

Click your way
to energy savings



HACKS
Heating And Cooling Knowhow and Solutions

2019-2023
REPORT

Find out the most efficient
heating and cooling products in
Europe with a simple click on
the Topten websites

MARCH 2023

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HACKS project: Heating And Cooling Knowhow and Solutions

Find out best heating and cooling products in Europe

Home appliances

- Comfort fans
 - Ceiling
 - Floor
 - Stan
 - Table
 - Tower
- Humidifiers
- Taps and showers
 - Flow regulators
 - Mixer
 - Shower heads

Home equipment

- Heat pumps
 - Air-water
 - Earth-water
 - Water-water
- Air conditioners
 - Split
 - Multi-split
- Electric water heaters
- Circulation pumps
- Local space heaters
 - Logwood
 - Pellets
- Solid fuel boilers
 - Logwood
 - Pellets
- Plug&play solar panels

Available in some countries

- Mobile AC (CZ)
- Dehumidifier (CH)
- Intelligent Thermostat (CH)
- Pellets (CH, LU)
- Windows (CH, PL, SE)
- Doors (PL)
- PV (AT, LT)
- Solar thermal (LU, LT)
- Insulation (AT, LU)
- District heating (SE)

www.topten.eu/hacks

September 2019 - February 2023

17 partners presenting complementary backgrounds: energy specialists, energy agencies, environmental NGOs and consumer organisations with communication competencies:

ADEME – French Agency for Ecological Transition, France (coordinator)

AEA - Austrian Energy Agency, Austria

GoodPlanet, Belgium

SEVEn -The Energy Efficiency Center, Czech Republic

Guide Topten, France

Co2online, Germany

Eliante, Italy

Politecnico di Milano – eerg, Italy

LNCF, consumer federation, Lithuania

OekoZenter Pafendall, Luxembourg

Norges Naturvernforbund, Norway

FEWE Polish Foundation for Energy Efficiency, Poland

Quercus, Portugal

ECODES, Spain

SSNC, Swedish Society for Nature Conservation, Sweden

Bush Energie, Switzerland

The Energy Saving Trust, United-Kingdom

Cost / Financial support from H2020: 2.15 M€ for 17 partners and 3.5 years.

Purpose

Topten is a market transformation tool used to bring more energy efficiency on the market of products and equipment. Topten:

- Provides selections of the most efficient products available on the market. The selections are displayed on user-friendly websites managed at national level, close to consumers' markets
- Provides advice on how to improve heating and cooling comfort and air quality at low-and no-cost

- Stimulates consumers and large buyers, via communication and support to professional procurers
- Stimulates manufacturers, installers and retailers, via regular contacts, information and promotion of their most efficient products
- Contributes to market transformation and policy design thanks to its analyses
- More than 2.6 Mio page views on the HACKS content over the three years and a half of the project
- Extensive media coverage
- An open Topten platform: new organisations can join at any time
- Differentiated impact on numerous target groups: tailored information delivered to consumers, installers, retailers, policy makers, procurement officers, NGOs and institutions, support to utilities, support and recognition to product manufacturers investing in energy efficiency

Key results

- 15 national websites presenting continuously updated selections of best equipment, recommendations for users and selection criteria, and 1 European platform
- Information available in 14 languages
- 10 heating and cooling product categories scanned in the 15 countries¹, filterable into more than 21 segments reflecting consumers' preferences. Nearly 900 super-efficient products displayed in February 2023 on topten.eu as benchmarks, with all their features
- As a result, 245 partnerships developed across Europe
- "Best of Europe": the only review of efficient appliances supply on the European market (BAT, policy analyses)
- Integration into a world-wide network together with Topten Chile, Topten Argentina, Topten Brazil and Topten Peru: www.topten.info

¹ - Many more product categories are available on the various national Topten website covering domestic appliances, mobility, lighting, office equipment, professional equipment.

Target groups and main inputs brought by the project

Market Actor	Topten Value Proposition
Consumers	<ul style="list-style-type: none"> • User-friendly interface to identify most efficient products • Provide detailed advice on low- and no-cost measures to improve heating and cooling comfort, indoor air quality, and to reduce energy bills • Educate consumers on total cost (purchase price plus energy bill minus incentives) and good use of products • Communicate benefits of efficient products for climate protection
Installers & Retailers	<ul style="list-style-type: none"> • Bring potential clients from the Topten website directly to certified installers and product pages at on-line shops • Provide contextual information and tools to convince clients to target BAT products • Increase of high mark-up products' sales • Position retailer as "trend setter", and build trust in the message against climate change
Manufacturers	<ul style="list-style-type: none"> • Support market introduction of new products • Provide independent, objective marketing of products • Channel incentives and increase demand for innovative products
Large Buyers and Procurement Officers	<ul style="list-style-type: none"> • Support formulation of procurement specifications and award criteria • Ensure that very efficient products are available on the market (no pilot product, lower risk of unsuccessful calls for tenders) from brands that are able to provide all associated services • Reduce operating costs to enhance value-for-money
Policy makers	<ul style="list-style-type: none"> • Provide real-time market data on the "best" products, with energy efficiency as a key criterion • Pave the way for new and more stringent standard, label and Ecodesign specifications
Utilities	<ul style="list-style-type: none"> • Continuously identify the highest-efficiency products • Serve as a basis for rebate programmes • Serve as a source of information for their clients
Media	<ul style="list-style-type: none"> • Serve as credible, independent source of information • Issue regular updates • Provide one-stop shop for broad range of product categories
NGOs & Institutions	<ul style="list-style-type: none"> • Concrete actions to illustrate their campaigns on sustainable consumption and climate change, purchasing power • Material and information for their campaigns

1

Topten, a leverage to market transformation

1.A Topten, a market transformation tool

Since 1881 and the first Edison light-bulb, it has only been a little over a century that mankind has developed the habit of using electricity. It is very flexible for the user (just press a button), but it is energy intensive to produce (3 parts of primary energy for 1 part of electricity), expensive, and very difficult to store. It should therefore be used wisely.

However, and despite undeniable efficiency improvement at the level of single appliance, European households' electricity consumption increased by 6.2% between 2011 and 2021². There are several reasons for this growth: appliances and devices have multiplied, but are not always eco-designed, have grown in size, user behaviour is not always savings-oriented, etc. Today, the climate crisis has pushed the European Commission to adapt its strategies: With the goal of decarbonation, the expected drastic shift from gas to electricity for heating and the rise of electric vehicles, this consumption is expected to increase by up to 100% by 2050 compared to 2015 level.

The Topten network estimates that the specific electricity consumption could be reduced by 30 to 50%, provided appliances as well as purchasing and user behaviours continue to improve.

A synergy provider

While **heating and cooling** equipment present a fundamental energy saving and CO2 reduction stake at European level, the market for these appliances is a complex one, generating three main difficulties:

- **Consumers** need to grasp the benefits (financial, environmental and wellbeing) that are related to the replacement of their HAC equipment. In addition, thousands of air conditioners, local space heaters and other energy-consuming equipment are available on the market. Consumers, whether individuals or professional buyers, cannot always compare and chose judiciously: without clear information, nor time or proper advice, it is too difficult to analyse the market...
- The development of energy efficient and innovative products has an initial cost. **Manufacturers** need to act in a framed market and trust there is a demand for these efficient products in order to start their production, train **installers** and to develop a real marketing strategy with them and **retailers**.
- Under the pressure of various goals that can be contradictory (climate crisis, budget restrictions, European industry development, etc.), it is not always easy for **policy makers** to carry out ambitious and successful policies, despite the shared concern about the climate crisis and energy issues.

Best products in your country



Austria	Norway
Belgium	Poland
Czech Rep.	Portugal
France	UK
Germany	Spain
Italy	Sweden
Lithuania	Switzerland
Luxemburg	
Argentina	Brazil
Chile	Peru

