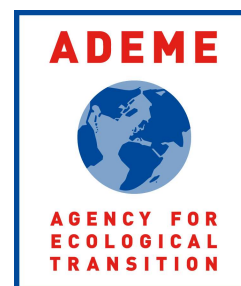


HEATING AND COOLING  
KNOWHOW AND SOLUTIONS



## Deliverable 6.4 *Interim report gathering HACKS case-studies*

### HACKS' success stories in reaching different types of stakeholders

Grant Agreement N° 845231

**Therese Kreitz**  
ADEME, French Agency for Ecological Transition

**March 2023**

HACKS coordinator: ADEME – [www.ademe.fr](http://www.ademe.fr)

European portal [www.topten.eu/hacks](http://www.topten.eu/hacks)

Project partners and websites

Austria, AEA  
[www.topprodukte.at](http://www.topprodukte.at)

Belgium, BBL  
[www.topten.be](http://www.topten.be)

Czech Republic, SEVEn  
[www.uspornespotrebice.cz](http://www.uspornespotrebice.cz)

France, Guide Topten  
[www.guidetopten.fr](http://www.guidetopten.fr)

Germany, co2online  
[www.topeffizient.de](http://www.topeffizient.de)

Italy, Eliante  
[www.topten.it](http://www.topten.it)

Lithuania, LNCF  
[www.ecotopten.lt](http://www.ecotopten.lt)

Luxembourg, Oeko-Zenter  
[www.oekotopten.lu](http://www.oekotopten.lu)

Norway, Naturvernforbund  
[www.energismart.no](http://www.energismart.no)

Poland, FEWE  
[www.topten.info.pl](http://www.topten.info.pl)

Portugal, Quercus  
[www.topten.pt](http://www.topten.pt)

Spain, ECODES  
[www.eurotopten.es](http://www.eurotopten.es)

Sweden, SSNC  
[www.toptensverige.se](http://www.toptensverige.se)

Switzerland, Bush Energie  
[www.topten.ch](http://www.topten.ch)

UK, EST  
[www.toptenuk.org](http://www.toptenuk.org)

Politecnico di Milano  
[www.eerg.polimi.it](http://www.eerg.polimi.it)

Editor: Therese Kreitz, ADEME, [therese.kreitz@ademe.fr](mailto:therese.kreitz@ademe.fr)



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 845231.

The sole responsibility for this content lies with the authors. It does not necessarily reflect the opinion of the European Union. Neither the CINEA nor the European Commission are responsible for any use that may be made of the information contained therein.

## About HACKS

The objective of the Heating and Cooling Knowhow and Solutions (HACKS) project is to achieve market transformation for heating and cooling (HAC) appliances and improve comfort and health of European citizens.

Across the EU almost half of all buildings have individual boilers that were installed before 1992 with efficiency of 60% or less. The expected energy savings from a speedy replacement are immense.

To achieve this goal, 17 HACKS partners in 15 countries worked together, thanks to the financial support of the European Horizon 2020 programme.

After scanning market actors, current policies and most commonly used products in each country, starting from April 2020 the HACKS partners have implemented involvement campaigns to raise awareness of the economic and environmental benefits brought by good HAC products and solutions:

1. HACKS has motivated households equipped with old and inefficient devices – boilers, water heaters, air conditioners, certain types of boilers and stoves, etc. – to replace them with new super-efficient equipment.
2. In each country, partners have set-up dedicated on-line platforms to assist consumers in their purchasing process. The platforms propose: tools to assess households' needs and provide customised information; best product lists with technical specifications; direct links to suppliers of most efficient products; and advice on how to use and maintain equipment.
3. For those households who need to improve their situation because they feel too hot, too cold, or too humid but who cannot invest in new equipment or can avoid getting equipped, HACKS proposed simple and low costs solutions. It is possible to reduce energy consumption and energy bills while improving winter and summer comfort, air quality and health conditions through the installation of shading devices, thermostats, water saving taps and showerheads, etc.

Beyond households, HACKS has targeted all relevant stakeholders (“multipliers”) that participate in the decision-making process of consumers by setting up strategic partnerships to facilitate the purchase of energy efficient appliances. HACKS placed a strong emphasis on installers but also retailers and consumer organisations because of their proximity to consumers, their capacity to involve them and bring them guidance on energy efficient equipment.

More information on the HACKS project can be found at [www.topten.eu/hacks](http://www.topten.eu/hacks). Most national HACKS website will remain active after the end of the project.

## Table of Contents

<b>Introduction</b> .....	<b>6</b>
---------------------------	----------

### ***Communication***

Italy: Tackling Winter 2022 – 2023 with DIY videos.....	<b>7</b>
Germany: Summer days lead to hot press release.....	<b>9</b>
UK: Winter ad campaign and the importance of context.....	<b>11</b>
France: Social networks versus Display campaigns.....	<b>12</b>
Spain: Accessible graphic materials for people with disabilities .....	<b>14</b>
Belgium: Reaching a target audience thanks to adapted keywords .....	<b>16</b>
Austria: Infographic - Climate-friendly through the heating season .....	<b>17</b>
Poland: Consumer education through comic books .....	<b>19</b>
Italy: A resilient communication strategy - Energy saving in times of smart working .....	<b>21</b>

### ***Reaching out multipliers and consumers***

Sweden: A quiz between neighbouring countries: who is the master of energy efficiency?.....	<b>23</b>
Czech Republic: HACKS cooperation with Czech energy utility Centropol.....	<b>25</b>
UK: HACKS calculator case study.....	<b>26</b>
Germany: 600 questions about heat pumps – online seminar for consumers .....	<b>28</b>
Austria: Physical presence at a fair for 2 days, meeting different attendees.....	<b>29</b>
Sweden: Using Top Ten HACKS to create teaching materials .....	<b>30</b>
Luxembourg: Reaching out consumers with the help of the municipalities.....	<b>32</b>
France: Topten as an expert in a multiplier’s publication.....	<b>34</b>
Portugal: Joining EU campaigns to promote national website.....	<b>35</b>

### ***Collaboration with retailers, installers, industry***

Poland: Market transformation - Competition for best windows.....	<b>38</b>
Spain: Comfort fans for vulnerable households .....	<b>40</b>
Norway: Energy Expert - Highlighting the Superheroes of the low Energy Society ...	<b>42</b>
Switzerland: Internet of Things Monitoring – providing installers with tools to make efficient technology even more efficient.....	<b>44</b>
Portugal: Collaboration with a professional association.....	<b>46</b>

### ***Support to housing associations***

Lithuania: Towards energy-efficient and green multifamily houses .....	<b>48</b>
Sweden: Top Ten as a simple tool for homeowners to evaluate energy efficiency measures.....	<b>50</b>

### ***Participation in a research project***

Switzerland: Research Project “Heating with Air Conditioners” .....	<b>51</b>
---	-----------

### ***Policy input***

Czech Republic: Using the HACKS efficiency criteria for solid fuel boilers and local space heaters in the New Green Savings subsidy programme .....	<b>53</b>
Luxembourg: Heat transition - How HACKS contributes to an attractive rebate programme in Luxembourg.....	<b>54</b>
Switzerland: Local rebate programme at the start of a long endeavour.....	<b>56</b>
Belgium: Networking stakeholders around HACKS .....	<b>58</b>
Lithuania: Advocacy for broader use of energy-efficient heating equipment .....	<b>59</b>
Norway: The Oil ban - How we banned fossil oil heating.....	<b>61</b>

## Introduction

The HACKS project is a market transformation project which uses many "soft measures" within its toolbox. By providing quality information on current best available products and advice on how to improve households' heating and cooling situations and by working with different target groups, it shifts the market, acts as a facilitator, an education tool, a decision-making aid.

Its quantitative impacts are best understood in the framework of an evaluation that also includes qualitative aspects. Since the HACKS project impacts the market and citizens in many different ways, in order to contribute to the qualitative evaluation of the project, this document gathers a few illustrations of the HACKS's wide range of activities.

Since September 2019, despite the Covid pandemic and the war in Ukraine triggering an energy and economic crisis, HACKS partners were able to undertake many activities, among which those depicted in the following 32 case studies. They illustrate success stories and achievements that helped accelerate market transformation, emerging from:

- **Communication activities:** Austria and Poland chose to communicate on the heating and cooling themes using non-technical language in simple infographics and a comic book; Spain worked on communication material to better reach people with disabilities; Italy implemented a resilient communication strategy, and later developed DIY videos to improve comfort and reduce energy bills; Germany, UK, France, and Belgium presented detailed aspects of communication that weight in the success of a communication campaign (season, images and their formats, good key words, etc.).
- **Reaching out multipliers and consumers:** Sweden used humour and eagerness to compare with neighbouring countries to raise interest, and also targeted teachers by developing teaching materials; Czech Republic developed content for a utility and its customers; France used its position as energy expert to reach out professionals; Germany organised an on-line webinar with professionals answering consumers' questions, whereas Austria participated in a fair to directly answer questions; UK was successful in promoting the HACKS heating calculator; Luxembourg used municipal publications to reach citizens; Portugal joined European campaigns on HAC topics.
- **Collaboration with retailers, installers, and industry:** Poland organised a competition for best windows; Spain targeted energy poor consumers with the help of a retailer and the social services; Norway highlighted workers that are specialists in the building sector; Switzerland supported installers with technical information; Portugal cooperated with the sanitary tapware professional association.
- **Support to housing organisations:** Lithuania supported the Housing Energy Efficiency Agency, whereas Sweden's product lists served as a basis to identify best products to stimulate the use of energy savings certificates.
- **Participation in research projects:** Switzerland studied in a two-step project the savings that could be achieved by using efficient air conditioners for heating.
- **Inputs to the policy process:** Czech Republic and Luxembourg managed to have the HACKS/Topten technical criteria used by their government in national rebate programmes; Switzerland illustrates how a rebate programme could feed in the new European regulation for comfort fans; Belgium gathered partners from its different regions into a HACKS network; Lithuania participated in a consultation on the Recovery and Resilience Facility plan, Norway supported the strategy banning fossil fuel heating.



## Italy: Tackling Winter 2022 – 2023 with DIY videos

The energy crisis triggered by the Russian invasion of Ukraine has put the issue of reducing energy consumption at the centre of public attention. The topic of reducing energy consumption has finally become of great interest (for public administrations, media, companies and households) and this was undoubtedly an opportunity for the HACKS project to seize.

But in the context of the economic crisis generated by the energy crisis, insisting on messages too much related to the need to install very efficient but at the same time expensive HAC equipment could have failed, generated negative feedback and failed to reach certain targets, such as low-income households. This is because the installation of very efficient technologies (e.g. heat pumps) requires a lot of effort, not only economically, but also in terms of planning, timing, choices to be made, parties to be involved (designers, installers, financiers), permits to be applied for (including possible government incentives), etc. All these aspects were not suited to the need to address a crisis with extremely immediate and concrete effects.

For this reason, the choice made by Eliante was to launch a campaign in the winter of 2022-2023 aimed at promoting solutions to reduce consumption at zero or near-zero cost, intended for a target as generic and broad as possible. To this end, the advice to be conveyed had to be: simple, concrete, useful and very economical. Furthermore, the achievable savings had to be quantified (even approximately).

The chosen tool was to make videos with real actors (a film maker was involved) and the main dissemination tool chosen for the videos was social media (especially Facebook, where sponsorships were also made). The videos were also uploaded on Eliante's YouTube page and on the Topten.it portal.

A total of 3 videos were made and for each of them a shorter version was made for the social networks:

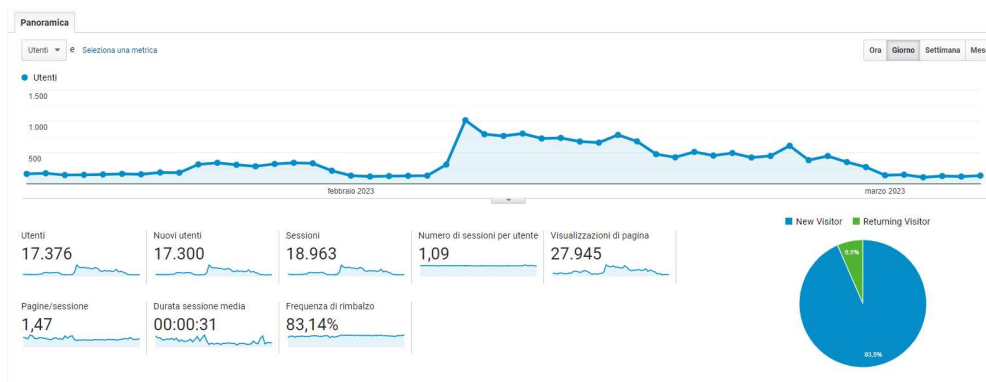
- Video 1 “Come isolare i termosifoni” –this video shows a very specific topic (how to insulate radiators), providing very practical advice, at the level of home DIY (Do It Yourself). This video managed to go viral.
- Video 2 “8 azioni per risparmiare + una speciale” – the second video provides practical suggestions for 8 different zero/almost zero-cost actions to be carried out at home.
- Video 3 “8 emoji per risparmiare” – also the last video provides 8 practical suggestions, with the peculiarity of graphically matching the advice to an emoji.

### **Results achieved**

The campaign had a positive effect and there were many more interactions than in previous campaigns within the HACKS project. Below the results of the Facebook campaign:

	Views	Impression	Cost per action
<b>Video 1</b>	49.000	262.000	0,069 €
<b>Video 2</b>	60.000	206.000	0,089 €
<b>Video 3</b>	24.000	91.000	0,096 €

The success on social media also generated a sharp spike in visits to the site, which rose from an average of around 150-300 of the previous days to around 1000 per day on 6<sup>th</sup> February 2023:



### Lessons learned

Overall, the success of the 3 videos (and particularly the first one) demonstrated how important it is to be able to develop communication strategies that can dynamically adapt to the changing conditions of the general context.

### More information

Fabio Tognetti, Eliante [tognetti@eliante.it](mailto:tognetti@eliante.it)

Link to the Facebook posts:

<https://www.facebook.com/eliante milano/videos/1243228302934244/>

<https://www.facebook.com/eliante milano/videos/5771843326232884/>

<https://www.facebook.com/eliante milano/videos/1196719210972640/>

Link to the news on the web-portal Topten.it <https://topten.it/private/article/isolare-il-tuo-termosifone-un-video-per-realizzarlo-in-pochissimi-passaggi>





## Germany: Summer days lead to hot press release

Due to the ongoing climate change, the heat days with over 30 degrees Celsius tripled over the last 50 years in Germany. As a result, the German consumers explore for their home technologies they were not used to: cooling solutions like comfort fans or air conditioning systems.

Therefore, co2online developed within the HACKS project product lists, infographics and online articles on those cooling solutions for consumers and multipliers. To raise more awareness on the topic of heat protection and promote the HACKS content, co2online launched in summer 2021 and 2022 social media campaigns and e-mail marketing measures. The conversion of the online consumer outreach campaign went well, but the media did not pick up the content as hoped in 2021 and early summer 2022. Because at the end, timing is everything.

co2online had prepared a simple press release, pointing out that air conditioning system use more energy than comfort fans leading to higher energy costs. The monthly energy costs of an efficient comfort fan count 4 Euro, whereas inefficient air conditioners can cost 80 Euro per month.

Within a hot summer week, co2online published on August 1, 2022 the prepared press release and the timing was right. Among many others, the biggest press agency “Deutsche Presseagentur” (dpa) picked up the news and so it was distributed to a large number of federal, regional and local media. In the end, over 282 media reported on this press release, which led to a reach of 30.1 million media contacts.

The lesson learned: Press releases can lead to a big reach, when the message is simple, when there is a simple calculation for the daily life of consumers and when the timing and weather is right.

DIREKTEXPORT

Grafiken



GESAMTBUZZ

282

Meldungen

30,1 Mio

Reichweite

NACHRICHTEN

**Wärme entweicht: Älteren Rollladenkästen selbst dämmen**  
 Durch einen undichten Rollladenkasten entweicht Luft aus dem Haus und damit im Winter wertvolle Heizenergie. Auch für Zugluft im Wohnraum sind die Kästen eventuell verantwortlich. Man kann aber etwas dagegen tun, indem man sie selbst dämmt. Laut den Verbraucherzentralen kann das bis zu zehn Euro Einsparung pro Quadratmeter und Jahr bringen. Das Material gibt es im Baumarkt und kostet 15 und 30 Euro pro Quadratmeter. Man nimmt entweder flexible Dämmplatten, die in den Kästen eingepasst und dort fixiert werden. Die Verbraucherzentralen raten aber zu Hochleistungs-Dämmplatten aus Polyurethan oder Phenolharz, da sie eine geringere Wärmeleitfähigkeit besitzen. Die Durchführung des Gurtes und der Rolladenkassette lässt sich mit einer Bürstendichtung ausstatten – für 10 bis 15 Euro pro Rolladenkasten. *dpa*

**Bei Hitze Strom sparen: Ventilator statt mobiles Klimagerät**  
 Der Wille zum Stromsparen mag da sein, aber an heißen Sommertagen muss man manchmal doch kapitulieren: Wer bei 30 Grad plus zu Hause harren muss, braucht Abkühlung durch Elektrogeräte. Aber Ventilatoren sind mit rund 50 Watt Leistung um ein vielfaches effizienter und damit günstiger im Verbrauch als mobile Energiespargeräte. So muss man laut der gemeinnützigen Beratungsgesellschaft CO2online für Tisch-, Decken-, Turm- und Standventilatoren mit monatlich vier Euro Stromkosten rechnen. Klimaanlagen verursachen durchaus schnell Kosten von rund 80 Euro im Monat. Tanja Loitz, CO2online-Geschäftsführerin, zählt die Geräte aufgrund ihrer meist schlechten Energieeffizienz daher auch



So geht es auch. Bei Arbeit, Sport und Spiel helfen Kleingeräte auch mobil. Foto: R. Blücher

zu den Spitzenverbrauchern im Haushalt. Auch bei den Anschaffungskosten ist man mit Ventilatoren besser dran: Es gibt Modelle ab 20 Euro. Gut zu wissen: Klimageräte sind in der Lage, die Raumtemperatur abzusenken – es ist also wirklich kühler. Ventilatoren können dies nicht, sie sorgen nur für Luftverwirbelungen. Diese nehmen wir als Luftzug auf der Haut wahr, der kühlt, heißt es in einer Mitteilung von CO2online. Der Luftzug beschleunigt die Verdunstung von Schweiß auf der Haut, da er die umgebende feuchte Luft durch trockenere ersetzt. *dpa*

**Hygiene in der Küche: Material ist bei Schneidebrettern wichtig**  
 Fleisch und Fisch schneidet man am besten auf einer Unterlage, die man sorgfältig säubern kann. Geht es um Hygiene in der Küche, eignen sich für bestimmte Aufgaben meist bestimmte Materialien besonders gut. Ein Beispiel dafür sind Schneidebretter. Sind die Bretter aus Kunststoff, kann man sie nach der Nutzung auch bei hohen Temperaturen in der Geschirrspülmaschine reinigen, erklärt das Forum Waschen. Ein Vorteil gegenüber Holz Brettern: die hohe Temperaturen auf Dauer nicht so gut vertragen. Daher sollte man besser Kunststoffbretter verwenden, wenn man etwa Fleisch oder Fisch zubereiten und schneiden will. Und alte Holz Bretter besser austauschen. Denn in Einschnitten und Kerben finden Bakterien eine gute Lebensgrundlage. *dpa*

Begehrter Brennstoff: Worauf es beim Kauf von Feuerholz für Öfen und Kamine ankommt

VON KATJA FISCHER UND SIMONE ANDREA MAYER

Wer einen Holzofen besitzt, könnte in diesem Winter klar im Vorteil sein. Denn angesichts drastisch steigender Preise für Gas und Öl ist Feuerholz eine Alternative, die es ermöglicht, die Zentralheizung erst später im Jahr anzuschließen und im Frühjahr eher auszuschalten. So lassen sich Energiekosten sparen.

