative projects, partnerships, advice initiatives and other activities, SwissEnergy also encourages the implementation of voluntary initiatives in households, communities and businesses. Since 2011, SwissEnergy has focused more closely on end consumers, working with representatives of the private and public sectors and other organisations to support initiatives and campaigns.

**[www.energieschweiz.ch](http://www.energieschweiz.ch)**

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