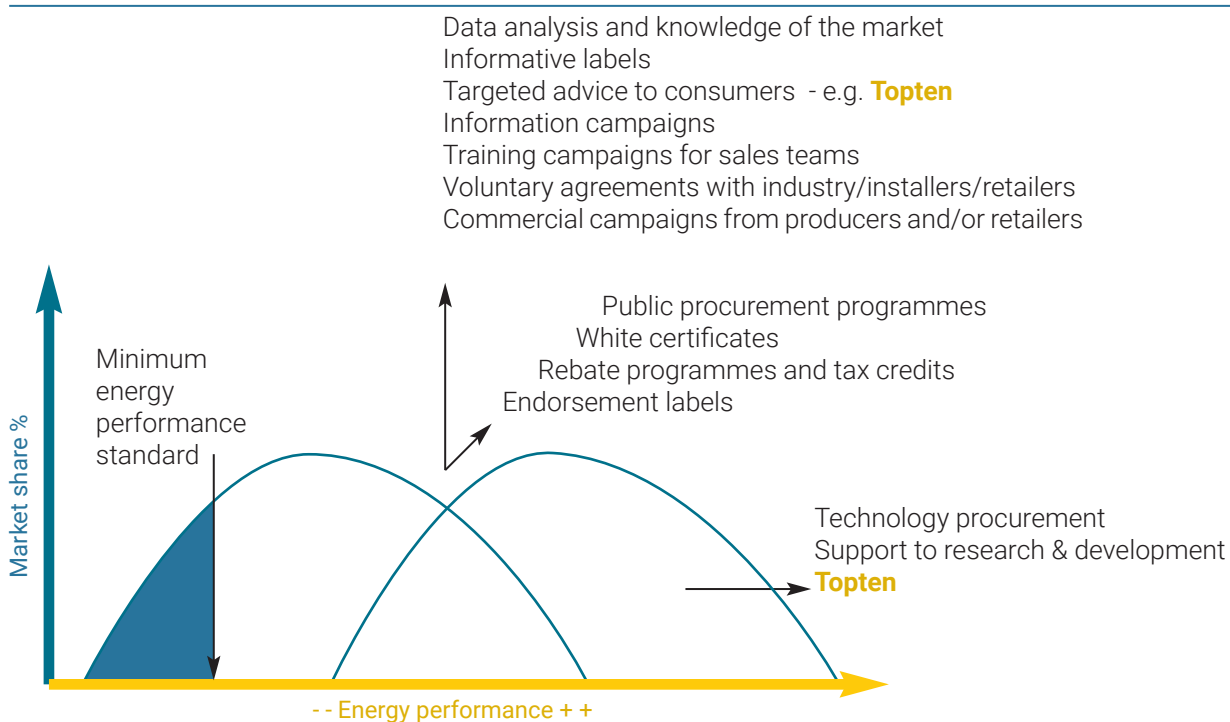
² - Source: Eurostat: Electricity production, consumption and market overview, February 2023

This observation has led to the development of several instruments, all part of the market transformation tool box aiming at shifting the markets towards more energy efficiency:

With regards to this situation, *Topten* encompasses and can serve most of these instruments as it:

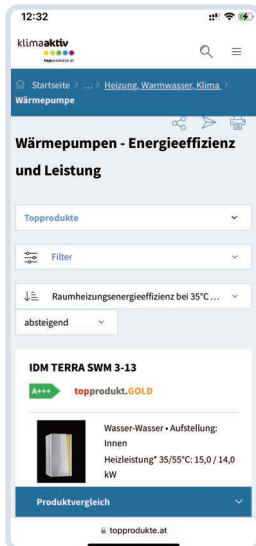
- Data analysis and knowledge of the market
- Informative labels and advice to consumers
- Endorsement labels
- Minimum energy performance standards
- Rebate programmes and tax credits
- Information campaigns
- Training campaigns for installers and sales teams
- Voluntary agreements with industry, and/or retailers
- Commercial campaigns from producers and/or retailers
- White certificates
- Public procurement programmes
- Technology and cooperative procurement
- Support to research and development
- *Topten*: promotion of best models

- Provides selections of most efficient products available on the market
- Stimulates consumers and large buyers, via communication and support to professional procurers
- Stimulates manufacturers and retailers, via regular contacts, information and promotion of their most efficient products
- Contributes to market transformation and policy design thanks to its analyses



1

Topten responsive website



Qualified, updated and widely accessed online

A major barrier to broad dissemination of more energy efficient and environment-friendly equipment, products and services is that consumers do not have quick and easy access in their language to ready-made qualified, independent and up-to-date product information. The purpose of Topten is to provide consumers and energy professionals with credible, up-to-date information on the most efficient products available on their local markets. The selection is much narrower than typical labelling systems, making it easier for consumers to choose from among the thousands of products available.

With Topten, consumers are directly informed about:

- The importance of choosing a good product (at the time of purchase) for their electricity bill and overall expenditure, and for the environment in general
- The importance of using electricity-consuming devices correctly, for the same reasons
- For heating and cooling equipment that must be adapted and correctly sized for each home, the importance of *first* insulating the building and of looking for professional installers and advisers.

A reference for marketing, R&D, and policy decision makers

Topten goes further than providing direct information to consumers and use synergies between the various Market Transformation tools: once the selections of Topten products are available, this very valuable information can also be used for other purposes. Topten provides key information to decision makers on their markets and the *status quo* of best available technologies; Topten can serve as a basis for rebate programmes or tax credits; Topten can fit into white certificate schemes; Topten teams can assist in many ways in cooperative and technology procurement operations; Topten feeds-in information campaigns and the media – contributing to awareness raising.

The screenshot shows the desktop version of the Topten.eu website. The top navigation bar includes 'News', 'About Us', 'Partner', 'Contact', and a search bar. Below the navigation, there are menu items for 'Household', 'Lighting', 'Office & TVs', 'Cars', 'Building Components', and 'Professional Appliances'. The main content area is titled 'HACKS - Heating and Cooling Knowhow and Solutions'. It features a sub-heading 'Heating and Cooling Knowhow and Solutions (HACKS)' and a brief description of the project's goal. A map of Europe is shown on the left, and a table of national best products lists is on the right.

National best products lists			
	Austria		Norway
	Belgium		Poland
	Czech Republic		Portugal
	France		Spain
	Germany		Sweden
	Italy		Switzerland
	Lithuania		UK
	Luxemburg		

Topten reinforces existing informative and endorsement labels as it verifies the information through a continuous dialogue with manufacturers at European level and in each of the countries where a Topten website is available; Topten rewards retailers, installers and producers who are seriously investing in energy efficiency.

The Topten tool is especially adapted in countries where information on products is available (producers' declarations, informative labels on energy efficiency, etc.) and where a significant number of people has access to the internet.

Given European standards of living and equipment rates, Topten represents a uniquely valuable tool, offering to European consumers and procurement officers a resource to replace the current generation of HAC equipment and consumer appliances sold each year with super efficient models. In choosing to purchase super efficient models, European consumers can reduce their individual energy consumption while simultaneously playing a major role to pull the global market toward urgently needed super-efficient products.

The screenshot shows the Topten website interface for 'Energy Efficient Local Space Heaters'. The page features a navigation bar with categories like Household, Lighting, Office & TVs, Cars, Building Components, and Professional Appliances. Below the navigation, there are tabs for 'Energy Efficient Local Space Heaters', 'Selection Criteria Local Space Heaters', and 'Policy Recommendations Local Space Heaters'. The main content area includes filters for Brand, Heating power max. (kW), and Fuel, along with a 'Sort By' dropdown set to 'Efficiency index (%)'. A table displays the results, showing five models with their respective energy efficiency ratings and heating power.

	Brand & Model	Energy	Type
	Windhager FireWIN Exklusiv 90 Further models: FireWIN Exklusiv-S 90	Efficiency index (%): 134,0 Heating power max. (kW): 9	Pellets
	Palazzetti Anita Idro 10	Efficiency index (%): 134,0 Heating power max. (kW): 9	Pellets
	Palazzetti Camilla Idro 10	Efficiency index (%): 134,0 Heating power max. (kW): 9	Pellets
	Palazzetti Cristina Idro 10	Efficiency index (%): 134,0 Heating power max. (kW): 9	Pellets
	Palazzetti Martina Idro Lux 10	Efficiency index (%): 134,0 Heating power max. (kW): 9	Pellets

1.B Showcasing

An internet tool: from the portal www.topten.eu 15 national close-to consumer Topten websites can be accessed...

...Targeting the average consumer... Aware green consumers can find information by themselves, as they are ready to spend time looking for the greenest possible products. On the contrary, a large number of consumers may be resistant to, frightened or even upset by "green" information accused of promoting expensive devices. Even though the whole purpose of Topten is to promote the most energy efficient products, this is not always the message put forward. The environmental rationale is not the first information even though it is extensively explained on specific pages of the web site. As HAC products are complex and their performance depends on where and how they are installed, it is even more important to explain the context in simple words and encourage consumers to question their needs, their building insulation, where to find technical help, financial support, etc.

... Stressing most important topics to consider before buying a product...

Topten promotes energy sufficiency by helping consumers question their needs (which size, which functionalities, existing alternatives, etc.) and, for building equipment, to structure their approach: possibly starting by

1

insulating their homes, contacting professionals that can provide tailored advice on a type of heating, on the installation's dimensions, etc...

...Centred on products... The main information (home page and second and third levels) focuses on products, almost as if the web site was an installer or a retailer's site that a consumer would visit before buying in order to compare products and prices...

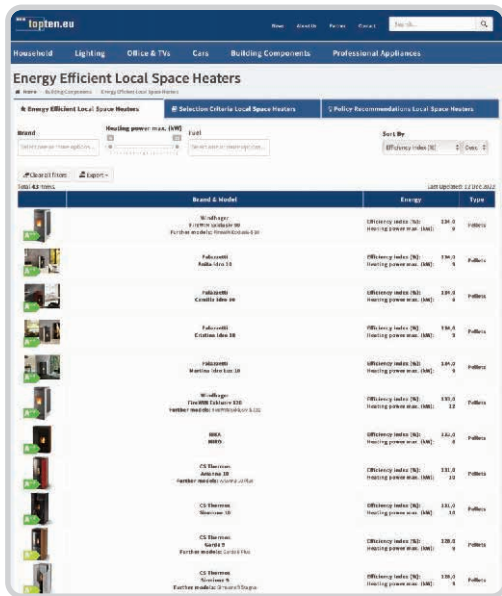
...Presenting appliances... All the product characteristics that may interest a consumer are presented: brand, commercial reference, dimensions, different services (for example for heat pumps the various solutions and the impact on the installation), picture, links to manufacturers' site for more information...