Doch diese Rechnung geht für dieses Jahr wahrscheinlich nicht mehr auf. „Dieses Jahr noch trockenes Brennholz zu bekommen, ist fast unmöglich“, sagte Gerd Müller, Leiter der Geschäftsstelle des Bundesverbands Brennholz in Kamen, Anfang Juli. Oder anders gesagt: Wen Sie kennen oder auf ein Angebot im Handel stoßen: Sie haben vermutlich gerade Glück.

Aber wer einen Holzofen hat, muss meist ohnehin auf Vorrat kaufen – denn das Holz muss erst mal trocknen. Hier sind die wichtigsten Kennzahlen und Tipps für Ihre Vorsorge:

**Raummeter oder Festmeter?**

Brennholz wird oft in Raummetern (Rm) verkauft, auch Ster genannt. Manchmal ist in Süddeutschland zudem von Klafter die Rede. Bei einem Raummeter handelt es sich um einen Kubikmeter lose gestapeltes Holz einschließlich der Hohlräume, erläutert der Industrieverband Haus-, Heiz- und Küchentechnik (HKI) in Frankfurt. Zwischen dem Holz kann also viel Luft sein. Übrigens: Ein Klafter entspricht rund drei Raummetern.

Wird ein Kubikmeter Holz ohne Hohlräume gestapelt, handelt es sich um einen Festmeter (Fm). Das entspricht einem Würfel, der einen Meter breit, einen Meter hoch und einen Meter lang ist. Ein Schüttmeter (Srm) ist ein Kubikmeter lose geschüttetes Holz mit Hohlräumen.

Ofenbesitzer sollten beim Kauf daher auch auf die Einheit achten. Denn je nachdem, ob es sich um Weich- oder Hartholz handelt und abhängig von der Maßeinheit bekommen sie unterschiedliche Mengenangaben. So entspricht laut HKI ein Raummeter des harten Buchenholzes mit 33 Zentimetern Scheitlänge 1,48 Schüttmetern oder 0,62 Festmetern. Ein Raummeter des weichen Fichtenholzes mit der gleichen Scheitlänge sind 1,62 Schüttmetern und 0,64 Festmeter.

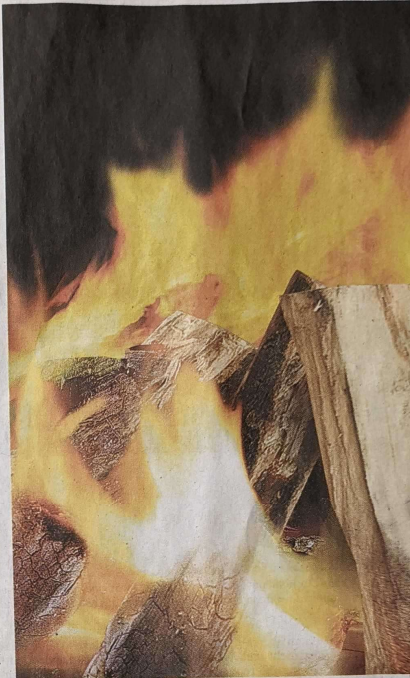
**Weich- oder Hartholz?**

Je härter das Holz, desto höher ist der Energiegehalt des einzelnen Scheits. „Klassiker für Einzelfeuerungsanlagen sind Buche, Birke und Eiche“, sagt Hans Hartmann vom Technologie- und Förderzentrum (TFZ) im Kompetenzzentrum für nachwachsende Rohstoffe in Straubing. „Sie sind praktisch, weil sie länger brennen als Weichholz.“

Weiche Hölzer bilden zum Beispiel Kiefer, Tanne und Fichte. „Wer damit heizt, braucht mehr Scheite und muss öfter nachlegen. Besonders schnell verbrennt Fichtenholz, deshalb wird es gern als Anzündholz genutzt“, so Andreas Walburg vom Bundesverband des Schornsteinfegerhandwerks in Sankt Augustin.

Bei einer üblichen Marktlage unterscheiden sich daher auch die Preise für Hart- und Weichholz deutlich. Ein Preisbeispiel vom Januar 2022: Während ein Raummeter Buchenscheite damals im Mittel 109,06 Euro kostete, mussten für einen Raummeter Fichte nur 82,75 Euro bezahlt werden. „Umgerechnet auf den Heizwert verschwinden die Unterschiede aber. Hier ist die Buche mit 7,09 Ct/kWh im Vergleich zu Fichte mit 7,27 Ct/kWh sogar leicht günstiger“, sagt Hans Hartmann. Wer Holz einkauft,

Gut Holz will Weile h



Ein knisterndes Feuer im Kaminofen bietet in der kalten Jahreszeit viel Wärme. Man optimiert die Wärmeabgabe, indem man die Brennweite, optimiert die Wärmeabgabe und begegnet zugleich steig

solle also nicht nur auf den Raummeter-Preis achten, sondern darauf, wie viel Energie im Holz steckt.

**Frisch geschlagen oder gründlich getrocknet?**

„Wichtig ist, dass ausschließlich trockenes Holz im Ofen verbrannt wird“, sagt Schornsteinfegermeister Andreas Walburg. „Trockenes Holz hat einen höheren Heizwert als feuchtes und ist daher energetisch effizienter.“

Luftgetrocknetes Holz mit einem Wasseranteil von 15 bis 20 Prozent hat einen durchschnittlichen Heizwert von 4 kWh je Kilogramm. Frisch geschlagenes Holz mit einem Wassergehalt von 50 Prozent hat lediglich einen Heizwert von rund zwei kWh je Kilogramm.

Mit trockenem Holz lässt sich auch umweltfreundlicher heizen: „Zu feuchtes Brennholz produziert mehr Ruß- und Staubpartikel, die durch den Schornstein in die Umwelt gelangen. Gleichzeitig lagert sich mehr Ruß im Ofen, Ofenrohr und Schornstein ab“, sagt Andreas Walburg.

Der Schornsteinfeger erkennt sofort am Inneren des Schornsteins, wie oft geheizt und welche Brennstoffe genutzt wurden: „Man sieht an den Ablagerungen, ob trockenes oder feuchtes Holz benutzt wurde.“ Das hat übrigens auch Konsequenzen für die Heizkosten: Mit der Zeit mindern die Verbrennungsreste auch den Wirkungsgrad des Ofens.

Deswegen gibt es sogar gesetzliche Regelungen, wie trocken Holz zum Zeitpunkt des Verbrennens sein muss: Die Restfeuchte muss unter 25 Prozent liegen. Das entspricht weniger als 20 Prozent Wassergehalt. Zum Vergleich: Frisch geschlagenes Holz aus dem Wald kann abhängig von Jahreszeit und Sorte bis zu 60 Prozent Wassergehalt enthalten. Messgeräte zur Überprüfung gibt es in Baumarkt und im Fachhandel.

Das bedeutet: Wer aktuelles geschlagenes Holz kaufen kann, nicht direkt verheizen. Fichte brauchen ein Jahr, Birke, Eiche anderthalb Jahre. Trockenheizen in luftdurchlässigen Ort, so Andreas Walburg. Harte Hölzer wie Buche, Obstgehölze müssen zwei bis drei Jahre liegen. Und braucht bis zu drei Jahre.

**Vom Händler oder aus dem Wald?**

Wer sich einfach so im Wald macht sich strafbar. Aber e das Holz von dort zu erwerben günstiger als im Handel – w Aktion als Hobby betrachtet die Kosten für den Transport und den Zeitaufwand.

Zum Beispiel kann man Polterholz oder Polter kaufen, der schon einmal gesehen, d Waldstraße gelaufen oder g liegt dort nach dem Schläge plätzen. Dieses Holz gilt aber man muss sich in de dem Kauf beim zuständigen meinde oder dem Waldbesi den Abtransport und die Sti mern. Mancherorts muss m genannte Sammelscheine e Holz vom Wegesrand mitne nen.

Viele Forstverwaltungen sitzer erlauben auch das Ho gen ein geringes Entgelt. V ist aber häufig, dass ma herrscht, teils sogar ein Q nachweis oder Motorsäge vorweisen kann. Ein Lehrg Forstämtern. Berufsgen und Waldbesitzern angebot

Die Bäume fallen dürfen Regel nicht. Die Förster ur zer teilen ihnen Parzellen Stämmen oder einz Bäume zum Zerteilen zu.

For more information contact Moritz Steinbeck: [moritz.steinbeck@co2online.de](mailto:moritz.steinbeck@co2online.de).



## UK: Winter ad campaign and the importance of context for success

Throughout the HACKS project, Energy Saving Trust have used social media to reach consumers with information about Topten and HACKS products through their Topten Twitter, EST corporate channels, and multiplier channels. In total social posts have reached a large audience.

In addition to this, in the winter of 2022/2023 EST enlisted a marketing agency to perform an advertising campaign to spread awareness of the toptenuk.org product lists. There were two short periods that the campaign took place, November/December of 2022 and February 2023 (9<sup>th</sup>-25<sup>th</sup>). In total the campaign resulted in 37,215 clicks to the toptenuk.org.

There are some interesting insights provided by the campaign into consumer and user behaviour. As expected most (98%) of the clicks came from ads that targeted specific topics of interest rather than general interest. Out of all the ads placed, those specifying wood fuelled stoves (Figure 1) (rather than heat pump and biomass boiler specific) performed the best, making up 80% of the clicks.

One reason for the success of this wood stove ad compared to the other ads with specific products, is likely possibly due to the aesthetics of the products. Wood stoves have an appealing associated image whereas biomass boilers and heat pumps are not necessarily known for their aesthetic. Along with this the timing of the campaign is important as in cold periods heating the home is more likely to be on the mind of consumers, especially with the energy crisis where consumer awareness of the importance of energy efficient products for saving money on energy bills is at an all-time high.

This behaviour is further evidenced during the February portion of the campaign where the wood-fuelled stove ads still received the most clicks (50%) but did not do as well as in November, since at this stage, though still in the heating period we are reaching the end months of Winter.

The results of the campaign reflect that consumers are interested in efficient heating products and that the context of the country (i.e., time of year, weather etc.) is likely an important factor in their interest in energy efficient heating and cooling products and therefore HAC areas on sites like Topten.



For more information: Ella Cox, EST, [ella.cox@est.org.uk](mailto:ella.cox@est.org.uk)



## France: Social networks versus Display campaigns

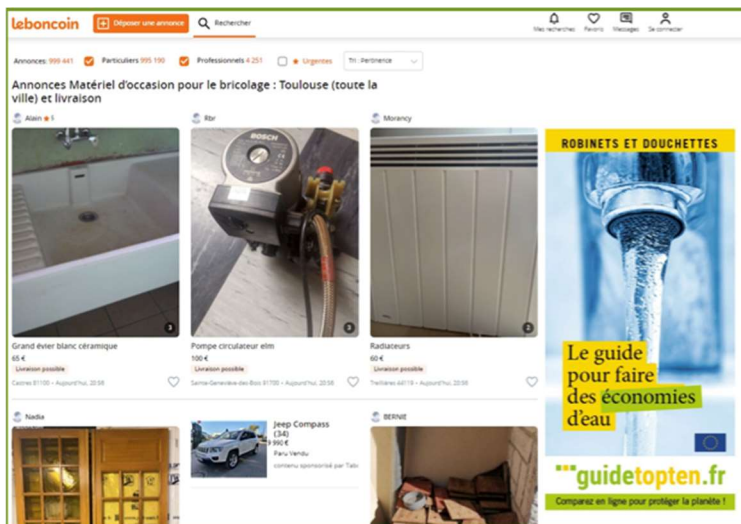
Guide Topten hired a communication agency specialising in digital communication. They advised to try different types of communication campaigns in order to reach the general public and raise the number of visitors and page views on [www.guidetopten.fr](http://www.guidetopten.fr). They organised two paid campaigns allowing to compare results in November/December 2021:

- a campaign on the social networks
- a display campaign – i.e. banners of different sizes and shapes displayed on on-line media websites

In each case, specific areas of France were targeted, avoiding the capital, Paris, because it is much more expensive, and focusing on large cities that could be surrounded by Do-It Yourself stores. Topics were also targeted: Home, Ecology, Energy savings, Do-it-yourself, Well-being.

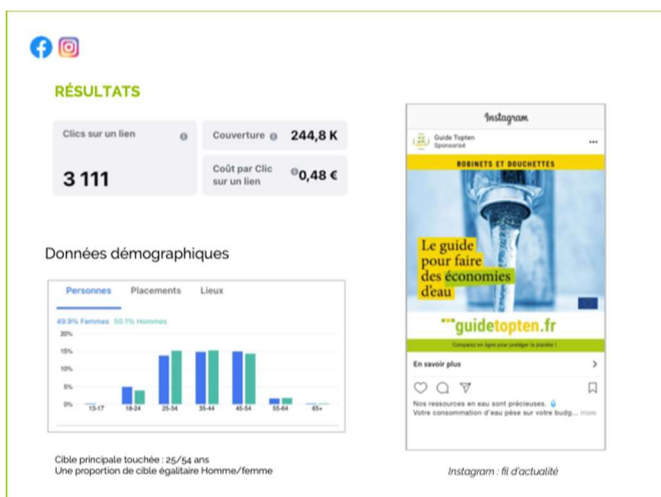
The social network campaign (Facebook and Instagram) had a budget of 1500 € and the

display campaign had a budget of 2 500 €: it featured 5 different formats of banners on very popular websites for the persons located in the targeted geographical areas (for example on “L’Obs”, a news magazine, on “Femme Actuelle” for the feminine press, or on “Le bon coin”, as shown on the left, a very popular website to sell anything between private sellers).



Social network campaign

Display campaign



### Performance par format

Meilleurs résultats



Pavé 300 x 250

154 477 impressions	5,00%
sur un total de 3 087 718	
2 391 clics	16,90%
sur un total de 14 152	
1,85 CTR	336,48%
pour une moyenne de 0,46	



The social network campaign had good results, with positive reactions, a reach of 245 000 and more than 3 000 clicks on the publication. Men and women were equally reached, with a predominance in the age categories of 25/55 years old.

The display campaign was also successful, albeit a bit less than the social media one (0,74€ against 0,48€ per click). In total, the display campaign generated 620 075 impressions, with an average of 25 836 daily display. The most successful display format was the square format which triggered 90% more engagement than the long vertical banner. The raise in visitors and page views on the website was higher in the Display campaign than in the social network campaign, where it seems that users remain on “their wall”.

Those examples showed that all details need to be cured for such campaigns: of course, the theme, the keywords used, but also the regions targeted, the visual and its shape.

For more information, contact Sophie Attali: [sattali@guidetopten.fr](mailto:sattali@guidetopten.fr)



## Spain: Accessible graphic materials for people with disabilities

The aim of the HACKS project is to achieve market transformation and improve the comfort and health of citizens, and to this end, the information available to citizens is essential.

In order to improve the public's knowledge of the most efficient heating and cooling solutions, many materials have been produced in addition to the information already available on the website.

One of the problems was that the information presented on a daily basis is often not accessible to people with disabilities, and tools that are designed for citizens do not reach this group for various reasons, including the fact that the material is created should have certain characteristics in how it is created.

In order to provide information in the best possible way to this group, we worked with CERMI - the Spanish Committee of Representatives of People with Disabilities - to adapt the created HACKS materials. The focus was on two main aspects:

- use criteria that improve accessibility, such as colour contrast, simplification of sentences, font size, readability for readers, etc.
- make people with disabilities visible in each material.

This experience convinced us to consider that considering accessibility criteria in the materials generated is essential in order to reach groups such as the disabled and the elderly, who represent a high percentage in our societies and who are at a disadvantage compared to other groups.

The materials do not differ in general from other materials produced, but they take into account small details that make them accessible: dividing the information into two pages, using contrasting colours, the size of the font, choosing images that can be easily described and not overloading them with images that make them difficult to understand, structuring the information. Following these simple criteria allows the materials to be understood by a larger number of people.

The europten.es website has also included a greater number of images of people with disabilities, and although this does not have a direct impact on the increase of visits, it contributes to generate greater awareness in society.

We also participated in a conference organised by CERMI "[An economy at the service of the common good: the person at the centre](#)" in which we took part in a round table where we talked about the European Green Pact in terms of inclusion and included the subject of the most efficient heating and air conditioning systems, health impacts, alternative equipment to gas boilers, tips for day-to-day life, etc. This collaboration with CERMI was unfortunately only possible at the end of the project, but considering synergies with entities representing specific groups and adapting the materials to be produced to different audiences tends to the general objective of generating greater knowledge on a subject as important as more efficient heating and cooling, especially in a context - and in winter - marked by a large increase in energy prices. As learning, we believe that it is a perspective to be included in every project.

Before the CERMI advice:

## MEJORAR NUESTRA EFICIENCIA ENERGÉTICA Y AHORRAR ES POSIBLE

**CONSEJOS QUE TE PERMITIRÁN SER MÁS EFICIENTE ENERGÉTICAMENTE Y AHORRAR EN TUS FACTURAS DE ENERGÍA:**

- Regula la temperatura ambiente: Reducir la temperatura 1°C reduce el consumo de energía entre un 5-10%, 19°C es más que suficiente.
- Ventila las habitaciones lo necesario, con abrir la ventana durante 10 minutos alcanza.
- Apaga los radiadores cuando no los uses.
- Purga los radiadores una vez al año.
- No coloques nada delante de los radiadores.
- No obstaculice la salida de calor.
- Baja las persianas o cierra las cortinas por la noche.
- Instala repartidores de costes, válvulas con cabezal termostático y termostatos modulantes que adaptan la temperatura de los radiadores.
- Ajusta la temperatura a tu rutina y horarios instalando termostatos de ambiente programables.
- Coloca reflectores en los radiadores que estén en paredes en contacto con el exterior, o con zonas no climatizadas.
- Mejora los aislamientos de puertas y ventanas con burletes o bajo puertas.
- Instala persianas y cortinas tupidas que actúen de barrera contra el frío.
- Planifica tus inversiones para reducir tu consumo de energía:
  - Prioriza los aislamientos
  - Rehabilita tu vivienda
  - Sustituye tus equipos por otros más eficientes

**¿CÓMO PODEMOS OPTIMIZAR NUESTROS CONSUMOS DE ENERGÍA Y AHORRAR?**

- A través de nuestros hábitos diarios: hay muchas pequeñas acciones que podemos realizar y que contribuyen a que reduzcamos nuestro consumo de energía.
- Cuanto más protegida del frío o del calor esté tu vivienda, menos energía necesitaremos consumir.
- Otro paso para reducir el consumo consiste en elegir una solución eficiente y renovable para nuestros equipos. La eficiencia energética del aparato determinará su consumo.
- Es importante complementar distintas medidas, en el corto, mediano y largo plazo.

