

ENERGISE

EUROPEAN NETWORK FOR RESEARCH, GOOD PRACTICE
AND INNOVATION FOR SUSTAINABLE ENERGY 

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SWITZERLAND

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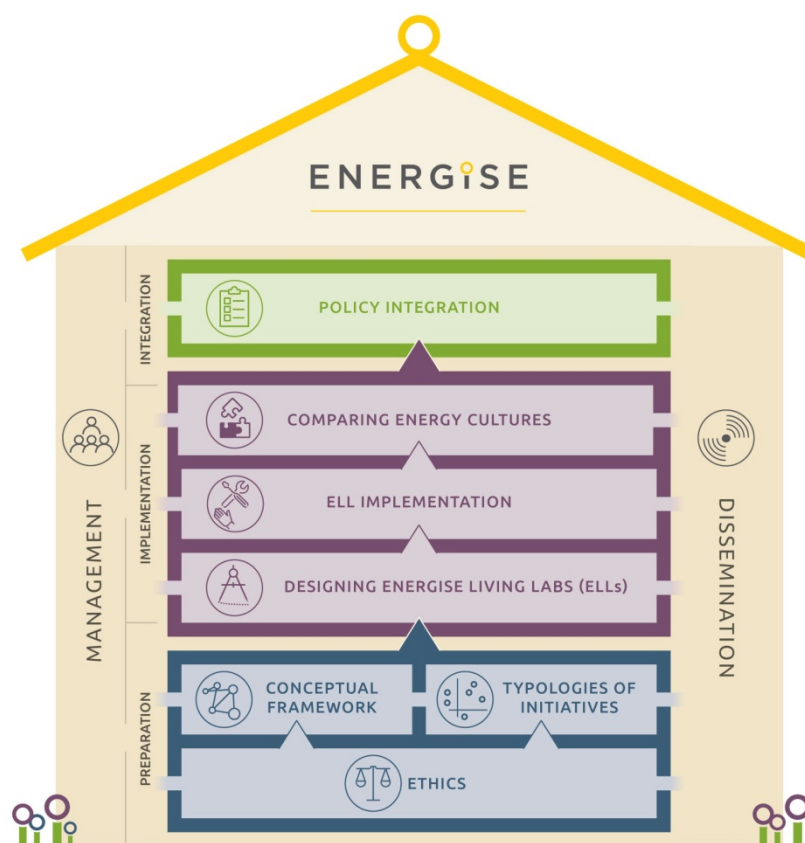
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ENERGISE PROJECT

ENERGISE is an innovative pan-European research initiative to achieve a greater scientific understanding of the social and cultural influences on energy consumption. Funded under the EU Horizon 2020 programme for three years (2016-2019), ENERGISE develops, tests and assesses options for a bottom-up transformation of energy use in households and communities across Europe. ENERGISE's primary objectives are to:

- **Develop an innovative framework** to evaluate energy initiatives, taking into account existing social practices and cultures that affect energy consumption.
- **Assess and compare the impact** of European energy consumption reduction initiatives.
- **Advance the use of Living Lab approaches** for researching and transforming energy-related practice cultures.
- **Produce new research-led insights** into the role of household routines and changes to those routines towards more sustainable energy.
- **Encourage positive interaction** between actors from society, the policy arena and industry.
- **Effectively transfer** project outputs towards the implementation of the European Energy Union.



INTRODUCTION

This document is one of 30 national briefs, demonstrating key aspects of national energy supply and demand dynamics. Each brief is comprised of five sections:

Section 1 summarises the energy profile of the country. The section provides basic quantitative information of demand demographics and usage profiles, market trends and energy supply profiles, as well as qualitative reflections on current national energy policy. ***For all the briefs, the quantitative information is derived from ec.europa.eu/eurostat (2015 data), eea.europa.eu (2015 data), and climate-zone.com, unless otherwise stated.***¹ The qualitative reflections are based on a literature reviews and desk-research. References for the literature review and the desk-research are provided in footnotes or in section five.