...And only the "best appliances"... From the energy efficiency point of view. These "best" appliances are presented in a table with the most energy efficient on top. They are presented according to energy efficiency but visitors can choose the ranking criteria. Filters allow visitors to target the more specific sub category they are interested in (e.g. within the solid fuel boilers, logwood or pellet models)...

...Emphasising electricity costs over the lifetime... For most products, Topten provides the purchase price and the electricity cost over the lifetime of the appliance so that total cost can easily be calculated. Advice is also given on how to use and maintain the various products...

... Highlighting the overall efficiency gain in comparison with an inefficient model that could be on the market...

... And facilitating consumer action to buy a super-efficient products, by directly linking, with one more click, to on-line retail/installers' shops, on the specific page of the selected Topten product. For consumers that cannot invest in large building equipment, Topten provides a lot of advice (on the web, in leaflets and videos) on how to reduce energy bills and improve comfort and indoor air quality thanks to low- and no-cost measures.



Topten's websites ethics and basic rules

- **Transparency:** the whole Topten approach is published on the website: manufacturers and consumers know, for each product category, the criteria for selecting "best appliances". The methodology is available on-line, with a simple additional click.

- **Flexibility:** the Topten products lists are updated frequently, at least twice a year, and much more often when links are proposed toward on-line shops. The criteria are easy to revise and are strengthened according to the markets' progress.

- **Simplicity:** priority is given to existing classifications and criteria. Where an energy label exists, it is used to determine the best appliances, indicating which is the best energy class at the moment of purchase. Where it does not exist, other labels are used (such as the Blue Angel label, or the Unified Water Label). When there is a lack of harmonised norms to measure energy efficiency, Topten may carry out tests and develop its own methodology.

- **Neutrality:** Topten is fully independent from appliance manufacturers, importers or retailers. Thus fully independent from brands and commercial trends, Topten enables consumers to choose environment-friendly products, an incentive for manufacturers and retailers to favour them as well.

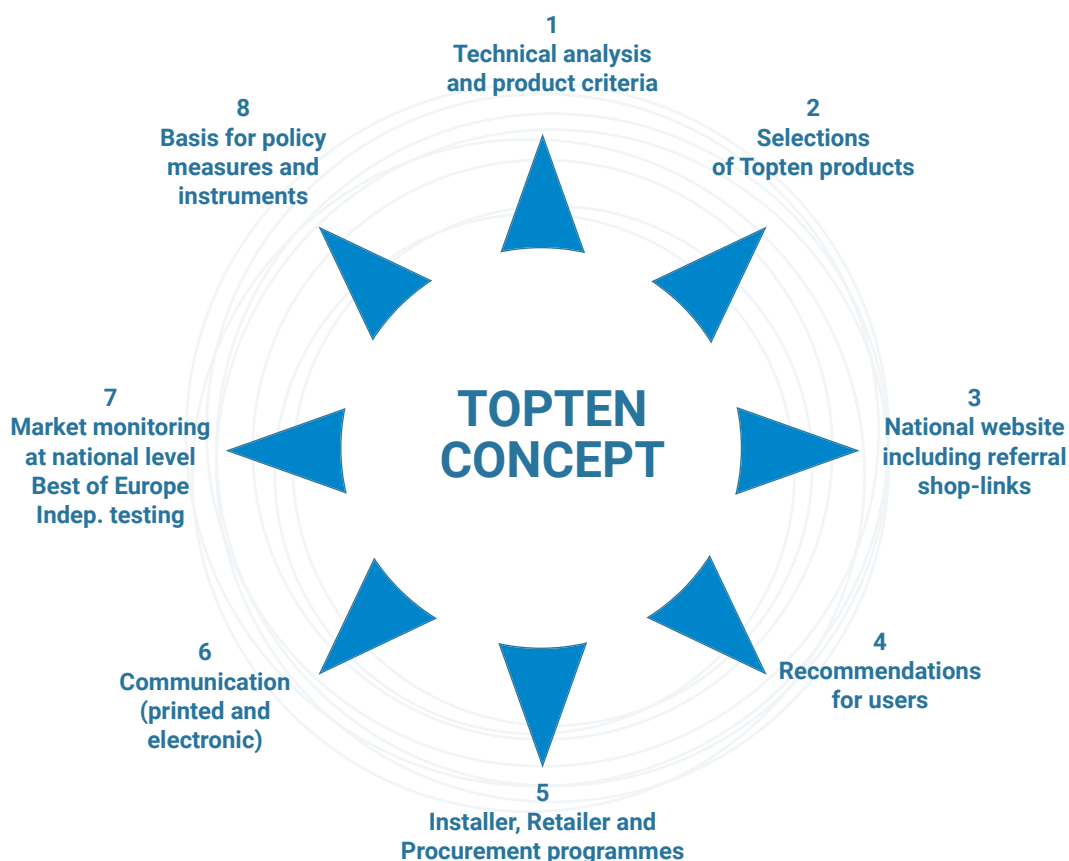
1.C Achievements of field activities

The next figure illustrates that Topten is a concept that goes far beyond presenting information on a website. The various activities reinforce each other with the ultimate goal to encourage and accelerate the design, marketing and buying of highly efficient appliances and equipment within a reasonable timeframe. For each type of product, Topten teams undertake regular market studies at national level in order to:

- Verify their information with manufacturers (on technical issues, availability on the market, price, photos, etc.) and establish referral links to on-line retailers.
- Generate partnerships and publications in printed media and mentions of Topten in audio-visual communication means.

A lot of effort is made to find media support: if Topten is known and its credibility recognised, more consumers will visit the site and choose to buy efficient appliances and more manufacturers will be willing to collaborate and hopefully develop energy efficient products. However, Topten mainly grows thanks to the development of partnerships, which multiply opportunities to make Topten known.

The fieldwork is therefore substantial for the Topten teams who gather specialists in project management, energy efficiency, technical issues for specific products, communication, procurement, and IT specialists to ensure automatic exchange of information with retailers and other stakeholders.



What is Topten?

Above the water 10%

Market Transparency

- Topten websites
- Consumer advice
- Referral shop-links

Below the water 90%

Market Transformation

- Market research
- Energy labels
- Testing standards
- Industry contacts
- Retail / installer programmes
- Procurement
- Rebates programmes



The Topten teams:

Manage and coordinate

- Establish a national Topten organisation (managing the project, the various content editors, the information towards consumers, the relations with testing laboratories, partners, etc.).
- Work in cooperation with manufacturers in order to obtain as accurate product data as possible.
- Work in cooperation with retailers in order to help provide consumers with a full service: which are the best appliances, where to find them, 1 more click to buy them. For building equipment, the teams can assist installers with contextual elements and specific tools.
- Establish cooperation with the other national Topten projects to benefit from and create international synergies, through specific programmes such as the HACKS project sponsored by the European Commission, and through the association Topten International Group - TIG (see Section 2).

Assess & Report

- Undertake market research on energy using products to determine which product categories should be targeted given the national market characteristics, for example district heating in Sweden). The most comprehensive Topten system has currently 7 major product fields online for the general public: heating and cooling technologies, domestic appliances, electronics, lighting, mobility (incl. cars, bicycles), leisure, sustainable energy supply; and 5 fields for professional users: professional cold appliances, gastronomy, professional laundry rooms, office & lighting, mobility.
- Define benchmark criteria for top energy efficiency for each product category in cooperation with national standard and labelling organisations. The selection is different for each product category and is based on widely-accepted industry testing procedures, if available, or on a testing procedure defined by Topten. In the case of products bearing labels based on well-defined procedures (e.g., EU energy Label, TCO, the Unified Water Label), Topten relies on the label information and on independent third-party testing.
- Create, operate and update data for Topten product lists. The primary technical task in establishing a national Topten system is to create an effective database for a national market. All information is adapted to local needs and market conditions. The data includes information for the most energy efficient and environmentally friendly products in each category. It includes product energy data, photo, sales price and all functional specifications of interest for consumers. It can also include a "second price" which shows the energy cost over the lifetime of the product, and sometimes a comparison with an inefficient model, to underline its relative importance for the buying decision.
- Setup an automatic system to exchange product information with retailers and propose an additional service to the Topten visitors: with one more click,

they can access through referral links the Topten product they are interested in directly on a retail-shop on-line. This feature is less adapted to large heating and cooling equipment, but when possible, consumers are directed to governmental advisers or installers' networks.

- Exchange data with HACKS partners to stimulate market availability of best products.
- Provide for each product category the selection methodology in details. It is crucial that the Topten selection of product is transparent and neutral.
- Provide for each product category recommendations for consumers regarding optimal choice and optimal use of the product.
- Monitor and evaluate segment and intensity of use of website, to guide future Topten development.