**¿POR QUÉ INVERTIR EN UNA TECNOLOGÍA DIFERENTE A LAS CALDERAS A LAS QUE ESTAMOS ACOSTUMBRADOS?**

El precio a la hora de sustituir los sistemas de calefacción suele ser un condicionante, y en algunos casos el desembolso inicial en nuevas tecnologías puede ser más elevado, lo que genera el momento de comprar un sistema de calefacción, pero todo lo inverso con las facturas de energía: es importante valorar el coste de utilización del equipo durante toda su vida útil.

En [www.ecodes.es](http://www.ecodes.es) podrás conocer cuáles son los mejores productos del mercado español y elegir según criterios de eficiencia energética, calidad y su impacto sobre el medio ambiente, además de suponer un ahorro económico.

Para más información sobre las ayudas disponibles para rehabilitación de viviendas y sustitución de sistemas de calefacción y agua caliente antiguo, consulta la página web de tu Comunidad Autónoma o Municipio, donde puedes encontrar más información.

**europopten.es** **ecodes** **CERMI** **HACKS**

## MEJORAR NUESTRA EFICIENCIA ENERGÉTICA Y AHORRAR ES POSIBLE

**¿CÓMO PODEMOS OPTIMIZAR NUESTROS CONSUMOS DE ENERGÍA Y AHORRAR?**

- A través de nuestros hábitos diarios: hay muchas pequeñas acciones que podemos realizar y que contribuyen a que reduzcamos nuestro consumo de energía.
- Cuanto más protegida del frío o del calor esté tu vivienda, menos energía necesitaremos consumir.
- Otro paso para reducir el consumo consiste en elegir una solución eficiente y renovable para nuestros equipos. La eficiencia energética del aparato determinará su consumo.
- Es importante complementar distintas medidas, en el corto, mediano y largo plazo.

**¿POR QUÉ INVERTIR EN UNA TECNOLOGÍA DIFERENTE A LAS CALDERAS A LAS QUE ESTAMOS ACOSTUMBRADOS?**

Existen tecnologías que son más eficientes y aunque en algunos casos el desembolso inicial puede ser más elevado, es importante valorar el coste de utilizar el equipo durante toda su vida útil: el precio de compra y el consumo de energía a lo largo del tiempo.

En [www.ecodes.es](http://www.ecodes.es) podrás conocer cuáles son los mejores productos del mercado español y elegir según criterios de eficiencia energética, calidad y su impacto sobre el medio ambiente, además de suponer un ahorro económico.

Para más información sobre las ayudas disponibles para rehabilitación de viviendas y sustitución de sistemas de calefacción y agua caliente antiguo, consulta la página web de tu Comunidad Autónoma o Municipio, donde puedes encontrar más información.

**europopten.es** **ecodes** **CERMI** **HACKS**

## MEJORAR NUESTRA FORMA DE CLIMATIZAR Y AHORRAR ES POSIBLE

**¿POR QUÉ ELEGIR UN VENTILADOR ANTES QUE UN A/C?**

El uso de un ventilador para la climatización es una buena solución que debe probarse antes de comprar un sistema de aire acondicionado, ya que consumen menos electricidad y junto con otras medidas complementarias te permitirán mantener el confort en tu vivienda y ahorrar en tu factura de luz.

**ALGUNOS CONSEJOS PARA COMPRAR UN VENTILADOR**

- Elige el tipo de ventilador que más se adapte a tus necesidades.
- Compra un ventilador que tenga un buen índice de eficiencia.
- Cuanto mayor sea el índice de eficiencia, más eficiente será el dispositivo.
- Presta atención al volumen del dispositivo: Los mejores versiones tienen un nivel de ruido de sólo 50 dB(A).
- No compres ventiladores con función adicional de calefacción.
- Elige ventiladores con función verano/invierno reversible.
- Presta atención a la tonalidad de la luz (calida, neutra y fría).

**SI AÚN CREES QUE NECESITAS UN AIRE ACONDICIONADO**

- Te recomendamos elegir modelos de clase A+++.
- Elige A/C que utilicen refrigerante R-32, que tiene un menor potencial de calentamiento global.
- Elige el equipo teniendo en cuenta las necesidades particulares de tu vivienda y la potencia de refrigeración que necesitas.
- Asegúrate que el modelo incorpora la tecnología Inverter.

**europopten.es** **ecodes** **CERMI** **HACKS**

After CERMI advice improving materials' accessibility:

Dividing the information into 2 pages

Using fewer and contrasting colours

Increasing font size, choosing easily describable images

Not overloading infographics with images that make them difficult to understand

Structuring the information with boxes or similar alternatives to facilitate understanding

**CONSEJOS QUE TE PERMITIRÁN SER MÁS EFICIENTE ENERGÉTICAMENTE Y AHORRAR EN TUS FACTURAS DE ENERGÍA:**

- Regula la temperatura ambiente: Reducir la temperatura 1°C reduce el consumo de energía entre un 5-10%, 19°C es más que suficiente.
- Ventila las habitaciones lo necesario, con abrir la ventana durante 10 minutos alcanza.
- Apaga los radiadores cuando no los uses.
- Purga los radiadores una vez al año.
- No coloques nada delante de los radiadores que obstaculice la salida de calor.
- Baja las persianas o cierra las cortinas por la noche.
- Instala repartidores de costes, válvulas con cabezal termostático y termostatos modulantes que adaptan la temperatura de los radiadores.
- Ajusta la temperatura a tu rutina y horarios instalando termostatos de ambiente programables.
- Coloca reflectores en los radiadores que estén en paredes en contacto con el exterior, o con zonas no climatizadas.
- Mejora los aislamientos de puertas y ventanas con burletes o bajo puertas.
- Instala persianas y cortinas tupidas que actúen de barrera contra el frío.
- Planifica tus inversiones para reducir tu consumo de energía:
  - Prioriza los aislamientos
  - Rehabilita tu vivienda
  - Sustituye tus equipos por otros más eficientes

**europopten.es** **ecodes** **CERMI** **HACKS**

**CONSEJOS PARA REFRESCAR TU VIVIENDA**

- Mejora el aislamiento térmico de puertas, ventanas y paredes.
- Baja las persianas durante el día y ventila tu vivienda durante la noche.
- Apaga los dispositivos eléctricos que no estés usando.
- Protege tu vivienda del sol con toldos, voladizos y otro tipo de protecciones.
- Aprovecha las características naturales de tu vivienda y del entorno como la vegetación, elementos de agua en los alrededores.
- Los colores claros en las paredes y fachadas ayudan a disipar el calor.
- Prioriza los ventiladores como forma de climatización.

Elige sistemas de aire acondicionado que también puedas usar en invierno reduciendo, además, tu consumo de energía.

No compres aires acondicionados móviles, tienen un alto consumo y su eficiencia energética es menor.

En [www.ecodes.es](http://www.ecodes.es) podrás conocer cuáles son los mejores productos del mercado español y elegir según criterios de eficiencia energética, calidad y su impacto sobre el medio ambiente, además de suponer un ahorro económico.

**europopten.es** **ecodes** **CERMI** **HACKS**

More information:  
 Jeannette Bain Scott - ECODES,  
[jeannette.bain@ecodes.org](mailto:jeannette.bain@ecodes.org)



## Belgium: Reaching a target audience thanks to adapted keywords

In a technical project like HACKS, it is crucial to adapt the communication to the targeted audience. Topten Belgium wanted to communicate to their target using the advice pages provided on Topten.be, but realised that the audience relatively quickly lost interest when visiting the website.

When the website was launched and all product lists added, the team was not sure how to make it attractive for visitors. We began by translating the technical subjects into easily accessible blogposts. Because the team consisted of sustainability coaches (some with engineering background), it lacked sufficient experience in online communication and was not confident that this approach would achieve the necessary results.

We decided to contact an experienced copywriter to assist us in this mission. She evaluated our position, objectives and opportunities in the field of energy efficiency advising. With her expertise as a SEO copywriter, she helped us in both sharing our message and in making our content visible through search engines. This approach ensures an increase in the communication reach and ultimately results in expanding the target audience.



The graph shows the results of a keyword research. It plots the search volume; the number of monthly searches in search engines in relation to the competition; how difficult it is to reach the top of the search results scale from 0 (easy) to 100 (difficult).

This analysis makes it clear that the combination "huis koel houden" (keep house cool) is the most effective. This word combination is then best applied in the title of the blog post or first paragraph.

We also worked closely together on identifying the main subjects relevant for our target audience and to express the information in understandable and attractive language.

With this collaboration, we created a series of blogposts (see images) that were easy to read while maintaining technical depth. The articles are constructed around keywords regularly searched for by the target audience. Also, logical crosslinks between blog posts and links to advisory texts on the website were carefully created to increase the chance that visitors remain longer on the Topten website.

For more information contact Marieke Tijskens: [m.tijskens@goodplanet.be](mailto:m.tijskens@goodplanet.be)





## Austria: Infographic - Climate-friendly through the heating season

The HACKS Team of the Austrian Energy Agency decided to prepare an infographic on the topic of "Climate-friendly through the heating season".

On our [topprodukte.at](http://topprodukte.at) Website we have in-depth articles on various HACKS product categories and related consumer advice.

However, many end-consumers do not want to go into that much detail and prefer images with short explanations.

Thus, our goal was to make dry information (technical, comparisons) more accessible and easier to understand. Another goal was to create something which resonates with our end-consumer target audience, help boost our HACKS awareness and something which can be easily shared on social media channels (own and multipliers).

For the infographic we picked the top 5 tips which can be implemented by end-consumers without having to spend a lot of money on it. In addition, it was important to us to communicate what savings they can achieve if they implement that tip for one year.

The savings were translated in Euro, in saved trees and kgCO<sub>2</sub>. This was important in order to make the savings more tangible for different end-consumer target groups.

The role out of the infographic is scheduled for the next heating season. In addition, co-branded infographics with multipliers are also a possibility.



\*Jährliche Kosteneinsparung eines 3-Personenhaushaltes (110 m<sup>2</sup> Einfamilienhaus, Gasheizung). Jährliche CO<sub>2</sub> Einsparung in Anzahl CO<sub>2</sub>-bindender Bäume umgerechnet.



Der Inhalt dieser Webseite unterliegt der Verantwortung der Autor\*innen dieser Webseite und spiegelt nicht zwangsläufig die Meinung der Europäischen Union wider. Weder die EASME, noch die Europäische Kommission sind dafür verantwortlich, wie die Informationen oder Inhalte verwendet werden. Das Projekt HACKS erhält Fördermittel unter der Zuwendungsvereinbarungsnummer 643231.



Lessons learnt: The development of a powerful infographic takes time and many revision loops are necessary. Thus, it is important to start well in advance when developing infographics. For our purpose, we can use the infographic for the upcoming two heating seasons.

For more information:

Thomas Bogner [Thomas.Bogner@energyagency.at](mailto:Thomas.Bogner@energyagency.at)

Kerstin Schilcher [Kerstin.Schilcher@energyagency.at](mailto:Kerstin.Schilcher@energyagency.at)

<https://www.topprodukte.at/de/service/Besseres-Wohnklima>

## Poland: Consumer education through comic books

Choosing heating and cooling appliances for home is not easy. Making a purchase decision is often very difficult. Buyers often don't have technical knowledge and are unable to evaluate which device is the best for them.

At [www.topten.info.pl/hacks](http://www.topten.info.pl/hacks), lists of appliances that are the most energy-efficient on the Polish market have been published. However, the selection criteria and recommendation may appear unclear for "non-technical" consumers.

Therefore, the Polish partner of the HACKS project decided to support consumers with information presented in a friendly and easily accessible form, with no technical language. A series of short comics was created (<http://topten.info.pl/private/page/komiksowe-porady>) for consumers, potential buyers with issues related to effective heating and cooling and links to the HACKS website:

1. "Heat from heaven" - the comic describes how to deal with the heat at home, both with the help of non-investment activities and activities that require low-cost investment (e.g. purchase of a fan or an air conditioner).
2. "Your eco-house" - the comic shows the possibilities of obtaining external financing available on Polish market for the replacement of energy-inefficient equipment with new, energy-efficient one. Along with the comic, a website with a description of supporting grant programs was promoted.  
<http://topten.info.pl/private/page/finansowanie-inwestycji>
3. "Heat in the house" - the comic describes how you can make home warmer and more comfortable with the use of now or low-cost investments. It also shows the possibilities of improvements that require bigger investments and financial input.



Heat from heaven



Your eco-house



Heat in the house

The comics were promoted on the social media (Facebook, Twitter, LinkedIn) and gained the greatest reach among all the posts published as part of the HACKS project. Posts were published several times covering a total of 4,571 people (FB = 1,694, Twitter = 2,169, LinkedIn = 708).

**For more information**

Anna Bogusz: [a.bogusz@fewe.pl](mailto:a.bogusz@fewe.pl), +48 603 554 814

Polish Foundation for Energy Efficiency, Poland

[www.topten.info.pl/hacks](http://www.topten.info.pl/hacks)



## Italy: A resilient communication strategy - Energy saving in times of smart working

During the start of the pandemic, at the end of winter 2020, and during the related lockdown, Eliante decided to postpone the launch of the communication campaign of the HACKS Project and the launch of the consumer outreach campaign. In fact, the lockdown, the attention of public opinion monopolized by COVID and the dizzying collapse of consumption made it counterproductive to hypothesize a communication campaign during such period. However, Eliante chose to launch a “soft” communication campaign, trying to transform what were evident critical issues into opportunities to be seized.



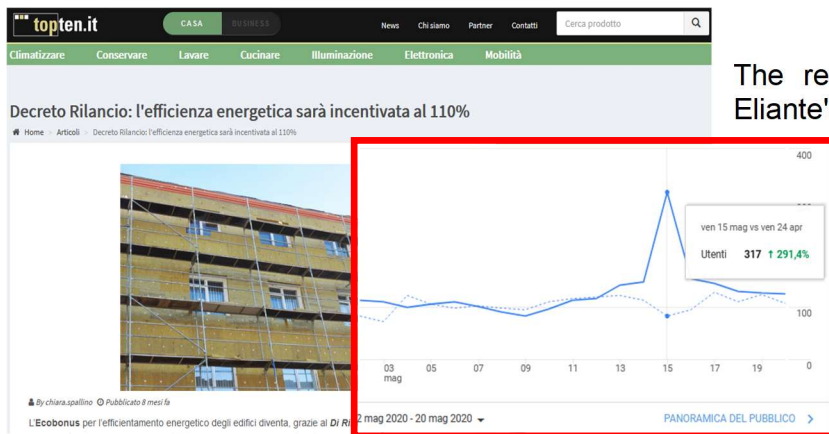
This is why a campaign dedicated to energy efficiency linked to the home and smart working was launched. The campaign saw the launch of a press release, containing useful tips for saving energy at home and a series of posts on social channels. The choice proved to be the right one, in fact the press release had a good success, with the publication in at least 23 online newspapers and Italian web portals.

Even the related social campaign, although not supported by sponsorships, had a good success (4 Facebook posts and as many on LinkedIn, on Eliante's channels, for a total coverage of about 1,800 people reached)

The success of this campaign convinced Eliante's staff to adopt a flexible strategy, adapting it to the contingent situations of the new socio-economic context.

## Energy efficiency is the way to overcome the crisis

The impact of the pandemic on the Italian economy was immediately devastating. Italy was in fact the first European country to discover the effects of the virus and to adopt a lockdown strategy. Precisely for this reason Italy was the first country in Europe to suffer the consequences in social and economic terms. One of the proposals of the Italian government to push the economy to restart was to launch a generous and unprecedented incentive linked to energy efficiency in the home. The incentive promoted by the government provides for a tax reduction equal to 110% of the expenses incurred for the renovation of the house. Among the equipment affected by the incentive there are also many HACKS appliances: heat pumps, solid fuel boilers, local space heaters and others. For this reason and with the idea of implementing a flexible communication that adapts to current events, Eliante has decided to provide detailed information on the incentive, right away, with the publication of news and insights on the subject. Also, in this case, the choice proved to be a winning one, because visits to the site, on the day the news was published, simply tripled.



The result of the news convinced Eliante's staff to enhance the information relating to incentives on the Topten.it portal, by inserting on the homepage a general overview on all the incentives present in Italy and publishing other and more specific news.

## Infographic and social media

In order to build a stronger visual image in social media, to engage specific targets and to promote WP4 and WP5 activities and tasks, Eliante has promoted together with other 5 partners from CZ, ES, FR, PL and PT, the production of a package 30 infographics, dedicated to the WP4 and WP5 tasks and activities. The infographics will “cover” the promotion of all project topics, activities, task, key messages, targets, tools and tips, using captivating graphic contents, in order to add value to the visual material, and to encourage sharing and interactions in social media. At the moment 11 infographics of 30 have been produced (see below).



Thanks to Eliante's contextual commitment to the Label 2020 project, we could start a very strong social campaign (by using Facebook and LinkedIn most of all), involving followers and other people to find out all the energy news of this period and the good practices they can implement in their houses.

All the materials made in the HACKS project have been adapted to the social media target and spread alternating with the posts of Label 2020: every week we can arrange up to 3 energy posts. During this last month references to the Hacks project were edited at least every week, contributing to the promotion of the website.

For more information:

Fabio Tognetti, Eliante [tognetti@eliante.it](mailto:tognetti@eliante.it)

<https://www.facebook.com/eliante milano>

<https://www.linkedin.com/company/eliante-coop-onlus/>



## Sweden: A quiz between neighbouring countries: who is the master of energy efficiency?

Norway and Sweden are countries with large similarities as well as important differences. When it comes to heating issues, one significant difference is that electricity is cheaper in Norway, partly because of a greater access to hydropower. Therefore, the most common way of heating residences in Norway is by direct electric heating, whereas in Sweden, district heating is the most common, followed by geothermal heat pumps. Does different electricity pricing and heating methods affect the knowledge about energy efficiency in the two countries? This is the question we set out to answer, together with NSCN – our Norwegian sister organization that runs energismart.no, the Norwegian Top Ten. Swedes and Norwegians have quarrelled for centuries over who is the best, smartest and most beautiful, so people were not hesitant to answer.