Section 2 summarises the nationally based sustainable energy consumption initiatives (SECI) that have been identified as part of ENERGISE WP2 framework (Jensen, 2017). Each SECI has been coded according to the Problem Framing Typology developed in ENERGISE WP2 (Jensen et al, 2017b).

Section 3 provides a *good practice* example of a national SECI that corresponds to category 3: “Changes in Everyday Life” or 4: “Changes in Complex Interactions” in the Problem Framing Typology. Please refer to Jensen (2017) and Jensen et al (2017b) for more information on the way the data for the good practice SECIs has been researched and documented.

Section 4 provides a brief summary of major nationally specific trends and their implication for energy consumption policies.

Section 5 provides an overview of sources used for qualitative assessments, and can be used as inspiration for further reading.

The national briefs provide contextual socio-material information for the further work to be carried out in Work Package 4, Work Package 5 and Work Package 6 in ENERGISE.

1.1 WP2: TYPOLOGIES OF ENERGY INITIATIVES

ENERGISE WP2 is a systematic criteria-guided review and classification of existing sustainable energy consumption initiatives from 30 European countries (EU-28, Switzerland, and Norway), which provides a comprehensive European database of energy initiatives involving households, and related typologies of sustainable energy consumption initiatives. This extensive synthesizing work guides the selection of Living Lab design elements for ENERGISE and future energy consumption research, policy and practice.

¹ Some piecharts will be empty, as no information is available.

This is done in order to

- Construct innovative typologies of sustainable energy consumption initiatives that can inform further research and action.
- Identify key success factors and related indicators, focusing on individual-level, collective, organizational, institutional and societal aspects of energy consumption, which will inform subsequent WP 3 (Designing Living Labs), WP 4 (ENERGISE Living Labs) and WP 5 (Capturing Energy Cultures).
- Progress the goals of the European Energy Union by creating a publicly archived open access dataset of sustainable energy initiatives across 30 countries in Europe.

Suggested further reading:

Jensen (2017) *Identification of key success factors and related indicators*. ENERGISE – European Network for Research, Good Practice and Innovation for Sustainable Energy, Grant Agreement No. 727642, Deliverable 2.2.

Jensen et al. (2017a) *Establishment of a comprehensive open access dataset of sustainable energy consumption programmes and Interventions*. ENERGISE – European Network for Research, Good Practice and Innovation for Sustainable Energy, Grant Agreement No. 727642, Deliverable 2.3.

Jensen et al. (2017b) *Constructions of typologies of sustainable energy consumption initiatives (SECIs)*. ENERGISE – European Network for Research, Good Practice and Innovation for Sustainable Energy, Grant Agreement No. 727642, Deliverable 2.4.

Sources of quantitative statistics (unless otherwise stated):

Climate data:

<http://www.climate-zone.com/continent/europe/>

Demography data:

http://ec.europa.eu/eurostat/statistics-explained/index.php/Population_structure_and_ageing

http://ec.europa.eu/eurostat/statistics-explained/index.php/Educational_attainment_statistics

Dwelling type data:

[http://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Distribution_of_population_by_dwelling_type_2015_\(%25_of_population\)_YB_17.png](http://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Distribution_of_population_by_dwelling_type_2015_(%25_of_population)_YB_17.png)

Energy demand and supply quantitative data:

http://ec.europa.eu/eurostat/statistics-explained/index.php/Energy_consumption_in_households

Final energy consumption of households per capita data: <https://www.eea.europa.eu/airs/2017/resource-efficiency-and-low-carbon-economy/household-energy-consumption>