Communicate

- Focus on the website which must be user-friendly, in particular for first-time visitors who are more likely to be "average" consumers looking for products than "green" consumers looking for environmental information. The website also contains more technical information for professional users and procurement officers in a dedicated section, and media partners.
- Publicise Topten via social networks, print material in newspapers, journals, and dedicated leaflets to attract first users. Consumer organisations, environmental organisations and the media are key partners to raise awareness among potential users of Topten.
- Initiate dialogue with responsible government officials and private sector procurement officers on use of Topten for procurement.
- Initiate dialogue with producers and multipliers (for their campaigns).

In conclusion, Topten "backstage" activities are paramount to the websites' success, as they ensure consistency and accuracy of information.

Topten: an established market shifter

After several years of operation, from a policy point of view, the main advantages of such a tool are that:

- **Topten directly reaches consumers:** the number of visitors has been kept high (considering its rather specialised focus).
- **Topten acts as a resource centre** for many articles in newspapers, consumer and environmental magazines.
- **Topten is flexible** compared to a label, there is no additional information stuck on the product itself; the criteria are easy to revise and strengthen according to the markets progress.
- **Topten can serve as a basis** for governmental programmes, such as rebate schemes.
- **Topten provides specifications** for public/ private procurement programmes to increase market demand for the most energy efficient products.
- **Topten stimulates competition** as detailed data is published, manufacturers can compete to be "at the

top" of the Topten list (no threshold effect). As the website is very often updated, the competition on the energy efficiency criteria is continuous. It creates a market pull effect, beyond existing minimum performance standards or recommended labels.

- **Topten is also a platform for dialogue** with manufacturers and retailers: they cooperate, answer questions about appliances, availability, provide photos, discuss possible problematic test results and ask about new regulations and norms.
- **Topten increases market transparency** and lowers barriers for consumers to purchase the most energy efficient equipment, products and services.
- **Topten supports ambitious government or European standards** by providing real-time data on the efficiency level of the best products available on each national market, thus giving policy-makers confidence to propose ambitious levels for new/updated standards.

2 The Topten projects work at both local and international levels

The strength of the European framework, supported by national market expertise

Each step of the seventeen-year Topten market monitoring has confirmed that the European market for appliances remains both internationally and nationally driven hence the necessity for Topten to cover both international and national issues: On the one hand, **many elements of the market chain drive it towards homogeneity**: a few large manufacturing companies are present in all countries and are able to supply all countries; products are generally the same from a technical point of view; the European Energy Label and Ecodesign Requirements allow for homogenous information across the whole of Europe; etc.

But on the other hand, **there are still important differences between countries**:

- For heating and cooling equipment, national infrastructures drive energy choices and national governments may have created specific endorsement label based in specific criteria to support an industry or target an indicator. For example, the Italian Topten selection criteria for wood local space heaters can be very stringent.

- At a more general level, for most products, design variety and corresponding differences in model references requires study of the market at national level in order to reflect national preferences and availability in shops and at installers'; The market structure is also less international than it may seem: on the manufacturers' side, especially in the white goods sector (as opposed to the brown goods where the situation is easier to track), national branches are rather independent in their management: they choose the products they want to sell (from a production line proposed by the headquarters), they decide the marketing positioning of the various brands they manage, the price is set at national level, etc.

These differences between countries – which can be explained by cultural variations, average wages, the sensitivity to environmental issues, policies implemented (or not) by public authorities, etc. – are taken into account by Topten, which mixes national market information targeting consumers and global action towards manufacturers, by working in parallel on two axis:

- At national level, a field market analysis, based on national market preference and product availability; each country uses the same Topten concept but is free to adapt the web site design and the working methodology according to its own national context.
- At international level, the development of a "Topten system" in order to gain critical mass, share knowledge, compare data, understand the products' energy efficiency *status quo* and contribute to European policies.



2.A A seventeen year well-established network

The Topten concept was first developed in Switzerland in the year 2000 by S.A.F.E., the Swiss agency for efficient energy use. Within limited financial resources, S.A.F.E. chose to build a flexible tool supporting consumers but that would not need the design and implementation of a complex infrastructure across the country. Topten benefited from a close cooperation with WWF Switzerland, which used its notoriety to make the concept and the website known to the general public. Since then, Topten Switzerland has grown steadily up to a point where www.topten.ch provides today an unquestionable service recognised by the public authorities which largely supported it: 12 product fields (office equipment, home equipment, mobility, etc.), 68 product categories with filtering possibilities, presenting close to 11'700 Topten products, 49 partners, 640'000 visitors per year.



The European HACKS Network during an on-line team meeting in 2022

Early 2004, and after the sound local anchorage of Topten Switzerland, the Swiss Topten team started to contact their European colleagues, as it appeared that a much larger impact could be gained thanks to a European critical mass:

- European consumers face the same situation when they want to buy energy-consuming equipment.
- Energy and electricity demand is high all over Europe and has a high cost as well.
- Manufacturers develop at least European-wide strategies: any tool aiming at market transformation should integrate a European dimension in order to be able to discuss with the manufacturers' head offices with one united voice asking for concerted improvements.
- Participating NGOs, such as WWF also offer both national and European coverage.

The first countries to develop a Topten concept in cooperation with the Swiss team were:

- France at the end of 2004: www.guidetopten.fr was launched as a partnership between an environmental organisation - WWF France and a consumer organisation – CLCV - with support from ADEME (French Agency for Ecological transition); it is today managed by an independent company.
- Austria in 2005: the Austrian Energy Agency launched www.topprodukte.at as part of a large governmental "klima:aktiv" programme, still on-going.
- And Germany where in 2005, the Öko-Institut launched www.ecotopten.de, with support from the Federal Ministry of Food agriculture and Consumer Protection as well as from the Stiftung Zukunftserbe (a German foundation for sustainable projects).

2

2.B 17 partners working together within the HACKS project

The European Commission has supported for many years accompanying projects, educational tools, and ICT tools for consumers and other stakeholders on energy savings, thanks to its SAVE-, then Intelligent Energy Europe- and today Horizon 2020 research programmes. The overall goal is to secure a sustainable energy future for all European citizens, with, for each programme, specific targets and priorities.

The Topten concept fits very well within the European energy and climate objectives and strategy putting consumers at the heart of the energy system. Therefore, in 2006, the "Euro-Topten" project was launched to start building a Topten network and benefit from European synergies, followed by the "Euro-Topten Plus" project in 2009 which had a focus on professional buyers, the "Euro-Topten Max" project in 2012 enlarging to retailers, the Topten Act project in 2015 consolidating these activities, the ProCold project applying the Topten approach to professional and commercial cold products also in 2015, and the HACKS project in 2019 opening a new field of activities for Topten on Heating and Cooling equipment.

The logo for 'euro top ten' features the word 'euro' in a small, lowercase, sans-serif font, followed by 'top ten' in a larger, bold, sans-serif font. The 'top' is in a light blue color, and 'ten' is in a dark blue color.The logo for 'euro top ten+' is similar to the previous one, but with a small white plus sign inside a blue circle to the right of the word 'ten'.The logo for 'euro Top en max' features the word 'euro' in a small, lowercase, sans-serif font, followed by 'Top en max' in a larger, bold, sans-serif font. 'Top' is in blue, 'en' is in yellow, and 'max' is in blue. There are small blue squares under the 'x'.The logo for 'top ten act' features a blue circle with a white checkmark inside, followed by the words 'top ten act' in a bold, sans-serif font. 'top' and 'ten' are in blue, and 'act' is in white on a dark blue background.The logo for 'PRO Cold' features a blue square with a white document icon and a blue bar with white squares, followed by the words 'PRO Cold' in a bold, sans-serif font. 'PRO' is in white on a blue background, and 'Cold' is in white on a dark blue background.

HEATING AND COOLING
KNOWHOW AND SOLUTIONS

The logo for 'HACKS' features a blue square with a white gear icon and a blue bar with white squares, followed by the word 'HACKS' in a bold, sans-serif font. The 'H' is in white on a blue background, and 'ACKS' is in white on a dark blue background.

All the Topten projects aimed at encouraging consumers to ask for, choose and properly use energy efficient products, while getting retailers, installers and large buyers involved, and at creating multinational pressure to orient manufacturers toward more energy efficiency across their range of products. They use synergies with existing instruments such as the European energy label and Ecodesign requirements, utility programmes, and information campaigns.

The projects' short-term goal is to create the best conditions to shift the market towards higher energy efficiency, i.e.: sharing experience, and reaching the necessary critical mass through the efficient network of Topten websites.

Today, the HACKS project gathers 17 core formal partners, as an open platform, to share information with a wider circle of countries and to welcome organisations interested in the project and leading complementary initiatives. 15 Topten / HACKS European websites plus a European HACKS platform (www.topten.eu/hacks) are up and running.