The two teams produced together ten multiple choice quiz questions concerning different aspects of HACKS. Each question had three possible answering options, an illustrating image and an explaining textbox that popped up after the question was answered. Our focus was on heating private residences, and the questions were largely the same between the two countries. The few differences resulted from different national data availability and slightly different views on renewable energy. The quiz questions are listed below, with the “winner” for each question (i.e. the highest percentage of correct answers):

1. What's the most common way to heat your home in Sweden/Norway? (Norway)
2. What fuel causes the most climate emissions? (Sweden)
3. When is an air heat pump the most efficient? (Sweden)
4. From an average house, how does the most heat escape? (Sweden)
5. What Nordic country uses the most electricity per person each year? (Norway)
6. Sweden and Norway use relatively little fossil energy for heating. What about the rest of the EU? (Sweden)
7. What country had the highest electricity prices in the beginning of 2022? (Sweden)
8. What is most important for the climate and the environment? (Norway)
9. SE: Video games uses electricity too. Which console is most energy efficient?  
NO: Where is the largest potential for energy savings? (Sweden and Norway; tie)
10. SE: Is renewable energy always the best option for climate and environment?  
NO: Is all renewable energy environmentally friendly? (Norway)

A few conclusions (in the popular, not-necessarily-scientifically-correct sense) is that the Norwegians seem very aware of their large energy consumption, whereas the Swedes are more doubtful, and that Swedes had a better perception than Norwegians of energy usage globally. Both countries had a fairly good understanding of the climate emissions from different fuels, and both of them, to a large extent, were lacking knowledge about air heat pumps. A full article analysing the answers, as well as the quiz itself in its entirety, can be accessed at <https://www.toptensverige.se/artiklar/norge-vann-med-en-harsman>.

The total number of valid answers (people going through the whole quiz, answering every question) was ca. 600 people. About 400 of these were Norwegian and 200 were Swedish.

One thing that proved to be an issue for the SSNC was communicating the quiz to the public. There was an ad campaign planned, but due to lacking internal communication and a high workload for the SSNC communications department, this was never realized. The same applied to our planned posts on SSNC's official social media accounts. This resulted in a far lower than anticipated number of participants, although 200 can be viewed as a decent enough number, given the conditions. The feedback we have received from participants has also been positive, with many people wanting to discuss the details and the reasoning behind some of the questions that were a little tricky. The quiz also remains on the website, as a fun way for visitors to test their knowledge.

Norway did not just have the highest number of participants, but also the highest average score, albeit by a fraction of a point. The Norwegians performed an average score of 6.67 out of 10, whereas the Swedes only got 6.22. However, the questions were differently phrased, and the final Swedish question can be considered as more difficult than the Norwegian version, so the true answer will probably continue to be fought over during the coming centuries as well.

FRÅGA 5 AV 10



**Rika länder använder ofta mycket energi. Vilket nordiskt land använder mest el per person?**

Norge

Danmark

Sverige

Rätt svar: Norge. En anledning till att Sverige, Norge och Danmark skiljer så mycket åt är att Danmark har ett varmare klimat och att det i Norge är vanligt med direktverkande el för uppvärmning. Tack vare mycket vattenkraft har Norge relativt lågt elpris, medan Sveriges är högre och Danmarks ännu högre.

FRÅGA 2 AV 10




**Värmepannor är också vanligt för att värma bostaden. Men vilket bränsle orsakar mest klimatutsläpp?**

Ved

Pellets

Naturgas

Rätt svar: Naturgas. Både ved och pellets är förnybara bränslen. Pellets består av sågspån och andra restprodukter från träindustrin. Naturgas däremot, är fossilt, och släpper därför ut stora mängder koldioxid och andra föroreningar. Man kan säga att det är olja i gasform. Men även om ved och pellets är förnybara tar skogarna skada av att man använder för mycket.



**Vad är viktigast och mest bråttom för klimat och miljö?**

Mer energieffektivisering

Att bygga mer vindkraft till havs

Att bygga ut fler vattendrag med vattenkraft

Rätt svar: Mer energieffektivisering. Om vi använder mindre energi minskar behovet av ny energiproduktion, som vindkraft. Den el vi sparar kan istället ersätta fossil energi utan att naturen får betala. En minskad energianvändning minskar också vår sårbarhet för globala kriser och behovet av att importera energi.

*Left: Which Nordic country has the largest per capita electricity usage? (Denmark is wrong!)*

*Middle: When using boilers, which fuel causes the largest climate emissions?*

*Right: What is the most important issue to tackle, for climate and environment?*

For more information, contact Top Ten Sverige at [topten@naturskyddsforeningen.se](mailto:topten@naturskyddsforeningen.se).





## Czech Republic: HACKS cooperation with Czech energy utility Centropol

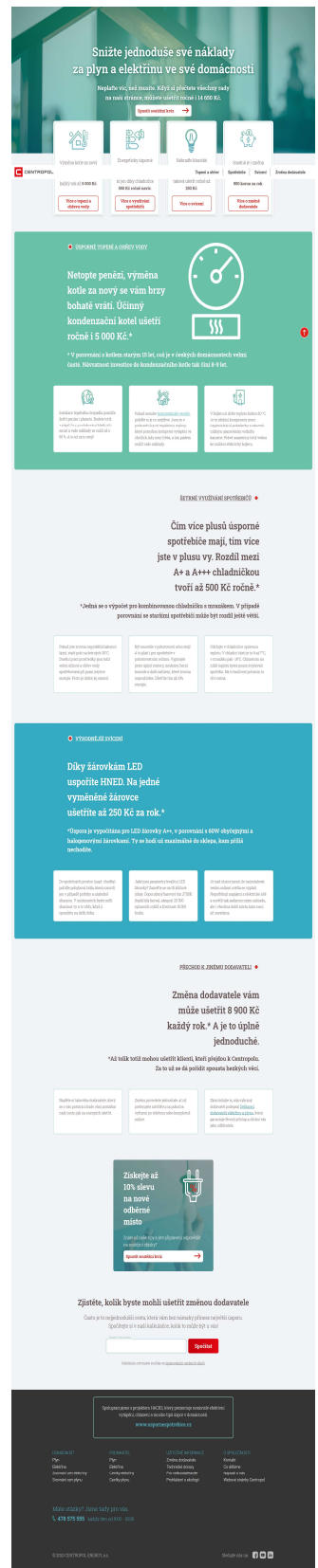
Czech Energy utility Centropol started a campaign on heating and energy consumption awareness in the autumn 2020. HACKS project provided utility with fact checks, energy saving tips and the whole energy usage context.

The campaign creation started in September 2020 and lasted for more than two months. The energy utility Centropol marketing department drafted few energy tips and asked HACKS representative, SEVEn, for additional information and quality check. SEVEn team provided mainly general tips on savings for heating systems (like using thermostatic valves, keeping appropriate temperature in different rooms, shower is more efficient than bath, open windows in winter for only reasonable time, etc.). However, it tried also to calculate some savings in computer model and verified some of these general tips. Some tips were proposed on households appliances too.

Examples of tips in English:

- Keep the temperature of the water in water heaters about 55-60°C as perfect a compromise between hygiene and energy savings,
- Use thermostatic valves as very cheap and fast repayable measure,
- The sufficient temperature for washing machines is 30°C for most cases.

The campaign is on internet only and is accessible at webpage: <https://www.centropol.cz/lp/jak-usetrit-v-domacnosti/> (Czech only)



Spolupracujeme s projektem HACKS, který prezentuje nezávislé efektivní vytápění, chlazení a mnoho tipů úspor v domácnosti.  
[www.uspornespotrebice.cz](http://www.uspornespotrebice.cz)

The webpage links to the HACKS CZ website at the bottom of the page with direct access to efficient products (see pictures).

The cooperation was quite fruitful and will continue in next months – possibly mainly on air-conditioners.

The total number of visits: 47 thousands pageviews.

Utility information: One of the biggest “alternative” energy utilities in the Czech Republic, serving more than 330 thousand connection points. Centropol delivers gas and electricity.

For more information: Michal Stasa, [michal.stasa@svn.cz](mailto:michal.stasa@svn.cz)



## UK: HACKS calculator case study

As part of the HACKS project an online calculator was developed and implemented by 14 of the HACKS partner countries in April 2021. The tool is available through a web URL where users can select the country they live in and then fill in a set of information about their current home energy set-up. Once a user has filled in the required information, the calculator reviews this and provides a set of tailored recommendations and solutions to improve the energy efficiency of the home. The aim of the calculator is to give consumers a visual way of understanding the benefits related to replacing heating and cooling (HAC) products, in a non-time-consuming way.

### The UK calculator

The project target for calculator uses was 1000 per HACKS partner. The UK has well exceeded this figure with 5365 uses up until the end of December 2022; the highest uses of all partners. In addition to this the calculator has been viewed 19,339 times in the UK. The usage figure represents that over 5000 people actually went through the process of filling in the calculator up until the second stage and therefore received tailored information and recommendations for energy home improvements specific to their current situation.

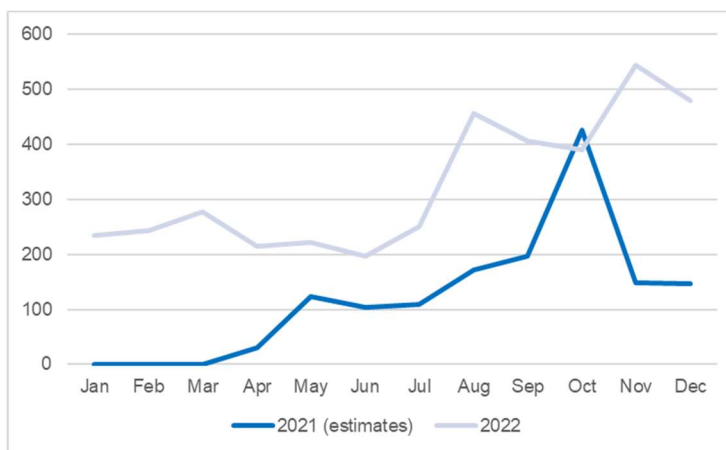


Figure 1: Uses of UK HACKS calculator in 2021 & 2022

There are some visible trends in the user numbers over the time period that the calculator has been live. Generally, the uses have increased as the year progresses (Figure 1) likely due to the reducing temperatures and the recent rises in energy costs causing energy and heating to be on the minds of the public and consumers.

Another aspect attributable to the success in the UK along with the above is the way the calculator has been promoted. The UK have made use of Energy Saving Trust’s corporate website and included a link to the calculator on the [‘Energy at Home’](#) section. Since EST’s website has a higher number of visitors than the toptenuk.org website and also benefits from its reputation as a source of expert energy saving advice and information, the UK team decided that it would be beneficial to utilise this, which has proven very useful in supporting the promotion and therefore use of the calculator.

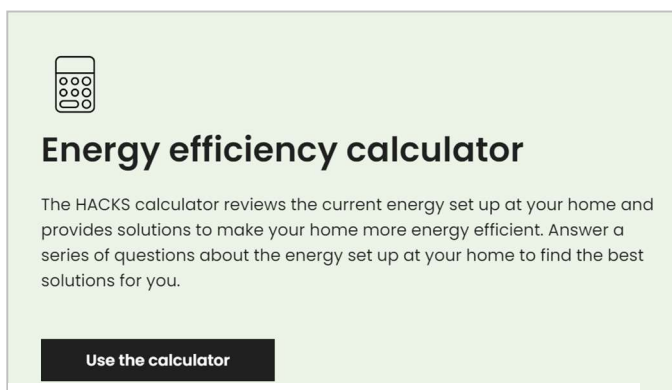


Figure 2: Link to UK HACKS calculator on EST

## **Lessons learned**

There have been a few minor matters to address throughout the time span the calculator has been available which are all minor aesthetic details. These mainly relate to differences between terminologies and positions of decimal places in numbers used by the EU and the UK. During the project, the UK received feedback from the public regarding this and took this into consideration, asking the calculator development team whether certain changes could be implemented. Changes were made including some language adaptations and some extra text to improve users understanding of questions. For example, extra text was added to the 'What climate do you live in?' answers to explain that Scottish users should select North and the rest of the UK should select South as in the UK the North and South divide is different.

For future calculators and tools, variations of this type in different countries could be taken into consideration in the development stage. If this is unable to be achieved due to technical reasons, then in the future a supporting guide could be created for users to explain the calculator use.

For more information contact Ella Cox, EST: [ella.cox@est.org.uk](mailto:ella.cox@est.org.uk)

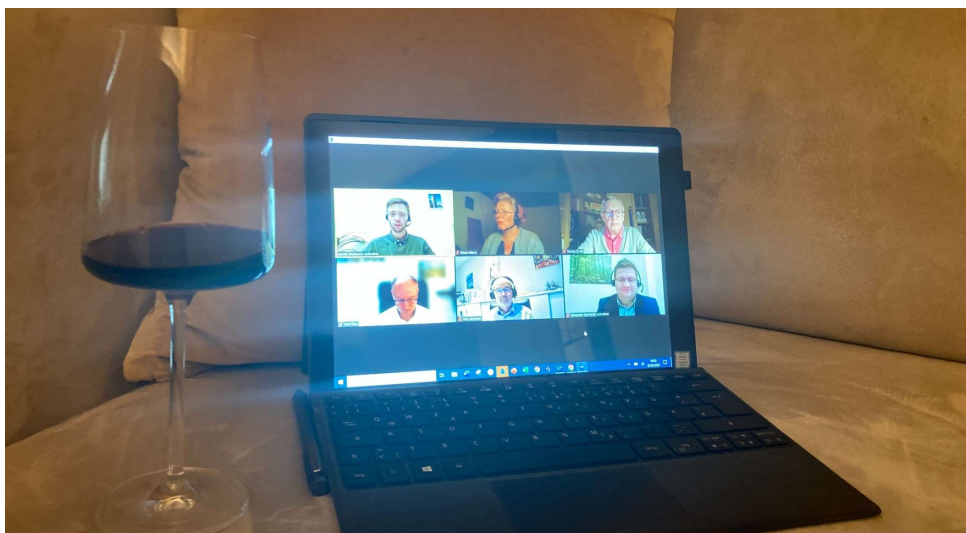


## Germany: 600 questions about heat pumps – online seminar for consumers

The Russian Invasion in Ukraine in spring 2022 changed many contextual elements. In Germany and the whole EU the import of Russian gas was restricted and the big question of energy independence came back. For the last 20 years German households were strongly focussed on gas heating systems and so, after doubtful gas deliveries and rising energy prices, the German Government and households looked for heating alternatives.

As a result, the Google Search Volume for the heating solution “heat pumps” increased by 300 percent in March and May 2022 and so did the impressions of the online content about heat pumps on co2online.de. This high interest led to an increasing demand of professional energy consultations and finally, led to an increase of sold heat pumps in 2022 of 158 percent in comparison to 2021.

Meanwhile neither the production and installation of heat pumps could follow the high demand, nor the execution of energy consultations. Thus, co2online set up an online seminar for private house owners to provide further information to interested consumers. This relieved the heating installers, manufacturers and energy consultant and gave consumers a realistic view on the change of heating solutions.



After opening the registration of the free online HACKS seminar in September 2022, 1.200 consumers registered within two weeks and left over 600 questions about heat pumps in the registration process. Based on those questions, co2online could provide a well-directed agenda by inviting one heating installer, one energy consultant, one expert on subsidy programmes and two private homeowners. On the evening of September 29, 2022 over 600 private house-owners from all over Germany took part in the online seminar, answered some integrated surveys and posed further questions to the panel. A post-survey showed that 77 % of the participants rated the seminar positive, only 3% negative and 96,5% of the participants want more online seminars like this. One participant even sent a picture of his viewing situation and thanked for the helpful online seminar.

For more information contact Moritz Steinbeck ([moritz.steinbeck@co2online.de](mailto:moritz.steinbeck@co2online.de)).



## Austria: Physical presence at a fair for 2 days, meeting different attendees

The HACKS Team of the Austrian Energy Agency decided to join a booth of the programme klimaaktiv by the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK) at the trade fair “Welser Energiesparmesse” in February 2022.

The main purpose of this booth was to inform about the funding opportunities within the campaign "get out of oil". The HACKS team took the opportunity to share HACKS material and provide advice on efficient heating and cooling solutions.

The participation was been valuable as the team could contribute in raising awareness for energy efficient heating solutions as well as for networking with other stakeholders in the heating sector including businesses, NGOs, and other government agencies.

Last but not least with joining a booth at this fair, the team could gather feedback from attendees about their experiences and concerns related to efficient heating system and retrofitting issues.

The HACKS team was present during two days at this fair and could count several discussions with consumers and provide advice as well could relay to further specialists when needed.



It became apparent that the overarching theme of the "Get out of oil" funding programme was able to appeal to a great many interested persons. In addition to the specific information on the subsidy, the HACKS team was also able to pass on targeted information on efficient heating systems. The effort for participating at the booth was in good proportion to the contacts that could be made with the consumers.

For more information <https://www.topprodukte.at/services/besseres-wohnklima>

Thomas Bogner [Thomas.Bogner@energyagency.at](mailto:Thomas.Bogner@energyagency.at)

Kerstin Schilcher [Kerstin.Schilcher@energyagency.at](mailto:Kerstin.Schilcher@energyagency.at)



Swedish Society  
for Nature Conservation

## Sweden: Using Top Ten HACKS to create teaching materials

The SSNC conducts a wide variety of environmentally related activities, of which Top Ten is just a small fraction. One of these activities is supplying teachers and students with teaching materials. These usually consist of fact sheets and longer texts, quizzes, and problems for students to solve, all connected to nature and environmental issues, such as climate, biodiversity and pollution. However, two topics were missing teaching materials for a long time: materials covering energy efficiency and math problems. Together with colleagues at SSNC's school activities department, we created a set of teaching materials including Top Ten HACKS content.

Our goal was to produce teaching materials for children aged 13-15 years (upper middle school) and 16-18 years (high school), consisting of:

- a longer illustrated factual basis, teaching the concepts of energy, power and energy efficiency, both at a conceptual and mathematical level (<https://www.naturskyddsforeningen.se/skola/energibegrepp/>),
- a set of math problems at different skill levels, where students made calculations on efficiency (at <https://www.naturskyddsforeningen.se/skola/rakna-pa-energi-och-effekt/>), and
- two quizzes, differing in difficulty, about energy and energy efficiency (<https://www.naturskyddsforeningen.se/skola/quiz-ova-begrepp-energi/> and <https://www.naturskyddsforeningen.se/artiklar/quiz-vad-kan-du-om-energi/> also used in our Sweden vs Norway competition).

The materials were finished in early 2022 and launched on SSNC's official school website.

We also helped expand and actualize a couple of other teaching materials concerning energy, bringing some basic understanding of energy efficiency to even younger students as well.