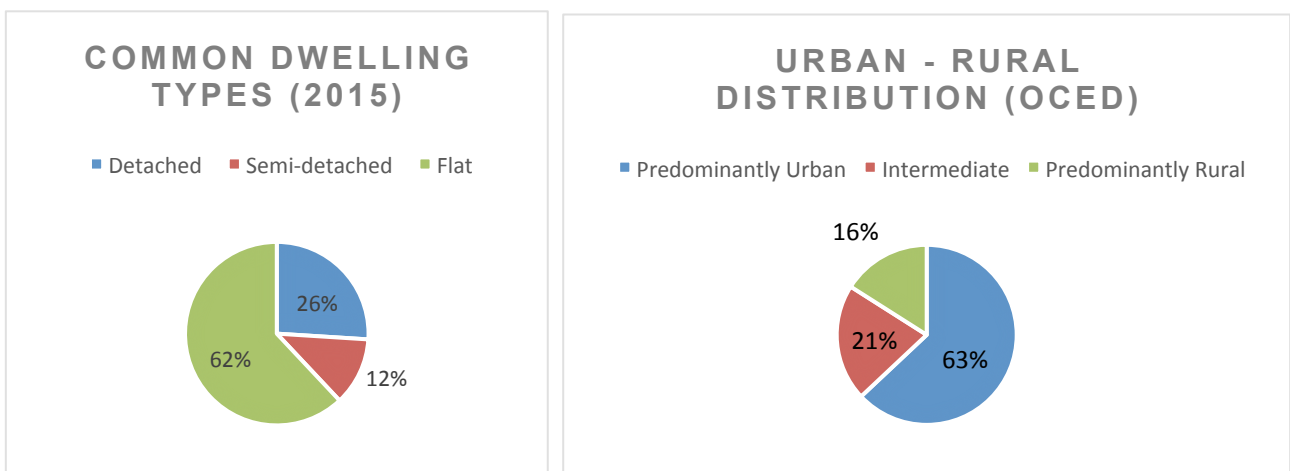
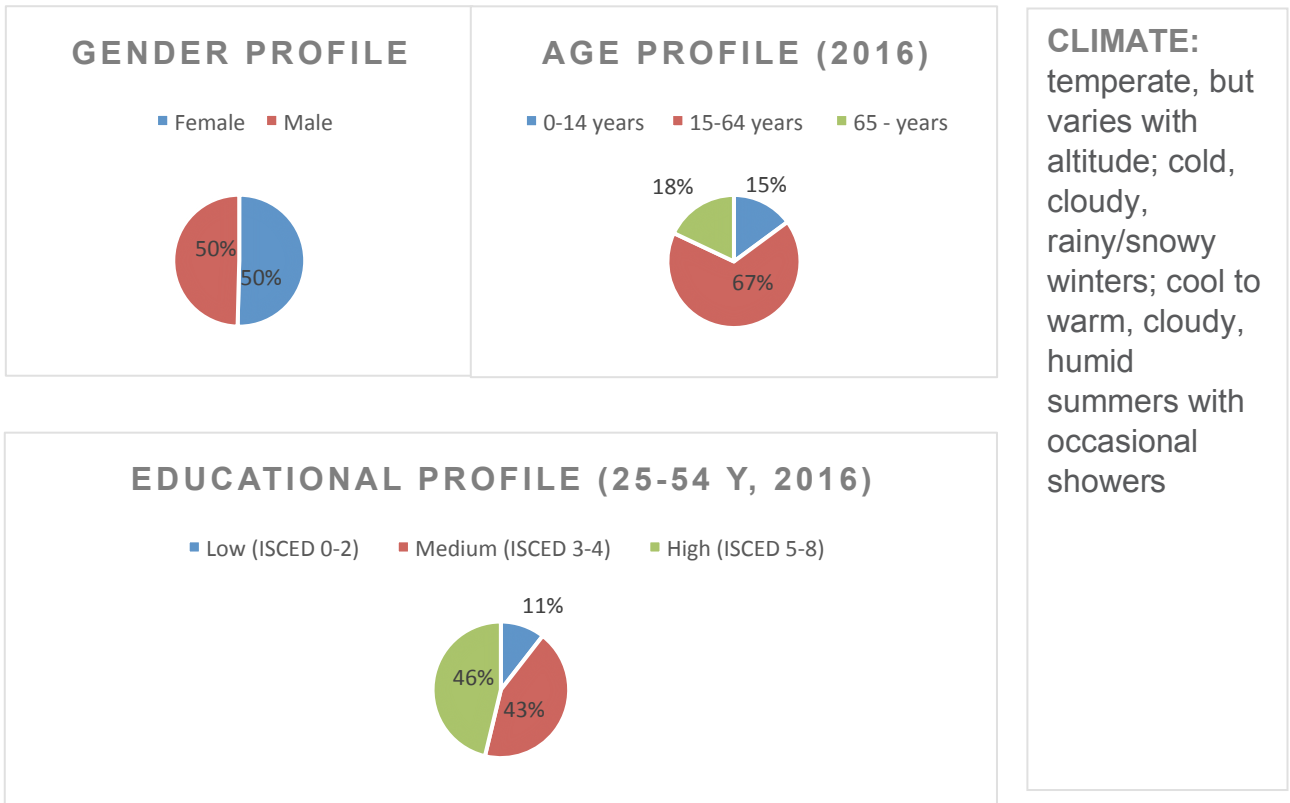
MWh conversion data:

<https://www.unitjuggler.com/convert-energy-from-toe-to-MWh.html?val=893.9>

SWITZERLAND

Authors: Laure Dobigny, Marlyne Sahakian

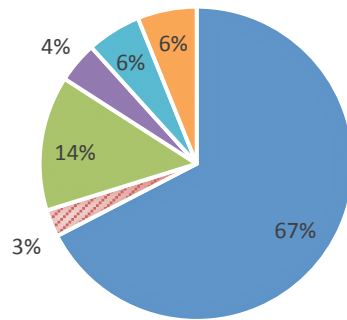
DEMOGRAPHY, ENERGY CONSUMPTION AND ENERGY SUPPLY²



² Quantitative data for the energy consumption statistics presented in this section is not from eurostats, but from a compatible Swiss source Prognos (2016, data from 2015). The urban-rural ration statistics is from OFS (2017, data from 2012). Please note that some categories differentiate from piecharts in remaining briefs.

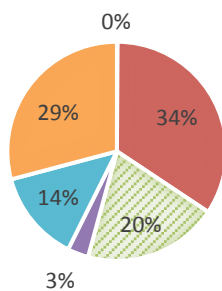
RESIDENTIAL FINAL ENERGY CONSUMPTION BY TYPE OF END-USE (2015)

■ Space heating ■ Space cooling ■ Water heating ■ Cooking ■ Lighting and appliances ■ Other



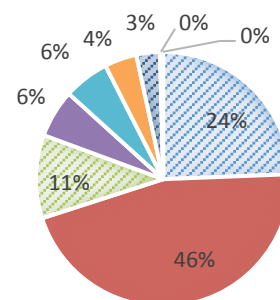
SHARE OF FUELS IN THE FINAL ENERGY CONSUMPTION IN THE RESIDENT. SECTOR (2015)

■ Solid fuels ■ Petroleum products
 ■ Gas ■ Derived heat
 ■ Renewable energies ■ Electrical energy



SHARE OF FUELS IN FINAL ENERGY CONSUMPTION - RESIDENT. SPACE HEATING (2015)

■ Natural Gas ■ Oil ■ Wood
 ■ Ambient Heat ■ Electricity ■ District Heating
 ■ Heat Pump ■ Solar ■ Coal



ENERGY SYSTEM AND ENERGY POLICY TRENDS

Energy system

The Swiss energy system is mainly composed of local energy companies (for electricity, gas and district heating), and mainly public (sometimes public-private) in which case energy companies are accountable to the municipalities. Some energy production cooperatives (citizen-led and producing renewables, such as “Energiegenossenschaft” - Energy cooperative, or Optima Solar) and private companies exist, but they are marginal compared to the public local companies (providing energy production and distribution). In addition, new consortiums between citizens and local public companies are emerging, especially in renewable energy generation (implementation of RE plants with financial participation of citizens), e.g. in Delémont or Yverdon-les-Bains.