HACKS Steps and components

HACKS project's deliverables to the European Commission

(All public deliverables are available from www.topten.eu/hacks)

- D1 - Protection Of Personal Data plan
- D3 - HAC products Base-line report
 - 8 Criteria papers and their updates
 - 3 reports European market and product lists evolution
 - HACKS Catalogue of key information topics
- D4 - 15 internet websites dedicated to HAC products and solutions
 - On-line calculator to visualise and customize the multiple benefits of best HAC products and solutions
 - 2 Reports on consumer involvement campaign, its results across Europe and activities to increase consumer involvement
 - 2 reports on media outreach
- D5 - 2 Reports on stakeholders' involvement campaign, summary of activities carried out, successes and barriers
 - 2 policy reports gathering the produced recommendations, papers summarising the policy support activities on municipal, national and European levels.
- D6 - 2 project reports summarising the quantitative evaluation of the impacts: consumer involvement, CO2 emission reduction, energy savings, uptake of energy efficient products and services
 - HACKS value-added report including lessons learned from multipliers interviews
 - 2 reports with ad-hoc case studies illustrating HACKS success stories
 - Sustainability business report
- D7 - Project conference
 - Presentations at international

The HACKS H2020 project has gathered 17 partners committed to implement a work programme composed of 7 major components (public deliverables are available from www.topten.eu/hacks).

1 & 2 - Project management - Coordination: ADEME

Partners of projects gathering numerous teams must be able to rely on a solid yet lively management.

- HACKS gathered 17 teams with different and complementary backgrounds: energy specialists, energy agencies, environmental NGOs and consumer organisations with communication competencies.
- ADEME dealt with contractual issues, managed joint expenses in order to generate economies of scale, and also acted as a hot-line regarding administrative issues.
- Two websites were developed and maintained as collaborative working tools dedicated to partners.
- ADEME produced a plan for the protection of personal data (POPD) adapted to the HACKS activities.

3 - Heating and Cooling (HAC) technical and market analysis Coordination: Bush Energie, ADEME

The analysis of the European market and product information was the cornerstone of the HACKS project, setting the foundations for the national technical and non-technical work. Without a sound initial analysis, information displayed on websites and communication messages would have lacked quality and credibility. The 2 main activities of this component focused on product research and identification of best models on the one hand, and key messages for users on the other hand.









The HACKS partners first produced a **base-line report** detailing the market stocks, trends, structures, players and regulatory barriers for key heating and cooling technologies of each national market. Bush Energie produced accordingly **8 criteria papers** showing the *status quo* and trends in technology for product categories for which single-family house owners directly decide on: air conditioners, comfort fans, heat pumps, water heaters, space heaters and taps and shower heads. The criteria papers basically cover the scope, current and expected Topten selection criteria, and technical background, policies, standards and labels and basic recommendations for consumers.

Bush Energie then continuously scanned the European market and regulations

for the heating and cooling product groups covered by HACKS, searching for relevant product information from several sources: direct contacts with manufacturers or associations at European and national levels, manufacturers' websites and catalogues, and databases from partner organisations (e.g. EUROVENT for heat pumps). Selection criteria for best products were designed and updated based on energy efficiency, consumer comfort or climate protection such as noise or climate friendly refrigerants.







This **unique review of European benchmarks** is displayed on www.topten.eu and served as a basis for national work.

Figure 1 – Number of products per HACKS category on Topten.eu towards project start (April 2020) and at project end (February 2023).

Category	Models April 2020	Models February 2023	Index %
 Air Conditioners	98	90	92
 Circulation Pumps	196	148	76
 Comfort Fans	93	120	129
 Heat Pumps	248	275	111
 Local Space Heaters	8	43	538
 Solid Fuel Boilers	23	78	339
 Taps & Shower Heads	49	81	165
 Water Heaters (Heat Pump)	52	60	115
Total	767	895	117

When reading the Figure 1, it is important to understand that the total amount of listed models does not constantly increase. It increased, for example, when it was possible to add products from a new manufacturer, or when more efficient models entered the market over time. In the latter case, the number of products could suddenly decrease again, because too many good products had appeared and the selection criteria were tightened. In fact, out of the 8 categories, it was possible to tighten the criteria of 4 categories during the course of the project (see Fig. 2).

Figure 2 – Evolution of the HACKS / Topten selection criteria during the project. Thanks to the progress on the market, it was possible to tighten some of the BAT selection criteria

Category	Project Half / Timing	Background
 Air Conditioners	H1 (Apr20)	Higher efficiency classes for all three types of ACs and introducing a minimum requirement for the global warming potential of the refrigerants used.
 Circulation Pumps	H1 (Apr20)	From maximum efficiency index 0.20 to 0.18. Driver: more market data has become available.
 Heat Pumps	H1 (May21)	From A+ to A++ and including the mandatory declaration of the η value (energy efficiency). Driver: more efficient products available in the higher classes
 Water Heaters	H2 (Feb22)	From A to A+. Availability of the energy label for water heaters has become increasingly common in recent years and because the EU label is more familiar to consumers.
 Heat Pumps	After project end (Apr 23)	From A++ to A+++ because market as a whole has seen strong improvements over past two years, with heat pumps becoming the number 1 heating technology in the EU.
 Circulation Pumps	After project end (later in 2023)	From maximum efficiency index 0.18 to 0.17. Driver: overall market progression towards more efficient devices.

3 - Many more product categories are available on the various website covering domestic appliances, mobility, lighting, office equipment, professional equipment.

At the end of the project, 10 heating and cooling product categories were scanned in the 15 countries³, filterable into more than 21 segments reflecting consumers' preferences. Nearly 900 super-efficient products were displayed in February 2023 on topten.eu as benchmarks, with all their features.

A **Catalogue of key information topics** was developed to supply national partners with messages on key HAC topics that they adapted to their national situations. The catalogue:

- Introduces the concepts of comfort and air quality and recommendations to maintain good air quality.
- Provides solutions for reducing the use of heating and cooling equipment while improving comfort and air quality, presenting for heating, hot water production and cooling:
 - contextual information: climate change, money savings, multiple benefits of the proposed solutions, examples of arguments to convince citizens that, whenever it can be, heating, hot water and cooling, should be reduced.
 - solutions relating to the equipment itself: e.g. limiting consumption by insulating pipes, using thermostat and programmers, acting against limescale in water heaters, etc.
 - and solutions relating to users' behaviour: e.g. adopting good habits with windows (opening/closing/shading) and temperature settings (appropriate to the room, the time of the day), tackling water leaks, etc.
- Provides advice for choosing highly efficient HAC equipment for a variety of heating and cooling systems: e.g. pros and cons of available technologies, choosing transmitters, tips for a good sizing of the equipment.
- Provides advice for using HAC equipment in an efficient way: e.g. maintain a convenient ambient temperature, check the tightness of the refrigeration circuit, use eco-labelled wood pellets, logs or chips.

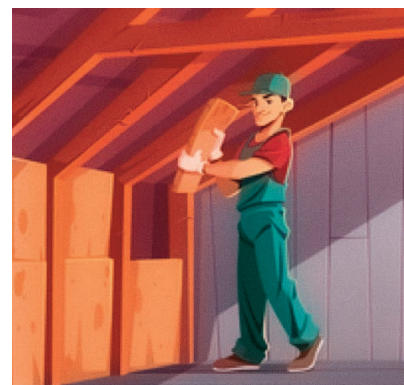
As a result, the 15 HACKS internet platforms presented extended advice sections not only on how to choose efficient products but also, generic principles on how to size products and how to use them in order to save energy, or how to e.g. avoid the use of cooling appliances while adapting indoor comfort by using sun blinds on the windows according to their orientation at the right moment of the day, using fans and ventilators, or natural ventilation especially at night, etc. For example, the landing page for cooling advice on the French internet platform proposes several sections: Cooling and climate, Alternatives to air conditioners, How to choose an air conditioner, How to best use air conditioners to consume less energy, Install and maintain an air conditioner.

4 & 5 – Consumer and Stakeholder outreach campaigns

Coordination: Eliante, Quercus, EST, ADEME, Bush Energie

Based on the technical and contextual information developed, the HACKS partners worked for more than 3 years to present continuously updated product information and advice on their website, in their language and tailored to the 15 national situations where a Topten/HACKS website was maintained. Keeping the website updated, disseminating information and developing partnerships with stakeholders was the HACKS core activity for most partners.

First, supported by ETS's communication competencies, partners **designed plans for their national involvement campaigns**, both targeting consumers



Conseils d'achat et d'utilisation Pompes à chaleur



Sobriété énergétique : comment agir au quotidien

- Programmer votre thermostat pour ne pas dépasser 19°C en journée et 17°C la nuit
- Éviter de chauffer les pièces inoccupées
- Limiter les déperditions de chaleur (caulottage des ouvertures inutiles et mal isolées, pose de survitrages sur les vieilles fenêtres, boudins en bas des portes, etc.)
- Désactiver complètement la fonction chauffage dès que la météo permet de mettre fin à la saison de chauffe
- Opter pour des douches plutôt que des bains et éviter d'appeler de l'eau chaude pour les usages ponctuels

Isolation thermique, pompe à chaleur et émetteur basse température : un trio gagnant !

Example from Belgium advice page: 3 steps to save energy – Insulate well, low temperature heating, sustainable heating and the France Heat Pump advice page – Insulation first, heat pump and low temperature emitters.

and targeting stakeholders – with different and specific activities. They then implemented their plans, adapting to real world’s development, such as the COVID-19 pandemic and the energy and economic crisis related to the Russian invasion of Ukraine.

Each partner studied and adapted its product selection criteria to **display on-line the most relevant product categories**. For each product category, a webpage explains the selection criteria (the methodology is simple and always public so that consumers can understand the importance of the various parameters), and another webpage proposes advice on how to choose products, and tips on how to lower bills and improve comfort even in situations in which it is not possible to invest in a new equipment.