The concepts and topics highlighted were:

- energy in different states and forms, as well as transformations between them,
- energy losses in transformations,
- power and the mathematical relation to energy,
- efficiency and how to calculate it from energy and power,
- how to calculate efficiency from "real" numbers, using products at [toptensverige.se](https://toptensverige.se), where the students browse the site to find the numbers, and
- the EU energy label – how to use it to differ between products.

For all these topics, we provided illustrations and simple math calculations, which hopefully makes learning easier. The materials are being continually used by teachers as well as distributed by our partner *2047 Science Center*. The feedback we have received so far has been unanimously positive, and there have been some discussions (although in an early stage) of translating the content for some of our non-Swedish partners.

Hopefully, this activity has contributed to a deeper understanding of energy and energy issues for students in Sweden. Below are some images showing excerpts of our materials.

**Exempel 2**

En värmepanna eldas med träpellets. Vi fyller pannan med en påse med **16 kg pellets**. Träpellets har ett energiinnehåll på **5 kWh per kg**. När all pellets brunnit upp har pannan skickat ut **75 kWh** värme till huset.

*Hur stor är pannans verkningsgrad?*

**Lösning:** Den sammanlagda mängden instoppad energi är 16 kg · 5 kWh/kg = **80 kWh**. Delar vi den nyttiga energin vi får ut (värmen i huset) med den instoppade energin (den kemiska energin i pelletsen) får vi:

$$\frac{75 \text{ kWh}}{80 \text{ kWh}} = 0,9376$$

Verkningsgraden är alltså ungefär **94%**.



7-9 GY FY MA TK

KLIMAT, ENERGI OCH TRANSPORTER

MALLAR OCH VERKTYG

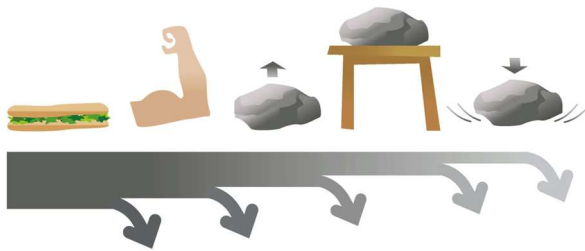
## Energibegrepp

Ett faktaunderlag för att lära in eller repetera några olika begrepp som har att göra med energiomvandlingar, energieffektivisering, energimärkning, verkningsgrad och effekt.

Publicerad 5 aug, 2021 · Uppdaterad 22 mar, 2022

Twitter Facebook LinkedIn Email Print

Men omvandlingen mellan olika energiformer är inte perfekt. Lite av energin "smiter iväg" som värme i varje steg. Käkarna blir varma när vi tuggar, musklerna blir varma när vi lyfter och stenen blir varm när den slår i marken. Det kallar vi för **värmeförluster**. Ju mindre värmeförluster, desto mer **energieffektiv** säger vi att omvandlingen är. I bilden visar pilarna hur mycket energi som följer med i omvandlingarna och hur mycket som försvinner i värmeförluster. I sista steget har all energi blivit värme.



*Top left: Sample math problem using a pellets boiler.*

*Top right: Introduction of energy concepts.*

*Bottom left: Text and image explaining energy losses and efficiency.*

*Bottom right: Math problems on the advanced level, using windows and outboard motors.*

### Klurigast – nivå 3

1. Du blir räddad mitt på Östersjön av din storasyster, som kör en tiohästars bensinmotorbåt (en hästkraft motsvarar 746 W) och letar i en och en halv timme innan hon hittar dig. Det tar en halvtimme hem igen och precis när ni når bryggan tar bensinen slut. Det fanns 8 liter bensin i tanken och varje liter motsvarar 9,1 kWh.

*Hur stor verkningsgrad har bensinmotorn?*

2. a) Ett hus har åtta fönster av typen som beskrivs på nivå 1. Fyra stycken är 1 m<sup>2</sup>, två stycken på 1,5 m<sup>2</sup> och två stycken på 1,8 m<sup>2</sup>. Ute är det -6 °C och inne 20 °C.

*Hur mycket värmeenergi läcker ut ur huset på en vecka?*

b) Jämför de energieffektiva fönstren ovan med äldre standardfönster som har u-värdet 1,4 W/(m<sup>2</sup>°C). Räkna med en värmekostnad på 1,2 kr/kWh.

*Hur mycket minskar energiläckaget? Vad blir merkostnaden för de*

For more information, contact Top Ten Sverige at [topten@naturskyddsforeningen.se](mailto:topten@naturskyddsforeningen.se)



## Luxembourg: reaching out consumers with the help of the municipalities.

The Oekozenner Pafendall, partner of the HACKS project, has a long tradition of communicating with municipalities. The Oekozenner has used this experience to promote HACKS to the citizens of Luxembourg's municipalities.

In Luxembourg, municipalities are obliged to publish their municipal council reports on paper and send them to their citizens. Almost all municipalities do this in the form of a municipal magazine in which all kinds of interesting information about the municipality can be found. Initiatives of a national character by NGOs are also readily published by the municipality if they see a relevance for their citizens. Articles from the Oekozenner Pafendall have often been published in the community newspapers in recent years, as have articles from HACKS during the project period.

In recent years, municipalities have become very active on social media, such as Facebook or Instagram. Here, too, the municipality regularly uses our content by sharing our posts.



Furthermore, information about HACKS was also found in more unusual publications of municipalities. For example, the municipality of Goesdorf used our HACKS infographics in their waste calendar this year.



The above-mentioned infographics are very popular with municipalities because they present a complex topic in an easy-to-understand way. Especially in times of energy and climate crisis, the infographics are popular in relation to energy savings in heating installations.

Since all citizens of Luxembourg's current 102 municipalities are also potential consumers, the municipal newspapers are an interesting source of communication for HACKS. Municipal



newspapers are generally more likely to be read by citizens, firstly because they are not published so often by the municipalities (monthly, quarterly or annually) and secondly because the information in the municipal newspapers often directly concerns the citizens.

Also in social media, we can see that the municipalities have a lot of followers; for example Facebook is used by a lot of citizens to get information about current issues in their municipality.

Measuring the impact of our publications in the communities proves to be difficult. As a rule, the Oekozynter Pafendall is not informed when a community uses information material from HACKS. Especially in the case of paper publications, it is difficult to find out whether the publications have been used. Many municipalities publish their municipal bulletin on their website, where the Oekozynter randomly searches for material from the HACKS project. In the case of social media, the search proves easier, as we have subscribed to several municipalities' Facebook pages.

For more information: Thierry Lagoda – Oekozynter Pafendall [thierry.lagoda@oeko.lu](mailto:thierry.lagoda@oeko.lu)



## France: Topten as an expert in a multiplier's publication

In France, Topten is managed by a very small structure and the team is technical, in the sense that it has expertise in products and energy efficiency more than in communication. The result is that there is a technical bias in the management – whereas it has only little value if very few people know about the existence of the Guide Topten quality content.

The team hired a communication agency specialising in digital communication to support its communication activities. Among other axes, it advised to put forward the team's technical expertise as a strategical positioning and try to obtain interviews in technical publications and in multipliers' publication as "technical expert".

Though this type of interview is not easy to propose, Guide Topten was contacted by the CLER, an NGO, to provide one, exactly acting as expert on the theme "Heating without CO2" for a double page interview in Autumn 2021.

The CLER, "the Network for the Energy Transition" is a network of more than 300 professional structures, from local authorities to associations, including installers – who receive its monthly publication called "Notre Energie" (Our Energy). The On-line version is open to the general public on the CLER's website, but the paper version is sent to the members.

**36** Le point sur...

**Se chauffer sans carbone**

**En Europe, les équipements de chauffage et les chauffe-eau représentent près de 25 % des émissions de CO<sub>2</sub>, un niveau comparable à celui du transport routier. Comment parvenir à faire sortir nos équipements de chauffage des énergies fossiles, en conciliant performances thermiques, économiques et écologiques ? Le point avec Sophie Attali, experte en économie d'énergie et directrice du Guide Topten.**

**Pourquoi la performance de chauffage domestique est-elle un enjeu européen ?**  
L'impulsion en 2015 des réglementations européennes sur l'affichage énergétique et l'écoconception a été jusqu'à présent l'émission de 20 millions de tonnes de CO<sub>2</sub> par an. Coopproduct for a cool planet, une coalition ONG européenne, dont fait partie le CLER - Réseau pour la transition énergétique, s'efforce de faire évoluer ces réglementations vers toujours plus d'efficacité. Elle estime que si on cessait d'installer des équipements de chauffage à énergie fossile à partir de 2025, on assurerait deux tiers des réductions d'émissions nécessaires pour atteindre l'objectif de neutralité carbone du secteur du bâtiment résidentiel et tertiaire en 2050. Le dernier rapport de l'Agence internationale de l'énergie appelle aussi à accélérer dès 2025

**Les énergies fossiles pour se chauffer.** Plusieurs États membres de l'Union européenne ont déjà anticipé : le Danemark interdit les chaudières à fuel ou à gaz naturel dans les constructions neuves depuis 2013, la Norvège a interdit leur usage domestique en 2020.

**Quelle est la situation en France ?**  
Un décret visant à interdire les chaudières au fuel et à charbon dans les bâtiments neufs comme existants devait entrer en vigueur en janvier 2022, mais a finalement été reporté. Il est en cours d'examen devant le Conseil d'État. La nouvelle réglementation européenne RE2020 qui régit la construction de bâtiments s'attache à décarboner l'énergie nécessaire au chauffage, en fixant un seuil maximal d'émissions de gaz à effet de serre pour la consommation d'énergie, de 4 kg de CO<sub>2</sub> par m<sup>2</sup> et par an pour les maisons individuelles, et de 6 kg par m<sup>2</sup> et par an pour les logements collectifs neufs.

**à partir de 2024.** Cela exclut les systèmes fonctionnant exclusivement au gaz naturel. Mais il reste tout terrain des bâtiments existants et des rénovations.

**Quelles solutions de chauffage reste-t-il ?**  
Il existe aujourd'hui de nombreuses alternatives à la consommation d'énergie de chauffage non renouvelable : les pompes à chaleur, les chaudières biomasse, les réseaux de chaleur urbain, les panneaux solaires thermiques, la géothermie... On voit aussi apparaître des chaudières à hydrogène, mais à ce stade, le recours à ce vecteur énergétique pose plus de questions qu'il n'apporte de réponses.

**Quel est le meilleur système de chauffage ?**  
Seul un technicien est en mesure de vous répondre, en analysant votre situation particulière. Les conseils du Réseau FAIRE de l'ADEME sont là pour vous aider à déterminer vers quel équipement vous tourner. L'isolation est bien sûr primordiale : aucun équipement n'est performant dans une maison thermique.

**Une fois votre choix d'équipement arrêté et convenablement dimensionné à vos besoins, vous pouvez vous tourner vers nos guides Topten, qui sont élaborés par des équipes indépendantes pour aider les consommateurs et consommateurs, et les acheteurs professionnels, à choisir les produits les plus économiques en énergie.** Aujourd'hui, en matière de chauffage, nous informons principalement sur les pompes à chaleur associées à des planchers chauffants ou des radiateurs basse température, qui sont parmi les équipements les plus performants. Nous avons prévu de faire paraître un comparatif des chaudières biomasse.

**Les étiquettes énergétiques ne fournissent-elles pas déjà ces informations ?**  
Ces étiquettes sont élaborées en associant

**18 %** DES ÉMISSIONS DE GAZ À EFFET DE SERRE DE LA FRANCE PROCHÈMENT DE LIÉGÈRE DES BÂTIMENTS RÉSIDENTIELS ET TERTIAIRES EN 2020 (SOURCE : ADEME/CLER)

Les syndicats de fabricants. Ceux-ci défendent tous leurs membres, y compris les moins performants, ce qui aboutit parfois à un nivellement avec des situations incongrues et peu compréhensibles. Par exemple, les chaudières à gaz fossile peuvent obtenir une classe A sur l'échelle actuelle ! Une révision est en cours et les meilleures classes ne devraient être réservées qu'aux systèmes utilisant des renouvelables. Mais elle n'entraîne en vigueur que dans plusieurs années. Le classement Topten ne retient que les meilleurs modèles et permet de comparer des produits qui ont le même équipement, selon une méthodologie claire et affichée, qui tient aussi compte de la réglementation européenne en matière d'écoconception.

Enfin Topten, au-delà de l'information du consommateur, contribue aussi à l'évolution des réglementations. Notre réseau se déploie dans 16 pays européens et nos recommandations ont par exemple abouti à la généralisation des vannes automatisées sur les machines à café. Cela peut sembler anecdotique, mais en maintenant l'eau chaude en permanence, ces petits appareils peuvent consommer autant qu'un réfrigérateur ! La problématique est similaire avec les chauffe-eau, avec des consommations bien plus importantes.

**« Il existe de nombreuses alternatives à la consommation d'énergie de chauffage non renouvelable »**

[www.coopproduct.eu/product/bookers](http://www.coopproduct.eu/product/bookers)

**EN SAVOIR O**  
[www.its.org](http://www.its.org)  
[www.guidetopten.fr](http://www.guidetopten.fr)

Following this publication, Guide Topten:

- Was invited to participate in a round table on heat pumps, involving other members of the CLER, which in turn led to a publication with policy recommendations for the French government – publication in which Guide Topten and its activity of identifying most efficient heat pumps in 2 categories is cited.
- Was contacted by a few installers and energy advisers to have more information about the Topten products selection.

A lesson learned is therefore that even though those type of interviews in a media with a relatively small audience does not necessary lead to a raise of page views and visitors on the website, they are useful to promote the project as whole. If they lead to concrete positive decisions, policy recommendations have a wider impact than visitors on the website that cannot be monitored in the details.

For more information, contact Sophie Attali: [sattali@guidetopten.fr](mailto:sattali@guidetopten.fr)



## Portugal: Joining EU campaigns to promote national website

Quercus is a member of several European coalitions of NGOs whose goal is to lobby for the implementation and improvement of policies regarding different environmental issues. One of these coalitions is [Coolproducts for a cool planet](#), led by the European Environmental Bureau (EEB) and the European Environmental Citizen's Organisation for Standardisation (ECOS), and working on ecodesign and energy labelling. In 2020, within the revision of water and space heaters, two different campaigns were conceived, one released in July and the other in November (several HACKS partners supported the campaign).



### I know what you did last Summer

The first one was released in July and focused on portable air conditioners, mainly consumers but also decision makers. The combination of an appealing infographics and the title from a slasher film that was a commercial success in the '90, seemed to work good.

The national campaign preparation covered translation, adaptation, inclusion of recommendations to avoid its need and a link to Topten/HACKS project. The dissemination included a press release (PR), an article on Topten website, posts of infographics in Portuguese on Quercus social media (twitter, facebook, instagram) and Quercus programme on regional radio. The success of the campaign was mainly related to the media coverage. The major media press published the PR and a radio interview was made. Social media coverage was also good, as shown below. Website traffic figures were not as positive as the above except for the Topten article published.

The message was also conveyed to the Directorate-General of Energy and Geology by email.



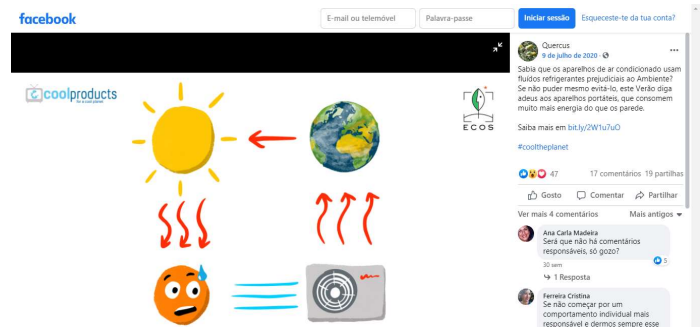
Twitter - 5 retweets | 7 likes



Instagram - 117 likes



Article on Topten - 268 views



Facebook (3 different) - 27 shares | 85 likes (in total)

## The EU must phase out new fossil fuel heaters by 2025 – or will not reach climate neutrality on time

The second campaign was released in December and called for the phase out of fossil fuel heaters, targeting mainly decision makers. Unlike the first one, the content, language and infographics were more technical and data oriented. The campaign was prepared to disseminate a report produced by ECOS.

The national campaign covered translation, adaptation, elaboration of PT own press release and a link to Topten/HACKS project.



Twitter - 3 retweets | 6 likes



Article on Topten - 199 views

The dissemination was similar to the previous campaign, although infographics were not available for translation, and included the already mentioned PR, an article on Topten website, posts on Quercus social media (twitter, facebook, instagram), as seen in Figure 2 and Quercus newsletter.

Though the issue was more technical and complex the media coverage was identical to the first one and not surprisingly the social media posts were not as successful as on the previous

campaign, especially on facebook. Once again traffic to the website did not increase but the article published had a good reading rate.

An email with national materials and the report was sent to the Directorate-General of Energy and Geology.

## Lessons learnt

Although the website traffic did not show an increase on the campaigns dates, collaboration with ONGs operating at an European level is highly recommended for the following reasons:

- similar subjects that could be exploited to disseminate the project
- positive association with well-known organisations
- technical data that enrich the project
- exchanges with experts that can support the development of some categories
- articles and other materials that can be accessed any time after the campaign
- communication ideas for future project activities
- strong media coverage
- low national effort and ready-to-use dissemination materials
- facilitates the contact with multipliers and national authorities

On the other hand, national collaboration is important for these organisations, because their central efforts are spread and reinforced by national experts.

For more information, contact Laura Carvalho: [lauracarvalho@quercus.pt](mailto:lauracarvalho@quercus.pt)



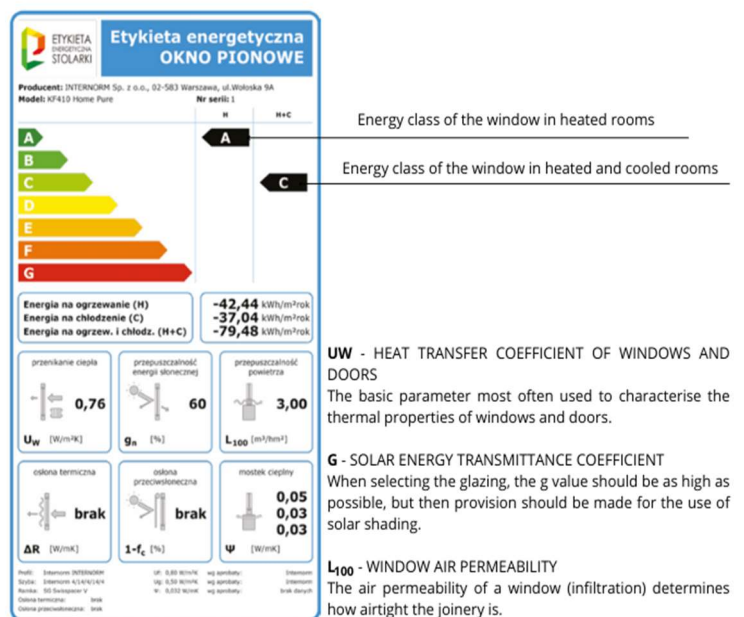
## Poland: Market transformation - Competition for best windows

In an effort to educate and build consumer awareness of the best energy-efficient solutions, it is important to take steps to support market transformation towards increased offer and availability of energy-efficient products from manufacturers. Consumers face difficult choices when planning investments to improve energy efficiency in their homes. Investors often lack technical knowledge, which makes it difficult for them to choose best solutions. It is especially difficult when it comes to products that are not covered by an EU energy label.