Heating is mainly provided by fossil energy (mainly by fuel, and by gas), with central heating in buildings and with estimated individualized heating bills for apartment units (and very little possibility to directly influence on heating, for apartment units). Electricity is mainly produced by hydroelectricity (59,9% - SFOE 2016) thus by nuclear energy (33,5%).

Particular socio-material aspects that influence energy consumption

Beyond private homes and metering, there is little opportunity to understand individual consumption for heating in apartments, as these are often calculated on an annual basis and bundled in with other utilities. Minergie is the energy efficiency label in Switzerland, which proposes floor heating and entails a fine tuning of hydraulic valves for adapting indoor temperatures. The “performance gap” between these highly-energy-efficient buildings and usage is well understood in Switzerland, by engineering companies and developers. Thermostats in apartments are very unusual. Owning secondary residences in the mountain areas, a popular destination for weekends and holidays, has implications for transport and heating.

The adage “clean and in order” is a strong social norm around cleanliness and tidiness, which has implications for laundry and cleaning. It is not unusual for apartment buildings to have a shared laundry facility, for washing and drying clothes (e.g., in a heated room in the basement), yet the trend is towards private ownership. Laundry machine purchases have grown exponentially in the past decades.

Preparing and sharing meals has a strong positive social connotation, which relates to energy used for storing and cooking foods. The emblematic shared meal is the Swiss fondue, cooked over burning fuel at the table! There is a strong “slow food” movement in Switzerland, involving community supported agriculture, the nose to tail movement, among others.

Private cars are the preferred means of transport for many, public transport is quite efficient and car/bike sharing is becoming more popular. There are also public events to “slow down”, involving biking and walking in city centres.

Smart technologies are in a pilot phase, but a recent report by the Swiss government signals such technologies as on the rise – put forward with the hope of engendering greater energy efficiencies.

Current Trends in Energy Policy

Partly due to a reaction to the Fukushima nuclear disaster, Switzerland has adopted a “2050

Energy Strategy". This strategy implies an energy law, which was adopted through a citizen referendum in May 2017. The first measures of the energy strategy are: lowering energy consumption, improving energy efficiency and promoting renewable energy. New nuclear power plant construction is forbidden. A progressive nuclear phase-out is planned. To set up these objectives, the government is promoting:

- Refurbishment of buildings (monetary incentives for owners to switch from oil heating systems by heat pump, or towards insulation works)
- Energy efficiency for appliances (monetary incentives) and cars (binding legislation)
- Promoting RE (monetary incentives by a system close to feed-in tariff in other European countries)
- Implementing smart metering in household
- Promoting RE self consumption among households and at the neighbourhood level
- Supporting research in energy transitions, focused mainly on technical innovations, but also a more modest sum dedicated to socio-economic aspects of energy production and consumption.

Trends in national campaigns













Individual actions and efficiency are mainly being promoted: e.g. tuning off lights and appliances, changing old energy-intensive appliances by more efficient appliances (e.g. fridge), technical changes in the household (e.g. buying LED bulbs, by offering a special discount), etc.
















There are some efforts to promote solidarity between the so-called Global North and Global South: initiatives to save energy in Switzerland, with savings invested in RE energies elsewhere.
















Given the recent funding of academic projects on energy consumption, there have been local campaigns that are based on community-level and participative actions towards sustainable mobility, for example. In general, the public transport system is quite efficient across the country (save for the more remote areas), bikes are popular though not nearly the "rulers of the road" as compared to private cars; car-sharing has a long history, through the Mobility cooperative and its partnership with the national rail system and a bike sharing platform.