Table 1 – Summary of the HACKS Product lists displayed on the national websites

Equipment	AT	BE	CH	CZ	DE	ES	FR	IT	LU	PL	PT	LT	NO	SE	UK
Ventilators		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓
Air conditioners	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓			✓
Mobile air conditioners				✓											
Intelligent thermostat			✓												
Heat pumps	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Solid fuel boilers	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓
Pellet			✓						✓						
Local space heaters		✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓
Heat pump water heaters	✓	✓	✓	✓				✓	✓	✓	✓			✓	✓
Electric water heaters and combined water heaters												✓			
Dehumidifiers			✓												
Taps and shower heads		✓	✓	✓	✓	✓	✓	✓			✓				✓
Circulation pumps		✓	✓	✓				✓	✓	✓		✓	✓	✓	
Windows			✓							✓				✓	
Photovoltaic	✓		✓									✓			
Insulation	✓								✓						
Doors										✓					
District heating														✓	
Solar Thermal										✓		✓			
Humidifiers				✓											



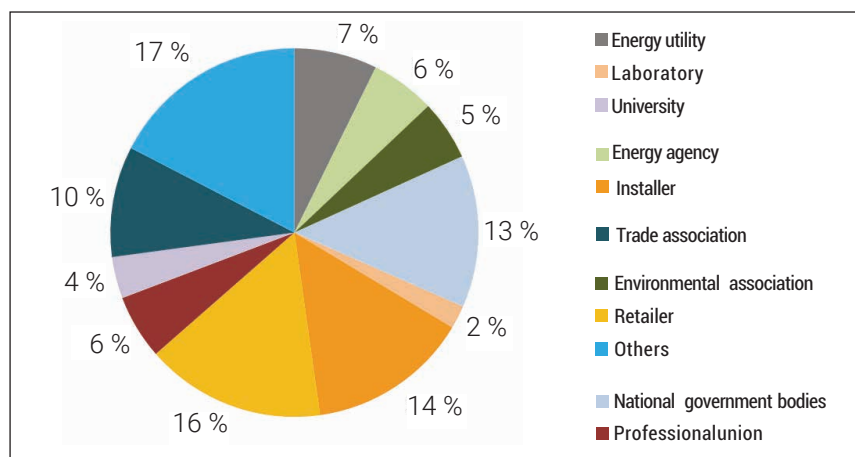
Example of HACKS infographic used by several partners after translation and adaptation

Based on the website content, the HACKS partners then implemented a wide variety of dissemination actions, many of which are illustrated in Section 3: Topten Achievements.

They developed many infographics, 2 calculators (one for winter, one for summer) helping consumers understand the environmental and economical stakes and benefits of shifting to most efficient equipment, organised European competitions and raffles, organised specific activities to reach specific target groups (such as vulnerable consumers), produced videos, were present at fairs and organised topical webinars, established referral marketing links with retailers and installers, provided overview of available rebates for most efficient products, reached out to the media, etc.

HACKS achieved coverage in **over 1 000 media pieces**. As a result, over 70 Million media contacts were reached⁴. Another results of the campaigns are the number of **page viewed** for the HACKS content. Their number was monitored on a monthly basis together, with the objective to monitor the project but also to learn from comparisons between countries, between media events generating traffic, etc.

Partners also managed to generate **245 partnerships with multipliers**, i.e. organisations such as installers, retailers, national authorities, consumer associations, media, utilities, professional unions, public procurers, etc. that relay the HACKS / Topten messages to their own target groups.



A specific target groups were policy makers because of the structuring impact they can have. **HACKS partners compiled 94 policy recommendations to boost market transformation**. The product lists of BAT models acted as benchmarks, proving achievable levels of energy efficiency and serving as indicators for future minimum energy performance standards. Input was also given to national policy stakeholders, such as outlining appropriate goals, levels and criteria for financial schemes or contributing to national climate strategy papers.

Three major inputs at the European level were:

- The review process of the F-Gas regulation which has significant potential to save greenhouse gas emissions, and through a combination with energy efficiency, save money.

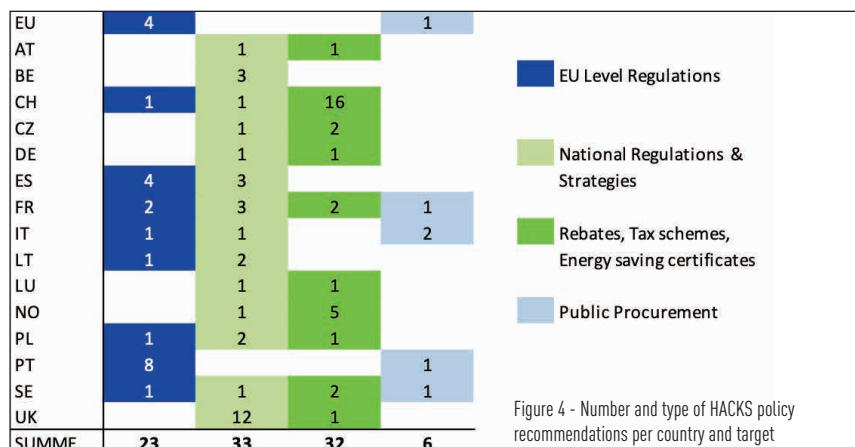


Figure 4 - Number and type of HACKS policy recommendations per country and target

HACKS media coverage

Type	Number of pieces
Print article	52
TV appearance	5
Radio slot	18
Press release	20
Social media	872
Web article	244

Topten HACKS content web page viewed statistics

Topten/HACKS page viewed numbers 2019- 2023	
Page viewed	2,593,000

Figure 3 - Distribution of HACKS partnerships by multiplier's typology

4 - Person potentially in contact with a HACKS content in the media, given the readership and audience of the media in which Topten/ HACKS featured.

- The benchmarks for comfort fan which will be used for the future EU Energy Labelling and Ecodesign regulations
- The policy paper for the new merged energy label for local space heaters & air conditioners.

6 - Impact monitoring - Coordination: AEA, ADEME, EST

The 3 main objectives of this component were to quantify the environmental and energy savings for society generated by HACKS, to evaluate additional qualitative project impacts arising from the consumer and multipliers involvement campaigns and to assess the financial sustainability beyond the HACKS project.

In order to measure the success of the HACKS project in terms of environmental impact, Key Performance Indicators (KPIs) were monitored during the whole project to follow-up and verify the project's impacts. The KPIs have been used as input parameters for a calculation model supporting the impact assessment on consumer involvement, on Green House Gas (GHG) emission reduction & energy savings, as well as on the uptake of energy efficient products and services⁵.

The calculation model was developed upstream of the HACKS project and assumed "specific savings" in kWh per parameter. For example, the parameter "page views" had a value of 90 kWh (over product lifetime) per page view. The basis for this value contains first assumptions how many page views would be needed to achieve the savings per product group, considering different levels of ambition per product group (more for heating products, much less for comfort fans, being cheaper and easier to install) and second the sum for relevant product categories (ACs, comfort fans, heating, etc.).

The KPIs – covering both quantitative and qualitative evaluation (see below) were the following:

Savings generated per		Value	Specific savings [kWh]	Savings [GWh]
KPIs mostly targeting Consumers	... page views <i>KPI 1: online platforms</i>	1,128,244	90	101.5
	... media contacts <i>KPI 2: Media Outreach</i>	56,610,995	1.5	84.9
KPIs mostly targeting Stakeholders	... manufacturer involvement <i>KPI 3: contacts and partnerships with manufacturers</i>	62	1,000,000	62.0
	... partnerships <i>KPIs 4, 5, 6: contacts and partnerships with consumer organisations, installers, retailers and other multipliers</i>	245	600,000	147.0

Beyond these, other indicators have been monitored and evaluated regarding policy recommendations (KPI 7 and 8), stakeholders informed (KPI 9) and the level of consumer involvement (e.g. through their participation in competitions).

The calculation model results in the evaluation of **primary energy savings triggered within the project duration over 1,185 GWh**. This corresponds to final energy savings of 474 GWh, i.e. the roughly the electricity consumed by 120,000 households. It also corresponds to over **235,000 tCO₂eq avoided during the project**.

⁵ - The full methodology is available in Deliverable D6.2 "Final project report summarizing the quantitative evaluation of the impact".

When the **HACKS teams** speak at conferences, present the project to policy-makers, promote manufacturers' best appliances, undertake common

activities with utilities, NGOs, retailers, etc. they **have an influence** – difficult to quantify but undeniable - on these stakeholders' decisions and strategies. This is why this component aimed at highlighting some of the Topten impact from a qualitative point of view (see Section 3).

- The HACKS teams selected **32 case studies** that they considered as success stories, highlighting what the project brought to different stakeholders and markets. Success stories cover partnerships with installers, retailers, supporting the work of public procurers, stimulating the political agenda, organising competitions for manufacturers, supporting rebate programmes, etc.
- These stakeholders could also express themselves and give their own point of view on the value that the project brought to them, thanks to **64 interviews** that were undertaken by the HACKS teams, crosschecked and summarised at the European level. They show a great appreciation of the HACKS work that was sometimes crucial for their activities, that stakeholders have many suggestions on how to improve the value of the project to them and their own community, and that they presume the project will continue.