This is the case with window and door joinery.

Therefore, we lead a competition for manufacturers and distributors on the Polish market of windows and door joinery. The goal was to showcase and promote the best, energy-efficient and most economically and technically attractive vertical windows, roof windows and exterior doors. The competition has had 6 Editions so far. The latest one, "TOPTEN - HACKS WINDOWS 2022" lasted from January to June 2022, and ended with a gala in November in which all the winners were announced.

The competition was organized by (FEWE) in cooperation with the Lower Silesian Agency for Energy and Environment which developed a program calculating the energy efficiency of doors and windows: "Window Energy Label" and the methodology for evaluating woodwork for energy efficiency. The evaluation primarily took into account the energy balance of the product in a heated room and heated and cooled room. In addition, the economic aspect was taken into account, that is, the average purchase cost and installation of the selected window or door joinery. Elements such as waterproofing and acoustics were also considered.



The competition attracted a lot of interest. A total of 110 products from 78 manufacturers in five categories were submitted. The top 10 products in each category were selected, and an energy label was prepared for the best ones. The distinguished products were presented in the post-contest catalogue and on the organisers' websites.

<b>PRODUCT CATEGORIES</b>	<b>MANUFACTURERS</b>	<b>PRODUCTS</b>
<b>Exterior Doors</b>	20	23
<b>Roof Windows</b>	7	21
<b>Vertical Aluminium Windows</b>	26	26
<b>Vertical Wooden Windows</b>	15	15
<b>Vertical Pvc Windows</b>	25	25
<b>SUM</b>	93 (unique 78)	110

The strong interest from trade media across Poland, also had an impact on the greater attractiveness of the competition. A continuation of the initiative is planned for the future, once the HACKS project is completed.

#### **For more information**

Sabina Kozińska: [s.kozinska@fewe.pl](mailto:s.kozinska@fewe.pl),

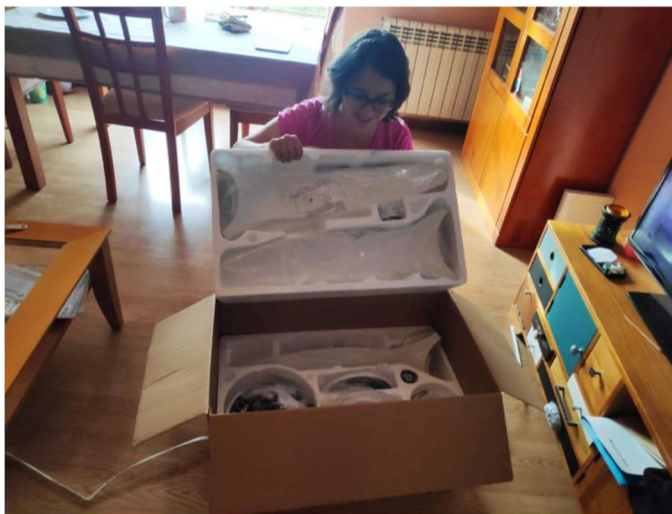
Polish Foundation for Energy Efficiency, Poland [www.topten.info.pl/hacks](http://www.topten.info.pl/hacks)

## Spain: Comfort fans for vulnerable households

We believe the comfort fan is a product that can improve comfort in the home during summer time, reducing the need to use air conditioning (very widespread in Spain), both during the day and at night, in order to cope with the so-called tropical nights that we experience throughout the summer in much of the country.

A comfort fan is a product that can be very useful for the general population, but also for a sector (vulnerable families), it may be the only way to improve thermal comfort in summer. That is why we collaborate with social services from different cities, which selected the families (more than 60 families) at risk of energy poverty, which help us to spread the competition among this population.

Leroy Merlin, the retailer where the product we were raffling could be found, helps us in the management of the product, but also in the diffusion of the raffle, as it is in their interest. The contestants have to find part of the information on the Leroy Merlin website, and another part on the Europten.es website. Leroy Merlin contributed to the dissemination of the contest by retweeting the campaign on social media.



The HACKS website saw a 67% increase in the number of visits compared to the previous month, and the level of visits has been maintained since then.

More than 240 people participated in the competition.

We managed to strengthen the relationship with Leroy Merlin as a retailer and with social organisations.

The use of a Whatsapp chain was very important to ensure the dissemination of information to this population. In general, this is not an audience that uses email very often, so we had to find a more direct way.

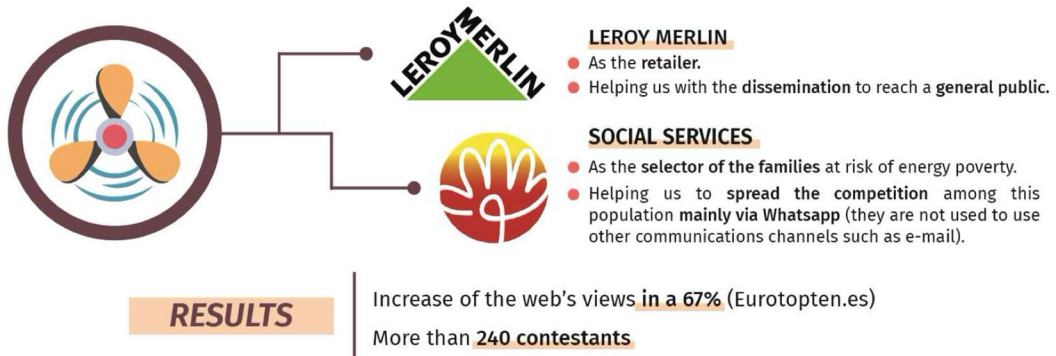
We also used radio broadcasting, which allowed us to reach a more general public.




# COMFORT FANS FOR VULNERABLE HOUSEHOLDS

Fans are products that can improve comfort at home during the summertime. They are very useful for the general population but especially **for vulnerable families**. Sometimes, they are the only way for them to deal with the hot weather that we experience throughout much of Spain.

For this reason we organised a **fan raffle** in collaboration with:



 This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 845231.  
The sole responsibility for this content lies with the authors. It does not necessarily reflect the opinion of the European Union. Neither the EASME nor the European Commission are responsible for any use that may be made of the information contained therein.



More information: Mónica Vidal - ECODES, [monica.vidal@ecodes.org](mailto:monica.vidal@ecodes.org)



## Norway: The Energy Expert - Highlighting the Superheroes of the low Energy Society



There should be no question about it. The future low emission Society must also become a low energy society. And in reducing the overall energy consumption, buildings and especially households, the construction companies and workers are key actors.

There must be a transition where workers in different building disciplines like carpenters, plumbers, electricians, ventilation workers and refrigeration technicians etc. must become energy consultants (or even further along the way - a sustainability consultant) as well as performers.

With the concept “Energispesialist” (i.e. Energy expert) we would like to find, approach and highlight the highly competent, professional, and solid construction companies in Norway, and make a system that values competence and knowledge.

At the moment the concept mainly consists of the subcategories “Heating” and “Remediation”, but we work on including “Carpentry/Rehabilitation”, “Ventilation”, “Electro” and “Consulting”.



The need for such a concept is highly approved both in the building industry and the different Industry associations in Norway, and by consumer organizations.

As part of Topten HACKS we have:

- Collaborated with national and local Industry associations and authorities on developing criteria's for “Energispesialist” as a professional quality assurance scheme. We require:
  - Formal qualifications
  - Stable organizational form
  - Economical solidity
  - Excellent manufacturer and customer reviews
- Developed a market strategy for both industry associations, the construction companies, and consumers.

- Developed an integrated web system and a contact form on our Topten HACKS webpage where Energy expert installers receive and reply to consumers HAC-solution installation requests.
- Accepted 30 companies as Energy expert installers.
- Received 193 HAC-solution installation requests from consumers.

The goal is to highlight both the competent building workers and their importance in the green shift. At the same time, we want to make the consumer process from information to installation of efficient HAC-products as short as possible.

There are some important aspects we need to take into consideration in the future development of the concept.

- The building industry that used to be financially stable are now in a completely different situation due to Covid. This could be an advantage for the development of the concept, but we also have some difficulties implementing our original marketing strategy.
- The original strategy to involve and reach out to consumers to market the Energy expert installer needs to be revised.
- As an environmental NGO we have little or no innovation or venture capital available. There might be other institutions or actors more suitable for further development of “Energispesialist” as a professional quality assurance scheme.

***For further information contact:***

Silje Østerbø | Project developer | Energismart and Oljefri | [silje@naturvernforbundet.no](mailto:silje@naturvernforbundet.no)

Martin Leander Brandtzæg | Department manager | Naturvernforbundet  
[mb@naturvernforbundet.no](mailto:mb@naturvernforbundet.no)

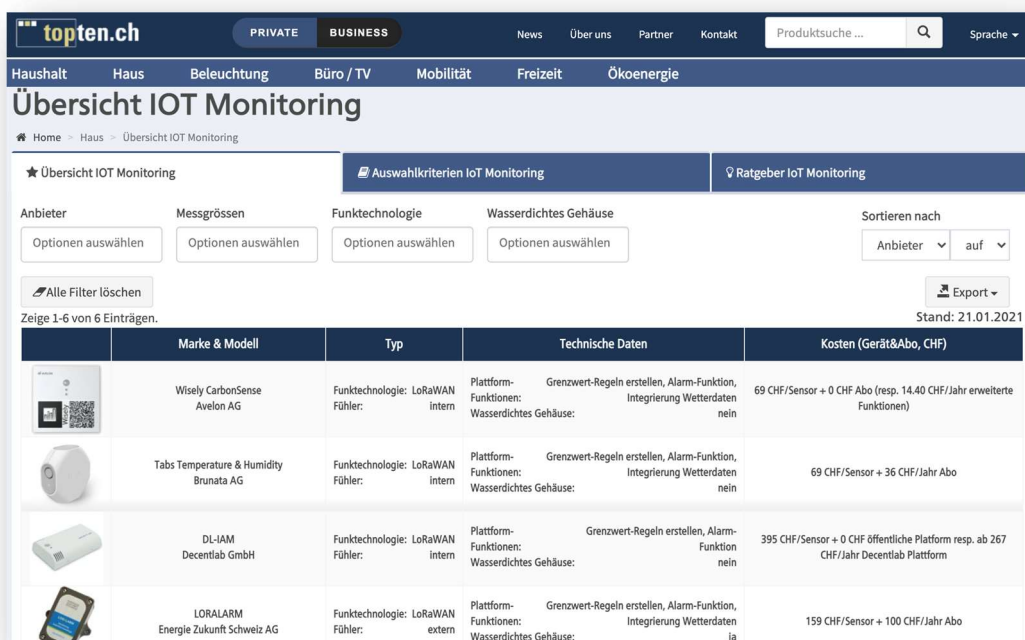
## Switzerland: Internet of Things Monitoring – providing installers with tools to make efficient technology even more efficient





Bush Energie cooperated in a project supported by EnergieSchweiz, one of their main partners, in creating a list of best Internet of Things (IoT) monitoring devices on the Swiss market. EnergieSchweiz is a national competence centre by the Swiss Federal Office of Energy and focusses on energy efficiency and communication projects. The goal of the project was to reduce the energy consumption of buildings in Switzerland by providing installers with a list of the best IoT monitoring devices on the national market and information about their handling.

Efficient building technology contributes greatly to reducing the electricity consumption of a household. Monitoring this technology has further advantages for optimising settings and serves as early warning system in case of failures. The monitoring systems themselves have very low consumption and are mostly battery-powered.

The project produced four main information sources in German, French and Italian:

1. An **information leaflet**, available for download on [https://storage.topten.ch/source/files/IoT\\_Merkblatt\\_EZS\\_suissetec.pdf](https://storage.topten.ch/source/files/IoT_Merkblatt_EZS_suissetec.pdf)
2. A **product list** of the complete solutions for IoT monitoring systems available on the Swiss market, available at [www.topten.ch/iot](http://www.topten.ch/iot)
3. Clear **selection criteria** for the IoT monitoring solutions displayed on Topten.ch, as well as a glossary to explain terminology, available at <https://www.topten.ch/private/selection-criteria/kriterien-iot-monitoring>
4. An **adviser page**, explaining the function and advantages of IoT monitoring systems, the technologies used and steps to install the systems as well as giving an outlook into the global IoT initiative “The Things Network”, available at <https://www.topten.ch/private/adviser/iot-monitoring>



Marke & Modell	Typ	Technische Daten	Kosten (Gerät&Abo, CHF)
 Wisely CarbonSense Avelon AG	Funktechnologie: LoRaWAN Fühler: intern	Plattform-Funktionen: Grenzwert-Regeln erstellen, Alarm-Funktion, Integrierung Wetterdaten Wasserdrichtiges Gehäuse: nein	69 CHF/Sensor + 0 CHF Abo (resp. 14.40 CHF/Jahr erweiterte Funktionen)
 Tabs Temperature & Humidity Brunata AG	Funktechnologie: LoRaWAN Fühler: intern	Plattform-Funktionen: Grenzwert-Regeln erstellen, Alarm-Funktion, Integrierung Wetterdaten Wasserdrichtiges Gehäuse: nein	69 CHF/Sensor + 36 CHF/Jahr Abo
 DL-IAM Decentlab GmbH	Funktechnologie: LoRaWAN Fühler: intern	Plattform-Funktionen: Grenzwert-Regeln erstellen, Alarm-Funktion Wasserdrichtiges Gehäuse: nein	395 CHF/Sensor + 0 CHF öffentliche Plattform resp. ab 267 CHF/Jahr Decentlab Plattform
 LORALARM Energie Zukunft Schweiz AG	Funktechnologie: LoRaWAN Fühler: extern	Plattform-Funktionen: Grenzwert-Regeln erstellen, Alarm-Funktion, Integrierung Wetterdaten Wasserdrichtiges Gehäuse: ja	159 CHF/Sensor + 100 CHF/Jahr Abo

Picture 1: Screenshot of available solutions on topten.ch/iot

The materials were uploaded and publicly available on Topten.ch in October 2020 and communicated on the Topten.ch start page through a news article and carousel image as well as a Facebook post.

Impact: 822 page views on Topten pages. The leaflet was presented in October during a training course by Suissetec Nordwestschweiz, a Swiss trade association for heating, cooling and plumbing trades.

Extra: Topten stepped in to offer services the project partner could not provide (due to absolute neutrality of government stakeholders) in displaying best products on a known and professional platform.

For more information, contact Maike Hepp: [maike.hepp@topten.ch](mailto:maike.hepp@topten.ch)



## Portugal: Collaboration with a professional association

In Portugal there is a voluntary label for sanitary tapware created and managed by ANQIP - a non-profit technical-scientific association - that issues and revises the technical specifications these products must comply with, tests the products, trains installers, issues the yearly national product catalogue, among other activities.

The contribution of this relevant stakeholder was a key factor for the development of the faucets and flow regulators HACKS new category. They provided the technical criteria for the products selection, helped engage manufacturers in the process which supported data collection and, last but not least, the category uses a label recognised by national consumers, since some shops display the label in selling products.

Quercus had work with this association ten years ago in a national project and this previous contact facilitated our approach and their acceptance to be our partner. Their involvement was crucial to speed the definition of the new category which was launched on the National Water Day. Hence, on October 1st, a press release was published, a green minute was broadcasted on national TV highlighting also the partnership established, and other posts were published on Quercus social media channels - twitter, facebook, instagram - (see Figure 1). To reinforce communication, a HACKS infographics on water and energy savings of efficient faucets and showers was used. Whenever possible, links to the association's social channels were made.

That day the number of Topten.pt visitors increased and represented 30% of the hole month visits.

Associação Nacional de Conservação da Natureza

QUIERCUS CAMPANHAS COMUNICADOS NOTÍCIAS ÁREAS TEMÁTICAS PROJETOS CONTACTOS

### Dia Nacional da Água – Quercus ajuda consumidores a reduzir a fatura do consumo de água e energia

#### Bombas de calor e dispositivos sanitários são as novas categorias em [www.topten.pt](http://www.topten.pt), ambas abrangidas pela comparticipação do Fundo Ambiental

Cada português consome, em média, 192 litros de água por dia, sendo a higiene pessoal o maior responsável por uma fatia considerável deste consumo, em particular, sob a forma de água aquecida. Como tal, a sua poupança tem implicações diretas nas faturas mensais da água e da energia. De facto, a produção de água quente sanitária (AQS) representa cerca de 24% do consumo energético nas habitações portuguesas.

A aplicação de redutores de caudal nas torneiras e/ou nos duchas, bem como a substituição destes dispositivos sanitários e de equipamentos de AQS, por modelos com maior eficiência hídrica e energética, são algumas das formas de alcançar a poupança de recursos.

Numa altura em que está a decorrer o Programa de Apoio a Edifícios Mais Sustentáveis, apoiado pelo Fundo Ambiental, que permite, mediante candidatura, a obtenção de incentivos até 20 % na aquisição destes equipamentos, o portal [www.topten.pt](http://www.topten.pt) torna-se uma ferramenta muito útil.

Neste momento, o projeto Topten/HACKS faz a diferença, pois dá a conhecer aos cidadãos, através das suas mais recentes categorias, que os dispositivos sanitários mais eficientes, quer as bombas de calor que têm a função de AQS.

Para a criação da nova categoria em [www.topten.pt](http://www.topten.pt) dedicada aos dispositivos sanitários – que abrange torneiras, chuveiros e redutores de caudal – a Quercus conta com a importante colaboração da parceira ANQIP / Associação Nacional para a Qualidade nas Instalações Plásticas, enquanto criadora e gestora do rótulo nacional de eficiência hídrica.

O portal Topten.pt disponibiliza atualmente 17 categorias<sup>(1)</sup> e está em constante atualização. A seleção dos modelos segue um processo transparente e independente, sendo os dados recolhidos nos websites, catálogos e através de troca direta com os fabricantes, os critérios de seleção aplicados são definidos a nível europeu, com base científica e legislativa.

O projeto HACKS, que se apoia na plataforma Topten, é financiado pelo Programa Quadro de Investigação e Inovação - H2020, da União Europeia, que reúne 17 parceiros de 13 países.

**TORNEIRAS E CHUVEIROS MAIS EFICIENTES POUHAM ÁGUA E ENERGIA**

Topten.pt e o portal independentemente onde encontra os produtos mais eficientes e amigos do ambiente

Para mais informações, contacte-nos em [info@topten.pt](mailto:info@topten.pt)

<sup>(1)</sup> Torneiras, chuveiros e redutores de caudal; bombas de calor; ventoinhas; esquentas de ar; condicionais; aparelhos eletrónicos; categorias e áreas: frigoríficos, fornos, impressoras, lâmpadas, monitores, máquinas de café, máquinas de lavar roupa, máquinas de lavar loiça, refrigeração profissional e freezers.