OVERVIEW OF NATIONAL SECIS

Below please find a list of Swiss SECIs that have been researched and documented through WP2 of ENERGISE. The SECIs are researched, selected and documented based on a set of requirements and research interests (please see Jensen 2017 for details). *The list should not be regarded as exhaustive or representative of all kinds of energy initiatives carried out in the country.*

Eco-social actions		Changes in Individuals' Behaviour
Ecohousing (eco-logement)		Changes in Individuals' Behaviour
Doubléco - Activéco		Changes in Individuals' Behaviour
Equiwatt		Changes in Technology
Suisse energy		Changes in Individuals' Behaviour
OFF		Changes in Individuals' Behaviour
Declic / Eco-family		Changes in Everyday Life Situations
The sustainability of sustainable behaviours (La durabilité des comportements durables)		Changes in Everyday Life Situations
Eco energy Etoy (EEE)		Changes in Complex Interactions
Solar Plus		Changes in Technology
Soleysin		Changes in Complex Interactions
Photovolpotat		Changes in Complex Interactions

Optima Solar schweiz		Changes in Complex Interactions
Climat in our hands		Changes in Individuals' Behaviour
Equisol		Changes in Technology
Energy cooperative - Geranium campaign (Energiegenossenschaft)		Changes in Complex Interactions
Sun-Power		Changes in Complex Interactions
RE transition Delémont SID		Changes in Technology
Solar plant Yverdon-les-bains		Changes in Technology
Local Energy Independence (Cernier)		Changes in Complex Interactions
Carbon Conversations		Changes in Everyday Life Situations
SolarSupport / Sebasol		Changes in Everyday Life Situations
Sports club mobility intervention - national research project		Changes in Everyday Life Situations
Towards societal consensus – Futures Wheel approach, national research project		Changes in Complex Interactions
On débranche - national research project		Changes in Complex Interactions
Unplugged kids day/week		Changes in Everyday Life Situations
Road Lab		Changes in Individuals' Behaviour

Robin des Watts		Changes in Individuals' Behaviour
Social Power Project		Changes in Everyday Life Situations
Energy week		Changes in Individuals' Behaviour
Transition cities		Changes in Complex Interactions
Big Effects - Swiss Energy Tour		Changes in Everyday Life Situations
City of energy - Société 2000 watts		Changes in Complex Interactions
Bike4Car campaign		Changes in Everyday Life Situations
Noe21 Communications Campaign		Changes in Complex Interactions
Top Ten website		Changes in Technology
Energy observatory (Observatoire de l'énergie)		Changes in Everyday Life Situations
Monthoux Minergie (buildings)		Changes in Everyday Life Situations
Pumpipumpe		Changes in Everyday Life Situations
Publi Bike		Changes in Everyday Life Situations
La Bonne Combine (the good deal)		Changes in Everyday Life Situations
Makerspace		Changes in Everyday Life Situations

‘GOOD PRACTICE’ EXAMPLE OF SWISS SECI

PumpiPumpe

Description

Launched in Switzerland in 2012, PumpiPumpe is about sharing appliances and other household items between neighbours. According to Sahakian (2017), the founders, Lisa Ochsenbein (Zurich) and Ivan Mele (Bern), are product and process designers respectively, and were sharing a workspace in 2012 when they came up with the idea of creating a way for people to share everyday household items. Ochsenbein had moved around quite a bit and realized that she did not use many of her possessions, which were left unpacked in moving boxes. In developing a sharing platform, the duo decided to work at the level of neighborhoods, where they saw enormous potential. They came up with the idea of using the mailbox as a personal space and communication tool: the Pumpipumpe sticker system allows people to place directly on their mailbox specially designed labels illustrating different household items (e.g., drill, ladder, books, toys) that they are willing to share. More than 15,000 households in Switzerland, Germany, and Austria have ordered these stickers, but the association does not keep track of who is using them and what sharing activities are actually taking place. Recently, though, Pumpipumpe launched an online map that allows people to view approximately 9,450 addresses where objects are available for sharing (2018). In the future, Ochsenbein envisions a smart phone application for identifying different available items in a given area, but for this, additional funding would be necessary. Beyond virtual connections, she emphasizes the importance of the “real, live network” as she put it, or ‘the actual network around us [neighborhood and immediate community] is really underdeveloped.’”