Finally, thanks to a two-step study among the HACKS partners, EST assessed **the sustainability of the HACKS project**. Three main financial sustainability models emerged as more favourable: affiliate marketing, government subsidy and partner self-funded – even if they would often only part fund the Topten website or fund a specific activity. A key conclusion to note is that the success of models is often very linked to the situation in a country as well as the current set up of the Topten website.

7 – Communication - Coordination: ADEME, Bush Energie

This component had the goal of assembling project results and **promoting the project's overall results at the European level**.

The promotion focused on the www.topten.eu portal and the "Best of Europe" results. The project was widely promoted at conferences and meetings with decision makers and manufacturers. Four **HACKS papers** were presented at the ecee Summer study 2021 and at the EEDAL 2022.

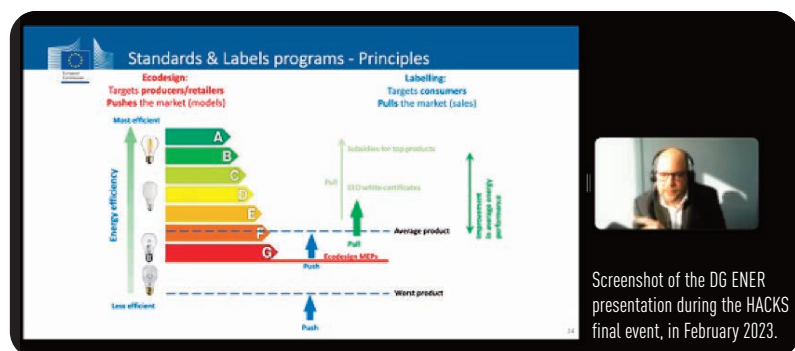
The project also organised a **public conference** to publicise the HACKS results; it was held on-line on February 14th, 2023, and gathered 82 participants.

The conference programme was built in order to cover both methodology and policy issues – including a presentation from CINEA and a presentation from DG ENER on the HAC product policy – and to showcase as many as possible concrete actions and impacts of the national HACKS teams.

A dedicated HACKS webpage displays a link from which the various presentations can be downloaded:

<https://www.topten.eu/private/page/hacks-conference>.

Figure 5 – Screenshot of the DG ENER presentation during the HACKS final event, in February 2023.



Screenshot of the DG ENER presentation during the HACKS final event, in February 2023.

Topten - A global network

Topten websites need time to be established at national level and become well known. By covering several product groups and engaging in continuous communication they succeed in becoming widely known and generate considerable impact. No Topten website can "rest on its laurels". If the market surveys are not updated regularly, and / or if communication activities slacken, awareness levels and website visitor numbers drop sharply within just a few months.

Up until the end of 2008, Topten projects within the Euro-Topten network have been focusing on technical issues in order to ensure sound and up-to-date information for consumers and a credible ground to exchange information with the manufacturers. From 2009, increasing communication activities have been developed to promote Topten to individual consumers, therefore contributing to consumer awareness on potential energy savings, and more recently towards retailers and public procurers - with a focus on office equipment. In the period 2012-2014, with 18 Topten websites working together, more products categories were presented, generating more visits, reaching more retailers and partners. A product competition, including product testing, has been organised. Between 2015 and 2018, 16 Topten websites continued this work, focusing on leading consumers to acting and choosing the best products in shops, thanks to partnerships with retailers and the set-up of referral links toward on-line shops – thanks to the development of a new software.

During these last years, some Topten partners also developed a new Topten field of activity, working on professional and commercial cold appliances, for which the potential energy savings are very large.

Since 2019, 15 Topten websites took up the challenge of covering heating and colling equipment. Thanks to the HACKS project, they had the opportunity to adapt the Topten approach to this field which is different from domestic appliances because products must be tailored to each consumer – and most often cannot be considered as plug-in products.

TIG – Topten International Group

Next to the national and European Topten projects (implying dedicated budgets and work programmes), the association Topten International Group– TIG has been founded with the objectives to support the launch of and co-ordinate national Topten projects.

The "Topten umbrella" has thus been created, which provides a continuum in time to maintain international collaboration between national Topten projects on the long run, and in space to welcome Topten projects from outside Europe and therefore allow for a better international understanding and the development of benchmarks. Any country can join at any time.

Each of the national Topten has its own web site, which can be accessed through the common portal www.topten.info. Euro-Topten partners and TIG

members follow the Topten Charter whose purpose is to guarantee Topten quality and neutrality vis-à-vis the market actors (see appendix 1).

TIG oversees the continuous development of:

- 15 Topten projects in Europe accessible through www.topten.eu. At European level, TIG runs the project "Best of Europe", which addresses researchers and policy makers, presenting the best available technologies in Europe for specific products (see Section 3.B). This concept identifies the most energy efficient products available across Europe, indicating the countries where they are marketed.
- Topten Chile (<https://top-ten.cl>) and Topten Argentina (<https://toptenargentina.org>) were launched in 2015, Topten Brazil (<https://topten.eco.br>) in 2019 and Topten Peru (<https://www.topten.pe>) in December 2020.

As an example of joint international level activity, a short video was filmed by WWF Climate and Energy about the HACKS project, its purposes and activities⁶.

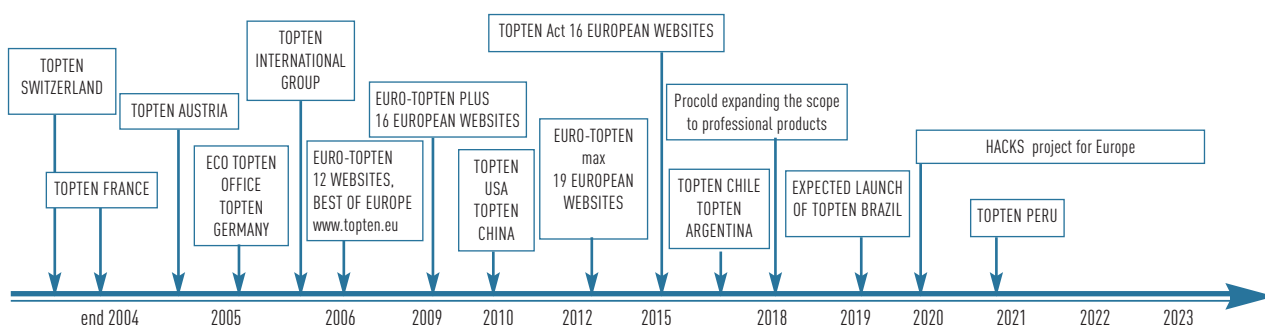


Screenshot of the Topten Peru website



Screenshot of the WWF blog on the HACKS project

6 - The video is on line at: https://www.youtube.com/watch?v=akqRSWfP30w&feature=emb_title



3

Topten's achievements

Find out best heating and cooling products in Europe

Home appliances

- Comfort fans
 - Ceiling
 - Floor
 - Stan
 - Table
 - Tower
- Humidifiers
- Taps and showers
 - Flow regulators
 - Mixer
 - Shower heads

Home equipment

- Heat pumps
 - Air-water
 - Earth-water
 - Water-water
- Air conditioners
 - Split
 - Multi-split
- Electric water heaters
- Circulation pumps
- Local space heaters
 - Logwood
 - Pellets
- Solid fuel boilers
 - Logwood
 - Pellets
- Plug&play solar panels

Available in some countries

- Mobile AC (CZ)
- Dehumidifier (CH)
- Intelligent Thermostat (CH)
- Pellets (CH, LU)
- Windows (CH, PL, SE)
- Doors (PL)
- PV (AT, LT)
- Solar thermal (LU, LT)
- Insulation (AT, LU)
- District heating (SE)

Multiple levels results and impacts. Topten covers a wide range of activities, from detailed market and technical studies to dissemination to various target groups including the general public. This versatility offers many keys for evaluation. A city modifies its procurement policy; a utility decides on a rebate programme; policy makers favour ambitious regulations; NGOs communicate on energy savings in homes in order to link individual behaviour and climate change issues; retailers choose to adopt energy efficient positioning, revise their product range, get more clients via referral links; manufacturers develop new efficient models and strongly market them; consumers' demand for efficient models grow – Though these decisions depend on the strategies stakeholders decide to adopt, Topten may weigh, more or less explicitly, in all of these decisions transforming markets.

Within the market transformation toolbox, Topten is considered as a "soft measure", a measure that definitely impacts the market on crucial aspects: it is a market shifter, a facilitator, an education tool, a decision-making aid. The resulting number of saved kWh can be best quantified in the framework of a structured and comprehensive evaluation project.

Several evaluation studies have been carried out in order to evaluate Topten's multiple impacts⁷. These studies, and the indicators monitored during the HACKS project, confirm the high impact of the Topten approach when considering the lifetime of the efficient products chosen by consumers, impacts on manufacturers, installers, retailers, professional buyers, multipliers and policy makers that frame the market and its evolution.