Press release

topten.pt'. The Instagram post has 85 likes and was posted on October 1st, 2020."/&gt;

www.topten.pt'. The broadcast is part of the 'Minuto Verde' series and is being presented by the 'ADMINISTRAÇÃO DA TRANSPORTADORA AÉREA NACIONAL TA'."/&gt;


Green Minute (Minuto Verde)

Figure 1 - New category dissemination in media and social media

Contacting manufacturers is, usually, very time consuming and not successful, especially when new product categories are being started. The link to the association "opened doors" because, on one hand they provided the manufacturers right person contact, talked to some of them and, on the other hand, those contacts where more willing to cooperate and provide the needed data for the products lists.


ANQIP also reviewed all the information - criteria and recommendations - linked to the product category. Additionally, they supplied Quercus with data from their own tests on flow regulators applied for different uses (kitchen, basin, shower). These data where further elaborated and redesigned to produce the images shown in Figure 2.

Torneiras da cozinha com caudal superior a 9 l/min\*

	Pressão da rede	Alta (> 4 bar)	Esquentador	Com ou sem	Caudal final $\pm$ 9 l/min
				Com	Caudal final 6-9 l/min, se 2 bar e $\geq$ 9 l/min, se 3 bar
					Sem
				Com	Não recomendado
					Sem


se for inferior não é necessário o regulador de caudal

Torneiras de lavatório com caudal superior a 6 l/min\*

	Pressão da rede	Alta (> 4 bar)	Esquentador	Com ou sem	Caudal final $\pm$ 6 l/min
				Com	Caudal final 4-6 l/min, se 2 bar e $\geq$ 6 l/min, se 3 bar
					Sem
				Com	Não recomendado
					Sem

se for inferior não é necessário o regulador de caudal

Cabeças de chuveiro com caudal superior a 7,5 l/min\*

	Pressão da rede	Alta (> 4 bar)	Esquentador	Com	Caudal final $\pm$ 7,5 l/min
				Sem	Caudal final 5-7,5 l/min
				Com ou sem	Caudal final 5-7,5 l/min, se 2 bar e $\geq$ 7,5 l/min, se 3 bar
					Sem
				Com	Não recomendado
				Sem	Caudal final 5-7,5 l/min

\* se for inferior não é necessário o regulador de caudal

Figure 2 - Technical contribution from ANQIP

Installers training is included in ANQIP's activities and they list all the certified professionals. HACKS has a link to their list on the product category recommendation page.

In the future further joint activities should be developed but, so far, this case study shows that partnerships with professional associations can help overcome the difficulty in engaging manufacturers and installers, and can also supply technical support for more complex product categories.

It is important to let them know that the partnership does not necessarily demand a lot of time from their side to produce goods results, to keep them informed about the steps being developed with their associates and to include them in the communication materials preparation and dissemination.

For more information contact Laura Carvalho: [lauracarvalho@quercus.pt](mailto:lauracarvalho@quercus.pt)



## Lithuania: Towards energy-efficient and green multifamily houses



61% of Lithuanian population live in appr. 35 thou. multifamily houses, of which 80% were built in the 1960-90 period of mass construction. In these times, energy was abundant, cheap and consequently construction and energy efficiency standards were set low. Today, energy systems of these houses are outdated, worn out, inefficient and offering little comfort to flat owners. Since the sole modernisation of these houses was replacement of old heating substations by new, automated ones, which adjust room heating to outdoor temperatures. Meanwhile, all internal piping and heat distribution systems remained unchanged and many of them still lack both balancing and thermostatic valves thus preventing flat owners from adjustment of room temperature.

From 2005 government started a series of modernisation programmes intended for multifamily houses that were built by 1993. Houses that embarked on such modernisation were given 40% subsidy (currently, 30%). As a rule, modernisation embraced insulation of the building envelope, replacement of windows, outer doors and worn-out internal piping. This renovation model resulted in half-reduction of energy for heating, protection of the building envelope against ambient conditions and a better look of the building. However, it was quite expensive and unaffordable for many house owners. To date, about 3 thou. multifamily houses were renovated in line with this approach. This is just nearly 10% of the whole building stock to modernise.

From 2019 a so called “small or engineering renovation” was permitted. Multifamily houses were allowed to choose smaller improvements, mainly internal systems, piping and components, and still be eligible for the standard government support. This enabled more houses to decide on smaller and cheaper improvements, which, nevertheless, are efficient.

Lithuanian Nacional Consumer Federation (LNCF) considered this environment an appropriate time to contribute. Having obtained more expertise while working in HACKS project, LNCF initiated discussions with the key stakeholder in government modernisation programmes – Housing Energy Efficiency Agency (HEEA, [www.betalt.lt/en](http://www.betalt.lt/en)). We proposed an idea to implement a few pilot projects with various packages of measures to implement starting from basic ones (and correspondingly, cheapest) to complex energy systems that incorporate alternative, environment-friendly energy sources and smart overall control. Interested house

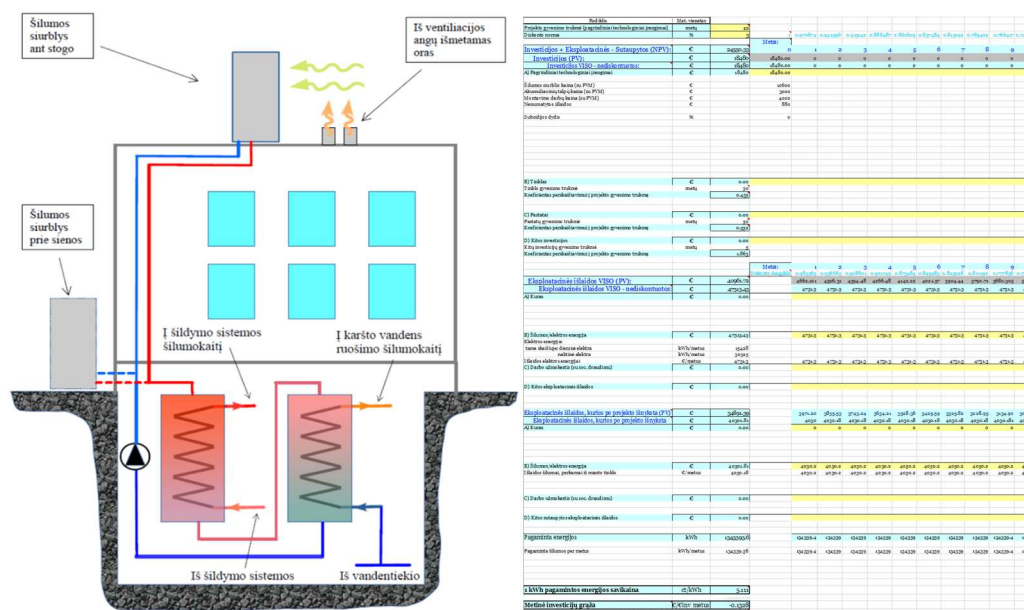


owners would be able to see how these things work in reality and choose from them according to personal taste and financial capacity.

After a couple of discussions with HEEA in July 2020, it was agreed that LNCF would prepare a brief catalogue of technical means and technologies grouped in several packages of increasing cost and complexity. The work was done in September 2020 and the catalogue was submitted to HEEA.

The catalogue embraces some heating equipment presented on HACKS data base, which is combined into a few packages. This could serve as a good base for pilot buildings to demonstrate options and possibilities to choose from by interested customers.

Installation schemes of heating equipment were supported by financial evaluation. Below, is shown an example of installation of an “air-water” heat pump in a conventional setting and corresponding financial evaluation under certain assumptions. In this particular case, financial calculation shows that cost of produced heat is slightly above 5 ct/kWh. It is profitable only in the systems that produce/sell heat at cost/price above that value. In Lithuania case, about half of 50 district heat suppliers sell heat at a price above 5 ct/kWh, correspondingly, the heat pump would be financially viable in these regions only.



Picture. Extract from the catalogue. Installation of an “air-water” heat pump in the heating system of a typical multifamily house. On the left, a financial assessment of such investment is shown.

The catalogue is available in Lithuanian.

For more information: [www.ecotopten.lt](http://www.ecotopten.lt)

Rimantas Zabarauskas: [Rimantas.Zabarauskas@gmail.com](mailto:Rimantas.Zabarauskas@gmail.com)

## Sweden: Top Ten as a simple tool for homeowners to evaluate energy efficiency measures

The SSNC has been a part of a collaboration project titled *Development and test of a quota obligation scheme with a focus on power reduction*, nicknamed (and hereafter called) *the Casablanca project*. The project ran through 2018 to 2020 and gathered two universities, the Swedish energy agency, a power company, two other private companies and the non-profit organization SSNC. The main purpose was to examine energy efficiency measures on regional and local levels through the use of white certificates, an approach not currently used by Swedish authorities. The measures taken was concentrated on the Göteborg area as well as the Västra Götaland region.

Three main group of “tests” were set-up. The first targeted larger housing companies, the second housing cooperatives and the third homeowners. When the energy efficiency measures in the third group began to take a tangible form, the project group realised they needed a simple tool that homeowners could use to verify if new equipment to be acquired would increase energy efficiency. Limiting equipment to the most efficient on the respective market would assure this. Top Ten proved to be a very efficient tool in that regard. Homeowners used the website to find preferred products, then providing the project with receipts once the purchase was done. The project group would then match the receipts with Top Ten again to check that the equipment bought was indeed among the most energy efficient.

Since the Casablanca project was launched before all HACKS categories came online in 2020, the categories used at first were windows and circulations pumps, as well as a couple of non-HACKS categories such as refrigerators.

A total of 5 000 000 Swedish kronor (around 500 000 euros) was paid out from SSNC’s energy efficiency fund during the project, distributed among 10 different large projects in test group 1 and 2. In the third group, homeowners, each received between 2 000 and 20 000 kronor (200-2 000 €) for measures in their houses, installing new HAC equipment present on Top Ten. The total energy savings were estimated to about 6 GWh yearly. The main purpose of the project, however, was to examine the potential of white certificates, which is still a fairly uncharted approach in Sweden.



Figure 1 - newly installed energy efficient windows in Murödlan i Bö, a housing cooperative in Göteborg.

For more information, contact Emanuel Blume at [emanuel.blume@naturskyddsforeningen.se](mailto:emanuel.blume@naturskyddsforeningen.se) or visit [www.topten.eu](http://www.topten.eu) or [www.toptensverige.se](http://www.toptensverige.se)

## Switzerland: Research Project “Heating with Air Conditioners”

Many **inefficient direct electric heaters** are still in use in Switzerland. Their replacement is often prohibitively expensive if a central heat distribution system has to be installed. Here, **air-conditioning units in heating mode** present themselves as preferable alternative, as they have a threefold better efficiency thanks to heat pumps. There are, however, open questions about efficiency, heat distribution, comfort and noise.

Currently, the discussion about using air conditioners in heating mode seems to be based on preconceived opinions rather than on facts or research. It is also interesting to note the popularity of such heating solutions in Spain and Norway, while in comparable countries such as Italy and Sweden these solutions are unpopular.

Air conditioners are a very good solution for heating in specific circumstances, where (i) no central heat distribution network is available or retrofitting is not cost-effective, or (ii) the only alternative is direct (resistance) electric heating.

A central heat distribution system (mostly water pipes) is prerequisite for the use of traditional heat pumps (air-to-water, sole-to-water). Air conditioners, which are air-to-air heat pumps, are a tried and tested mass product and therefore the product cost is relatively cheap. Also, installation is fast and cheap compared to retrofitting as no wall-breakthroughs are required. On average, the energy saving potential is in the order of magnitude 3x compared to electric heaters

### Initial Research Project “Heating with Air Conditioners”

Topten Switzerland conducted in 2020/21 a research project in order to contribute to the possible exploration of such a large efficiency potential with fact-based research. The project was initiated in a **partnership with EKZ**, the utility company of the canton of Zurich.

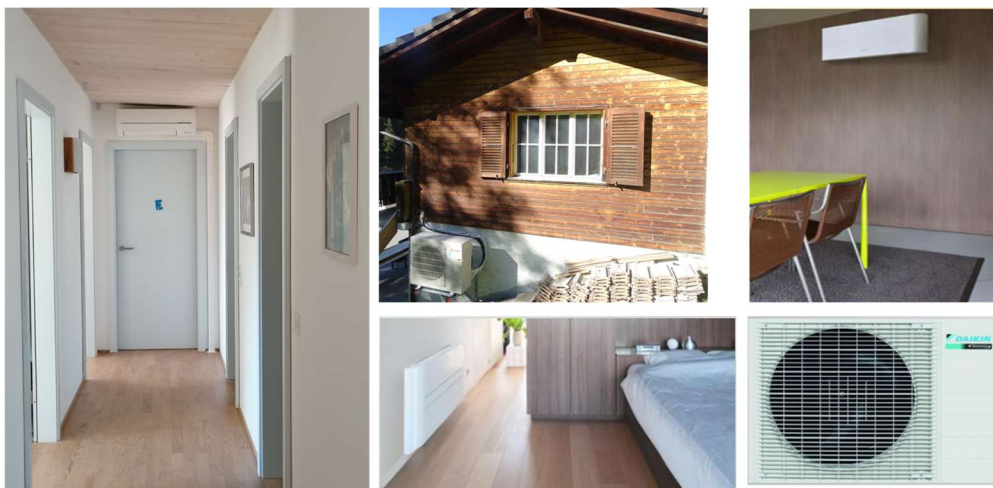


Figure 1: Photos of outdoor and indoor units of split air conditioners used for heating

## **Main Project funded by the Swiss Ministry of Energy**

Given the promising results of the pre-study, Topten Switzerland was able to secure funding from the Swiss Ministry of Energy (BFE) for a full study on the topic Heating with Air Conditioners.

One of the main objectives is to study the suitability to replace inefficient electric heaters. For that reason, Topten Switzerland approaches the project from a theoretical and a practical point-of-view.

- On the one hand, it determines, which products are technically particularly suitable for heating; conducts interviews with manufacturers and suppliers; and finally creates a product list on Topten.ch with the best air conditioners best suited for performing in cold environments.
- On the other hand, real-life cases are being studied, to learn about the practical application of heating with air conditioners and the perception of users: a variety of cases in terms of climate zone and type of house (holiday apartment, primary residence, old houses, office) are within the scope of the analysis; the energy consumption before and after installation of air-conditioner as means of heating is analysed; users are being interviewed on their perceived level of comfort, noise aspects, experience with obtaining building permits.

## **Intermediate Lesson Learnt**

- Efficiency of air conditioners has increased significantly within the past 5-10 years, especially through improvements on the compressor, condensing units, and smart operation modes.
- Essentially, every device today uses inverter technology, allowing to reverse the refrigerant cycle, thus allowing for cooling in summer, and heating in winter.
- Products are able to perform even in the very cold outdoor temperatures, many being able to reliably deliver the required heat output at -25°C. Efficient models might even feature a coefficient of performance (COP) of 2.0 at -15°C outdoors, meaning the air conditioner is 2x more efficient than an electric heater.
- During the course of the project, we have pivoted our focus from only secondary/holiday homes, to study a broader variety of objects, including primary homes and commercial spaces, such as offices or garages. Against our initial expectation, we have found a much bigger number of cases where people are heating with air-conditioners that are not the traditional holiday cottages.

The project has started mid-2022 and results are to be expected towards the end of 2023.

For more information, contact Steffen Hepp: [steffen.hepp@topten.ch](mailto:steffen.hepp@topten.ch)



## Czech Republic: Using the HACKS efficiency criteria for solid fuel boilers and local space heaters in the New Green Savings subsidy programme

Czech HACKS team was involved in the overall process of Czech subsidy programme update and helped with setting the HACKS efficiency criteria for solid fuel boilers.

The New Green Savings Programme of the Ministry of the Environment is a Czech subsidy programme focused on energy savings in family houses and apartment buildings. It supports the reduction of the energy intensity of residential buildings (complex or partial thermal insulation), construction of houses with very low energy intensity, environmentally friendly and efficient use of energy sources and renewable sources of energy. It is the only generally available subsidy programme for the residential sector in the Czech Republic. The New Green Savings Programme is administered by the State Environmental Fund.

Czech HACKS team elaborated a targeted recommendation for an update of the programme in December 2020 as part of the HACKS project activities. The team proposed to increase minimal efficiency to solid fuel boilers (A+), local space heaters (A+) and circulation pumps (EEI 0.18) according to the HACKS selection criteria. Also, the recommendation mentioned to set maximum allowed emissions of solid fuel boilers and local space heaters according to the HACKS project. The key change was to upgrade the minimum requirements from the Ecodesign thresholds to higher, energy label-based energy efficiency classes.

The HACKS team received feedback that State Environmental Fund would consider the recommendation in the process of the upcoming programme update. While no further feedback or communication was provided, the current version of the New Green Savings Programme (April 2022) requests the minimal efficiency A+ for solid fuel boilers. This can be considered as a direct success showing that the HACKS project contributed to the overall process of the programme update and an important shift towards higher energy efficiency requirements.

Tabulka 6 – Požadované parametry v podoblasti C.1 – Zdroje Energie

Typ zdroje	Požadavky na zdroje	
Kotle na biomasu	Třída energetické účinnosti	A+ (EU) č. 1187/2015
	Splnění vybraných předpisů	(EU) č. 1189/2015
	a) Podporovány jsou pouze kotle určené výhradně ke spalování biomasy. Podpora se neposkytuje na pořízení kotlů určených na spalování pevných fosilních paliv a nedřevní biomasy, a to i v případě kotlů umožňujících spalování více druhů paliv (tzv. kombinovaných kotlů). b) V případě kotlů s ručním přikládáním je vyžadováno současné užití zásobníku tepla o minimálním objemu 55 l/kW instalovaného výkonu kotle (včetně případného zásobníku teplé vody, pokud je tímto kotlem ohříván). Objem zásobníku tepla lze stanovit též výpočtem dle ČSN EN 303-5. Nejmenší objem zásobníku je minimálně 300 litrů, a to i v případech, kdy zásobník není dle této normy požadován.	

Extract from The New Green Savings subsidy programme showing minimal criteria for heat source replacement for solid fuel boilers (April 2022)

For more information, contact : Michal Stasa, [michal.stasa@svn.cz](mailto:michal.stasa@svn.cz)



## Luxembourg: Heat transition - How HACKS contributes to an attractive rebate programme for renewable energies in Luxembourg.

In Luxembourg, as in many European countries, the potential for energy savings remains huge. Eurostat published data on the share of energy from renewable sources for heating and cooling. Luxembourg is in fourth last place out of 27 countries. In 2021, Luxembourg produced 1.6 tonnes of greenhouse gases per capita, mainly for home heating. It is therefore important to encourage the citizens to invest in insulating their homes and in replacing old heating systems with renewable energy systems.