Contextualization

In Switzerland, where this project originated, there tends to be an accumulation of household appliances, with a focus on ownership. But at the same time, there is a tradition of second hand stores and sharing among neighbours and friends. Pumpipumpe wanted to create opportunities for sharing at the scale of a neighbourhood, so as to reduce the purchase of household items but also prompt people to think about product and service design, inspired by the cradle-to-cradle design philosophy. As quoted in Sahakian (2017), “Sharing makes sense in the material world as we have it today and would make sense in a world where we have very intelligent products, which go back into recycling,” she explained. Ochsenbein feels that Pumpipumpe could ultimately influence purchasing decisions: “How we buy, how we select. If you see that there are already two pasta machines in your neighbourhood, you know you don’t need to buy one,” leading to less material throughput in the economy and less waste.

Aims and objectives

The aim of the project Pumpipumpe is to reduce the purchase of household items, while promoting the sharing of consumer goods and community relations. A secondary objective is to prompt a change in how products are designed, with longevity-by-design in mind.

Objectives highlighted:

- Stand up for a conscious use of our consumer goods
- Promote the sharing of our rarely used personal belongings / sustainable way to use consumer goods in their own neighbourhood,
- Build a local network / improve social interaction in urban neighbourhoods / get to know their neighbours better



- Buy less / reduce purchase of household items
- Make sharing-friendly neighbours and their objects visible.
- It does not necessarily happen on the Internet, but where neighbours and local residents walk past every day.

Methods for intervention

- Online website, where people can order stickers
- Online interactive map, launched in 2012, where people can see what is available for sharing in their neighborhood
- Stickers can also be ordered in partner shops or by Pumpipumpe ambassadors, or individuals who purchase several sheets of stickers to share them with their contacts.
- Mailings are handled through social reinsertion programs, or the employment of people who are job searching or developing new skills
- Public relations, and primarily press articles and media coverage put forward on the Pumpipumpe website.

Steps of implementation

- October 2012: Project was founded by two people in Bern, Switzerland.
- Since September 2014: Pumpipumpe project is an association and non-profit organization.
- Since May 2015, a Pumpipumpe map is available online, featuring stickers and locations.

Results/outcomes

Worldwide, approximately 9,450 letterboxes have Pumpipumpe stickers. The majority are in Germany, Switzerland and France, but mailboxes with Pumpipumpe stickers can be found across Europe, and some letterboxes in Russia, America, Asia, etc.

One drawback is that the association has not been tracking the actual sharing taking place, there is no information currently on this aspect. This is a weakness of the project, as we only know what sticker have been sent out, and there is no information on what sharing is taking place.

Objective(s)	Outputs/intervention methods	Evaluation indicators	Outcomes
Sharing devices	Promote sharing by making visible on your mailbox available household items	Online order and registration by participants (if voluntary)	9,450 letterboxes worldwide

The role of the households

Households need to order stickers online and pay 5CHF/5€ per order, which pays for shipping and handling. Participants share devices and other household stuff, in their

neighbourhood. Participants are free to share their tools, kitchen appliances or toys with their neighbours, however they see fit. Nevertheless Pumpipumpe promotes the free sharing (not renting for money) of personal belongings.

Location

The association is based in Bern and Zurich (Switzerland), but stickers are sent worldwide, mostly in urban cities.

Was/is the initiative successful?

In total, 9,450 letterboxes with Pumpipumpe stickers are available across the world, with a large concentration in some neighbourhood, mostly in urban cities and located in Germany and Switzerland. But how the stickers are used and the actual impact in terms of sharing and reducing new purchases has not been measured.