For this reason, the Luxembourg government replaced its current rebate programme for renewable energies with a more advantageous package called "Climate Bonus". Heating systems that fall under the support programme are: Heating networks, Geothermal heat pumps, Air-to-water heat pump, Biomass boiler

Owners of an existing building can even benefit from the "Fuel Replacement Programme" with an additional grant of 30% when replacing an existing fossil fuel-based heating system. The amount of the subsidy for heat pumps depends on whether it is an existing building or a new building and whether it is a single-family house or an apartment building. In addition to the amount shown the tables below, the government adds a bonus in certain cases.

In 2021, the Luxembourg government received 303 applications for subsidies for heat pumps.

Geothermal heating pumps	Single-family home	Building/apartments
Existing building & New building	8.000 € - 12.000 €	7.500 € - 37.500 €

Air/water heating pumps	Single-family home	Building/apartments
Existing building	5.000 € - 12.000 €	5.000 € - 12.000 €
New building	3.000 €	2.000 € - 10.000 €

In addition to heat pumps, the government also supports the purchase of wood heating systems, although these receive far less financial support from the state. Importantly, an efficient particle filter is mandatory for all these heating systems. 98 applications for heating systems powered by biomass were paid out in 2021.

Pellets and wood chips	Single-family home	Building/apartments
Existing building	max. 7.500 €	max. 30.000 €

Wood logs	Single-family home	Building/apartments
Existing building	max. 3.500 €	

Pellet stove	Single-family home	Building/apartments
Existing building	max. 2.500 €	-

Luxembourg is also no stranger to energy poverty. As a supplement to the financial aid mentioned above, the government can double the amount of support, depending on the annual income of the applicants. Statec, the Luxembourg statistical office, estimates that by 2023, 3.2% of households living in Luxembourg could fall into energy poverty.

The Oekozenner Pafendall was involved at an early stage in the development of the national rebate programme so that the criteria developed as part of the HACKS project could be taken into account.

For example, on the subsidy calculator developed by the national Climate Agency, there is a link to the website [www.oekotopten.lu](http://www.oekotopten.lu), which refers to the product lists of efficient heating systems. In the lists mentioned, the consumer finds all heating systems sold in Luxembourg that are eligible for the rebate programme. Boilers, heating pumps, stoves and even pellets can be found there.

The screenshot shows the website interface for 'oekotopten'. At the top, there are tabs for 'USAGE PRIVÉ' and 'PROFESSIONNEL'. Below this is a navigation bar with categories: 'Ménage', 'Télévisions et Smartphones', 'Eclairage', 'Mobilité électrique', 'Subsides', and 'Chauffage et isolation'. Under 'Chauffage et isolation', there are several product categories: 'Matériaux d'isolation', 'Pompes de chauffage', 'Chauffe-eau', 'Pompes à chaleur', 'Poêles - foyers', 'Systèmes de chauffage', and 'Granulés de bois - Pellets'. A table below lists specific products with their energy efficiency classes and costs.

Affichage de 1-10 sur 18 éléments.		dernière mise à jour 10.10.2022	
	Marque & Modèle	Énergie	Coût (€)
	Buderus WPS 22.2 HT	Classe d'efficacité énergétique à 35°C: Classe d'efficacité énergétique à 35°C:	A+++ A+++
	Noval Belaria pro compact 13/100/270	Classe d'efficacité énergétique à 35°C: Classe d'efficacité énergétique à 35°C:	A+++ A+++
	Noval Belaria pro compact 8/100/270	Classe d'efficacité énergétique à 35°C: Classe d'efficacité énergétique à 35°C:	A+++ A+++
	Noval Belaria pro confort 8	Classe d'efficacité énergétique à 35°C: Classe d'efficacité énergétique à 35°C:	A+++ A+++

In addition to the product lists, the consumer can also find detailed information on the criteria as well as further information on the Climate Bonus support programme in the recommendations section, which is updated regularly.

The involvement of the Oekozenner Pafendall from the Ministry of the Environment in the development of rebate programme criteria was useful on both sides. By working together, the Ministry of Environment benefited from the expertise of the European partners of the HACKS project in drafting the criteria. On the other hand, the HACKS project benefited from increased visibility via the website [www.oekotopten.lu](http://www.oekotopten.lu).

For more information: Thierry Lagoda – Oekozenner Pafendall [thierry.lagoda@oeko.lu](mailto:thierry.lagoda@oeko.lu)

## Switzerland: Local rebate programme at the start of a long endeavour

In 2017, at the request of the utility of the Canton of Zurich (EKZ), Topten started a product list on comfort fans to determine which were the most efficient fans on the Swiss market. The intention of EKZ was to launch a rebate programme for comfort fans for their clients that would last several months. If the client bought an energy efficient comfort fan, EKZ would reimburse them a share of the purchase price. Based on the market research undertaken, it was observed that many products did not fulfil their basic information requirements that are mandated by the European Ecodesign Commission Regulation (EU) No 206/2012. Indeed, the product survey showed that 89% of all products, did not declare the required information. Once it was explained to the manufacturers that energy efficient products would receive a subsidy, some manufacturers shared the product data.

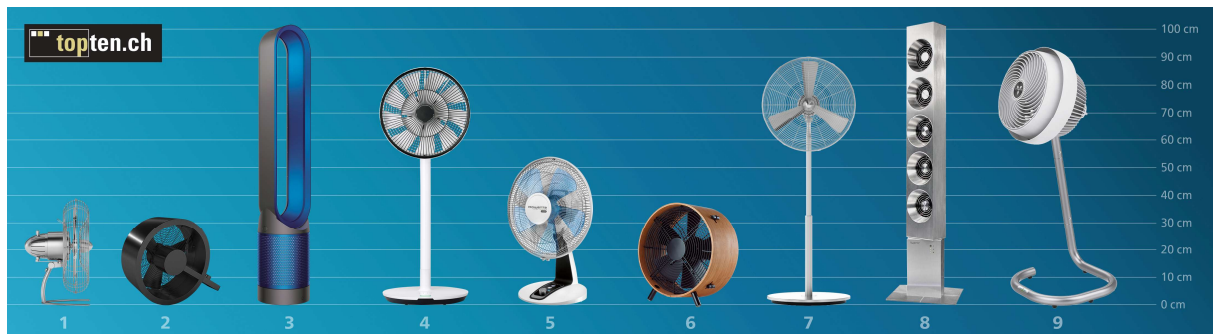


Figure 2: Promotion graphic for the EKZ Rebate programme for comfort fans. Source: Topten.ch

### Low compliance of comfort fans with the regulation

During the assessment of the products, it was observed that 42% of the products for which data was available, did not comply with the MEPS that are into force in China, which is the largest supplier of comfort fans in Europe amounting to 95% of units by volume. This means that products that are too inefficient to be sold in China, are being manufactured in China with the sole purpose of being shipped to Europe (probably among other regions). With this practice, Europe is a dumping ground for inefficient products coming from China.

After EKZ's subsidy programme was launched and brought to an end, Topten continued to maintain the products list for comfort fans as a part of the HACKS project. WWF, a long-term partner of Topten, also extensively communicated on the subject in the context of the HACKS project and their promotion of sustainable cooling solutions. In 2019, the utility of the city of Zurich (ewz) initiated a rebate programme that also subsidized comfort fans.

### Revision of the regulation on comfort fans

Based on these findings gathered over the years, Topten decided to communicate this message to key players to encourage the entry in to force of Minimum Energy Performance Standards (MEPS) for comfort fans in Europe. Indeed, a review process of the EU regulations showed energy savings potential was estimated at 1 TWh in 2020 in the 2008 preparatory study. This value is however considered to be conservative and did not take into account the large increase in sales. Indeed, as shown by recent UN Comtrade data, the imports of fans in the EU-28 actually have doubled, reporting the import of 52 million units in 2020.



Topten participated in various Consultation forums for air conditioners and comfort over several years and published papers at international conferences on this issue. Topten supported the regulation process by providing proof through the Topten product list of comfort fans that the proposed class threshold on the foreseen energy label would be already significantly exceeded by BAT models. It was recommended to re-scale the thresholds so that class A is set to be empty upon entry into force and that the lower classes are not rendered obsolete by Ecodesign MEPS.

In addition, Topten carried out an analysis of the existing energy class threshold and MEPS in China and India as compared to the proposed regulation in the EU. Many models that are considered BAT products on the European market are of such low efficiency that they are banned from the Chinese and Indian MEPS by their national regulations. This is a clear indicator that enough efficient models exist on the global market to ensure a suitably extensive market supply once MEPS for comfort fans come into force in the European Union.

The full analysis was sent to key policy stakeholders via the Topten Focus newsletter following the Consultation Forum and published on Topten.eu (August 2022).

### **Small scale initiatives that lead to big results**

Thanks to the initial rebate programme of EKZ, Topten was able to motivate manufacturers to provide product data that was otherwise not available. Without the existence of the rebate programme, the manufacturers would not have had an incentive to start a dialogue with Topten (even though the information was required by the European Regulation). HACKS allowed to continue updating the product list and monitor the state of the European market and its evolution. With ECOS, Topten participated to the Consultation Forum for air conditioners and comfort fans. ECOS is instrumental in spreading the information through its already well-established channels. Their reach is much broader than Topten's which focuses on technical aspects. Without Topten's research on the topic, this issue would have remained unknown to Member States and little attention would have been brought to the need to further regulate these products. Topten's contribution not only led to the drafting of an addendum report and reopened the discussion on whether these products should have further Ecodesign requirements, but it also provided updated benchmarks for the definition of the energy class thresholds and MEPS.

### **Lessons Learnt**

Contrary to our usual perception and ideal, Europe is not always the leading force in energy efficiency on global markets, even when compared to so-called emerging markets, as proven by this case study.

The case of the comfort fans in Europe clearly shows the relevance market monitoring has also for products without a label but with mandatory information requirements. Based on the current situation, as many products as possible should be covered by energy labels as opposed to mere information requirements due to the much greater impact (and compliance) they have on the market.

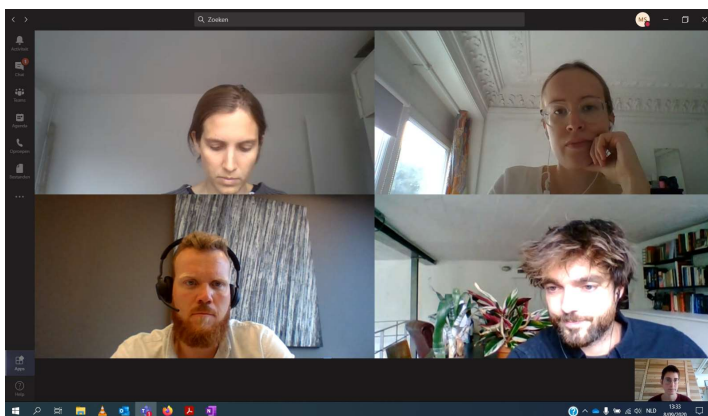
Topten is and remains a valuable source of benchmarks and market status in order to uncover untapped energy potentials on the European market.

For more information contact Steffen Hepp: [steffen.hepp@topten.ch](mailto:steffen.hepp@topten.ch)



## Belgium: Networking stakeholders around HACKS

In the beginning of the HACKS project, GoodPlanet Belgium focussed on building a network with the required expertise to run the project. Given the complex structure of our country (Flanders region/Walloon region/Brussels), both expertise and decision making on energy tends to be fragmented.



First, we spoke to the Flemish Energy and Climate Agency (VEKA). They engaged to take up an advisory role over the course of the project. Additionally, they helped us with pointing out other possible partners. In the past year, they were available to discuss about the HACKS texts, product lists, on the calculator, etc.

Next, we contacted relevant sector organisations in Flanders. The following organisations agreed to take up a role in advising us and communication to their members:

- Sustainable Energy Organisation (ODE, the umbrella organisation for the sustainable energy sector in Flanders. Its members include study centres, universities, colleges and companies in consultation platforms and working groups to exchange knowledge and experience and to promote and stimulate the sector)
- Techlink (the professional federation that connects, strengthens and represents all techniques and installation companies in Belgium (such as electro & HVAC)
- Association for Thermal Techniques in Belgium (ATTB)
- Bouwunie (represents the rights and interests of construction companies in Flanders)

Also, Fluvius, the system operator of electricity and natural gas in all municipalities in Flanders, was engaged.

We have regular contact with all partners, in order to gather information, support decisions and disseminate communication to relevant stakeholders.

Recently, we managed to get in contact with some of the corresponding organisations in the Walloon region through contacts in politics.

The overall experience with the established partnerships is very positive and their expertise adds to the project's professionalism.

For more information:

Milena Sonneveld – GoodPlanet [m.sonneveld@goodplanet.be](mailto:m.sonneveld@goodplanet.be)

Katrijn Van Huffel – GoodPlanet [k.vanhuffel@goodplanet.be](mailto:k.vanhuffel@goodplanet.be)



## Lithuania: Advocacy for broader use of energy-efficient heating equipment



The Lithuanian National Consumer Federation (LNCF) contributed to the Recovery and Resilience Facility (RRF) plan, which is currently under preparation by the Lithuanian government. It will be submitted to the EU Commission in due time.

The Energy Ministry of Lithuania elaborates a RRF section “Green Transformation”, which covers mainly electricity production and transport sectors and sets policies and projections for the future to achieve EU ambitious goals in fighting climate change. The draft plan prescribes more extensive use of wind, solar in electricity production and biofuels in transport.

On February 9, the ministry organised a public consultation on the topic. LNCF was invited and participated in a broad discussion with more than 200 participants. From our point of view, the draft plan still needs improvements, of which most important are as follows:

- The scope of considerations about the plan is confined to large electricity production and supply systems only. More attention should be given to small PV installations in the sites of consumption. The draft plan lacks clarity on how PV batteries will be integrated in the energy systems of buildings, what technological developments and advances are expected in this area, how they will be supported by government.
- A combined energy system within a building is a promising technology that is worth gaining more attention. Renewable energy sources (PV panels, heat pumps, solar thermal collectors) are installed on top of conventional energy supply sources – electricity grid and district heating. The whole system is operated by a smart control to bring minimum costs and maximum green energy to customers. Such arrangement also can serve as a decentralised energy accumulator provided PV electricity is accumulated in a heat form and used for hot water production in the buildings. The accumulator would reduce demand for electricity storage in the grid, of which construction is planned to base on expensive LI-ion batteries.
- It is a clear need to involve modernisation of public buildings and multifamily houses into further elaboration on green energy because these sectors are intertwined and cannot be dealt with separately. Moreover, it is necessary to pay more attention to numerous multifamily houses, of which 80% lack basic technical means for adjustment of heating and indoor climate and comfort to individual needs.
- Also, it should be recommended to enrich the document by including more cost-benefit evaluations carried out for principal classes of energy equipment. For

example, heat pump financial viability strongly depends on the district heat price. Similarly, financial outcome of PV panels is very much determined by electricity price. For this reason, financial assessment is a must, because it will clarify economic outcome in the specific regional environment and economic parameters. In Lithuanian conditions, small PV-batteries (10-15 kW) have a 25-year payback period, which shows their still inefficient performance. But these green devices will become profitable in the nearest future with PV-modules prices going down and electricity prices up due to unavoidable introduction of carbon or environmental taxes.

These considerations and proposals were laid down in a letter to Energy Ministry (in Lithuanian).

For more information: [www.ecotopten.lt](http://www.ecotopten.lt)

Rimantas Zabarauskas: [Rimantas.Zabarauskas@gmail.com](mailto:Rimantas.Zabarauskas@gmail.com)



## Norway: The Oil ban - How we banned fossil oil heating

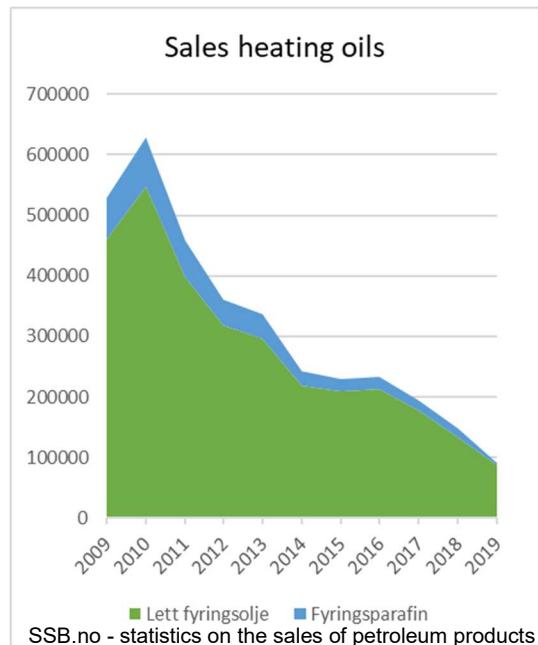
Naturvernforbundet has for several years been working both politically and practically for the reduction of climate emissions from buildings related to oil heating. In January 2020 it was formally prohibited to use fossil oils for heating in most buildings in Norway.

Central to the success has been the collaboration with installers, municipalities, industry associations, authorities, politicians and environmental organizations, and the uniformity in the demand for the legal wording of the ban.

The regulations were adopted in 2018 and implemented 1.1.2020<sup>1</sup>, and the Norwegian Ministry of Climate and Environment assumes that the ban will reduce Norwegian CO<sub>2</sub> emissions by 0,34 million tonnes CO<sub>2</sub> yearly.

As part of Topten HACKS we have:

- Collaborated with national and local authorities like municipalities to inform the inhabitants on platforms like:
  - The Topten HACKS webpages
  - [www.energismart.no](http://www.energismart.no) and [www.oljefri.no](http://www.oljefri.no)
  - Municipal websites
  - Open informational meetings
  - Local and national media coverage
- Collaborated with local energy expert installers of HAC-products to ensure a safe and efficient transition from fossil fuelled to renewables.
- Made legislative and political proposals in collaboration with relevant partners.



But our activities and results stem from a long-lasting engagement to increase the barriers to fossil fuel burning and reduce the barriers of the installation of both efficient and renewable HAC products and - solutions. One of our long-term goals is to contribute in making the building sector the first fossil free sector in Norway.

For further information contact: Silje Østerbø | Project developer | Energismart and Oljefri | [silje@naturvernforbundet.no](mailto:silje@naturvernforbundet.no) and Martin Leander Brandtzæg | Department manager | Naturvernforbundet [mb@naturvernforbundet.no](mailto:mb@naturvernforbundet.no)

<sup>1</sup> § 4. It is prohibited to use mineral oil for heating buildings unless the Norwegian Water Resources and Energy Directorate has made a decision pursuant to § 6. This also applies to district heating systems with less than 1 MW installed thermal power if the system supplies heat for heating buildings. <https://lovdata.no/dokument/SF/forskrift/2018-06-28-1060>