Textual and communicative aspects of initiative

The communications are not moralistic, Pumpipumpe simply proposes a means for sharing devices between neighbours. The initiative is most likely addressed to people already convinced by the idea of sharing devices and developing neighbourhood relations, or to people who have not yet considered sharing, but are open to sharing and engaging in the initiative. The stickers are composed solely of graphically-designed images (no text) to facilitate the exchange between neighbours, without difficulties of language or legibility.

The physical/technological aspects of the initiative

Putting stickers on mailboxes to see which device the neighbours share is more adapted to apartment building and not to individual house. Indeed, in case of individual homes, you would need to see each mailbox from each house to know which device is shared. In apartment buildings, mailboxes are closer together and shared devices (with stickers) are directly visible. There may be issues in buildings where stickers on mailboxes are not permitted. Since May 2015, to resolve this problem, a Pumpipumpe map is accessible online that displays the stickers geographically, with the agreement of the participants. The map is anonymous; it shows where what kind of object can be borrowed in the area.

Shared understandings related to initiative

- Sustainable consumption of goods
- Sharing devices, goods
- Buying less devices used once per year / producing less devices / throw away less
- Local networking / promote social relationships in neighbourhood.

CONCLUDING REMARKS AND POLICY IMPLICATIONS

A specificity in Switzerland is the number of initiatives led by research teams. This is due to an ambitious national research policy that supported research programs on energy issues, in the past decade. As a result, numerous initiatives aimed at improving household energy usage (and systems more generally) are underway in Switzerland, engaging with innovative processes such as living labs, action research, gaming, etc., with new collaborations underway between municipal actors, energy companies and researchers. There was a specific focus on socio-economic approaches to energy, in addition to technical developments, which further emphasized the important role in supporting social sciences and the humanities in relation to energy transitions. This lesson from Switzerland could inform European policy, towards further supporting research-action.

Another interesting development has emerged in relation to renewable energies (RE), and due to the specificity of the energy sector in Switzerland (e.g., mainly composed of local and public energy companies, responsible for energy production and distribution). To achieve the 'turn' toward renewable energy resources, collaborations are underway between utility providers and citizen groups. This is an original development in Switzerland, situated between large-scale RE implementation led by utility companies, and small-scale citizen cooperatives.

Swiss SECIs reflect the specificity of energy consumption in Switzerland, such as the significance of individual car usage. Several SECIs therefore propose initiatives aimed at changing mobility options, by promoting biking and e-biking, bike and car sharing, or public transport usage (for example, Bike4car and Publi Bike). On another hand, Swiss SECIs reflect tendencies observed elsewhere in Europe: low-income households tend to be more targeted than middle- or high-income households (for example, the eco-social actions led by energy providers in Geneva and Lausanne), although new initiatives are underway to target home owners and middle-class households (for example, an eco-housing action led by an energy provider in Geneva). Moreover, a majority of SECIs target individual behavior and energy efficiency (technical change, refurbishment, eco-actions, etc.), rather than sufficiency and social norms around energy consumption. Pumpipumpe offers a counter example, in this respect: without large costs, the initiative aims to have a high impact on practices and representations of ownership, consumption, sharing, etc., and promotes a sufficiency-based lifestyle. This type of initiative does have an impact at the national and international scales, as the problem of "over consumption" is common to other countries of the Global North, and citizens across Europe and elsewhere have already demonstrated their interest by ordering Pumpipumpe stickers. This international diffusion and success is no doubt due to the simplicity of its design and functioning. There is also coherence between the message (less consuming and more sharing) and the action type (simple to use, appropriable by all, exchange facilitating, etc.). The tendency of increasing technological complexity (smart grid, smart appliances, smart homes, etc.) could be counterproductive when it comes to promoting a more sustainable and sufficient lifestyle if we are to follow this example.

A second lesson learned from the Swiss SECI to inform European policy, is to account for coherence: the design and functioning of an initiative should be aligned with the message – such as promoting sufficiency.

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