Considering HACKS impacts on stakeholders and impacts on consumers – BAT product lists, 245 partnerships promoting best appliances, 2.6 million of page views generated on HACKS related content on the European Topten websites, over 70 million readers and viewers reached with information on HACKS, participation in the HACKS activities – the energy savings triggered within the project duration are evaluated at over 1,185 GWh. This corresponds roughly to saving the electricity consumed in a year by 120,000 households. It also corresponds to over 235,000 tCO_{2eq} avoided during the project.

The monitoring activities undertaken within the framework of the HACKS project confirm other important trends:

- A constant growth of the websites' contents, starting with the opening of the websites to Heating and Cooling equipment (in number of product categories and advice pages)

7 - Beyond the Topten own monitoring reports, the University of St Gallen and the INFRAS conducted Topten Global Impact Assessments

3

- The fact that all Topten projects were able to strengthen their selection criteria for several product groups – showing that the best on the market have evolved positively enough to look for even better performance.

Next to the deliverables of the HACKS project, Topten brings about three major positive impacts, which all together contribute to save energy.

- Visitors get to know very quickly and simply about best equipment, they can choose and buy those best products in one more click. For building equipment, they benefit from advice on low- and no-cost measures to improve comfort and reduce energy bills. They save energy and avoid CO₂ emissions.
- The www.topten.eu portal has enabled the Topten partners to develop synergies and develop the "Best of Europe" activity which identifies best available technologies and presents the status quo on efficient products.
- Through their daily activities, the Topten teams generate substantial positive impact and play a range of market functions that add value for the full range of market actors: consumers, manufacturers, installers and retailers, procurement officers, policy makers, utilities, the media, NGOs. These three major types of impact are detailed below.

3.A Topten available to millions of people

The best indicators of the vitality of a project largely based on internet are the page views, together with the numbers of quotes in the media.

Notoriety can only result from the intensive Topten teams' communication activities. A deficit in communication activities means fewer page views, less interest from manufacturers, and from large-scale buyers and less credibility, this is why the Topten teams have actively worked to reach over 70 million readers, listeners and viewers, and more than 2.6 Mio page views specifically on HACKS content over the 3.5 years of the project.

However, the number of page views and the echo in the media depends on many external factors that do not fall under Topten's control: the public's general awareness and sensitivity to energy, environmental issues changes according to the international context (economic crisis, climatic catastrophic event, raise or drop of oil and energy prices...) and political agendas; the fact that media follow trends and have the final say for what they publish even if Topten provides high quality material; the varying degree of interest and willingness of partners to collaborate with Topten; etc.

Between 2019 and 2023, the context was particularly impacting. At the beginning of the project, the COVID-19 pandemic and lock downs heavily perturbed every-one: the manufacturers and their supply channels, the installers and retailers that could not meet their clients, the media that were dedicated to this single topic, consumers that shifted priorities, etc. It was particularly difficult to reach out the HACKS target groups in this period. In the last year of the project, the war in Ukraine and the consecutive energy and economic crisis also affected the project. Though a lot of attention was drawn on the energy topic, there were a lot of commercial messages from powerful stakeholders, and the HACKS teams had to adapt and push more their advice and tips sections on how to save energy in a hurry.

• **73,500 participants in the HACKS raffles and competitions** over the project's duration

• **More than 2.6 Mio page views** generated on HACKS related content on the European Topten websites over the project's duration

• **More than 70 Mio readers / listeners / viewers** had a media contact with Topten HACKS content in the 15 countries over the project's duration

3

3.B www.topten.eu Portal and Best of Europe

- The portal www.topten.eu is an axis for all Topten projects: it provides access to the national URLs, to the HACKS sections, to the Topten Pro section for professional buyers, information on the Topten project, and also proposes a specific international activity: "Best of Europe".
- Best of Europe targets policy makers and researchers with up-to-date information on the best products available on the European market. The objective here is to provide explicit and transparent information on best available technologies and the *status quo* on energy consuming products on the European continent.

The information is displayed in the Topten user-friendly way (quick access to the information, various functionality of the products, etc.); additionally, the site provides global market analysis and recommendations for policy makers. These comprehensive product information overview fulfils two main functions:

- Best of Europe supports the national Topten teams:
 - As a key source of information: teams starting to benchmark a new product use the European selections as a market comparison basis, they benefit from the already developed selection criteria, from information in English on the product itself, etc.
 - As a quality control tool: information issued by manufacturers' headquarters can be checked in the field, in order to harmonize national Topten selection and best of Europe selections.
- Best of Europe provides explicit and real-time data on Best Available Technologies and their presence on the European market.

In a market covering 27 countries, Best of Europe is the only review of the supply of efficient appliances.

Eventually Best of Europe data are to be used for future policy design, labelling strategies, dissemination programmes, as a basis for standard harmonisation and the adoption of minimum efficiency requirements, and specifications for large-scale buyers. They offer the opportunity to coordinate a common understanding and empower decision makers to launch new initiatives promoting efficient products.



Topten help revise European regulations

In 2017, Topten Switzerland started working on comfort fans in cooperation with the utility of the Canton of Zurich; at that time, many products did not fulfil their basic information requirements planned for in the European Ecodesign Commission Regulation (EU) No 206/2012. Indeed, a preliminary product survey showed that 89% of 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.

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 were applying in China, which is the largest supplier of comfort fans in Europe. 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).

Topten continued to maintain the products list for comfort fans as a part of the HACKS project. Based on its 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 fans over several years and published papers at international conferences on this issue. Topten supported the regulation process by providing evidence 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 markets 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 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.

Environmental Dumping from China

- Since 95% of products are imported from China, the energy efficiency of the fans in the sample were compared to the Chinese MEPS.
- Out of the 75 models evaluated, 32 models (42%) did not comply with the Chinese MEPS.
- It is expected that the amount is even higher as there is a reporting bias where good performers tend to report more than bad performers.

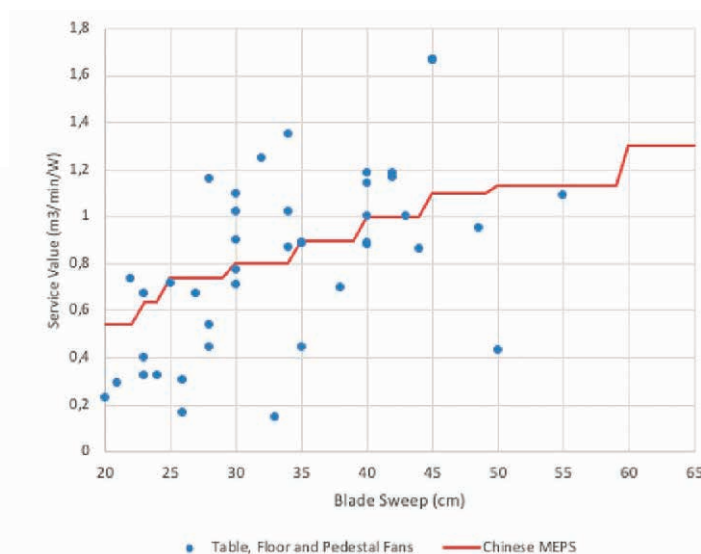


Figure 6 - HACKS presentation on comfort fans

3

3.C Positive Impacts on target groups

With 17 years of steady international growth, Topten has built an unparalleled experience and represents a full educational and technical services package, a unique best practice database. In short, Topten serves as a genuine public service. Topten plays a range of market functions that add value for the full range of market actors. We have chosen to illustrate the Topten / HACKS impacts for heating and cooling equipment through a collection of sample activities led by the Topten teams.

Market Actor	Topten Value Proposition
Consumers	<ul style="list-style-type: none"> • User-friendly interface to identify most efficient products • Provide detailed advice on low- and no-cost measures to improve heating and cooling comfort, indoor air quality, and to reduce energy bills • Educate consumers on total cost (purchase price plus energy bill minus incentives) and good use of products • Communicate benefits of efficient products for climate protection
Installers & Retailers	<ul style="list-style-type: none"> • Bring potential clients from the Topten website directly to certified installers and product pages at on-line shops • Provide contextual information and tools to convince clients to target BAT products • Increase of high mark-up products' sales • Position retailer as "trend setter", and build trust in the message against climate change
Manufacturers	<ul style="list-style-type: none"> • Support market introduction of new products • Provide independent, objective marketing of products • Channel incentives and increase demand for innovative products
Large Buyers and Procurement Officers	<ul style="list-style-type: none"> • Support formulation of procurement specifications and award criteria • Ensure that very efficient products are available on the market (no pilot product, lower risk of unsuccessful calls for tenders) from brands that are able to provide all associated services • Reduce operating costs to enhance value-for-money
Policy makers	<ul style="list-style-type: none"> • Provide real-time market data on the "best" products, with energy efficiency as a key criterion • Pave the way for new and more stringent standard, label and Ecodesign specifications
Utilities	<ul style="list-style-type: none"> • Continuously identify the highest-efficiency products • Serve as a basis for rebate programmes • Serve as a source of information for their clients
Media	<ul style="list-style-type: none"> • Serve as credible, independent source of information • Issue regular updates • Provide one-stop shop for broad range of product categories
NGOs & Institutions	<ul style="list-style-type: none"> • Concrete actions to illustrate their campaigns on sustainable consumption and climate change, purchasing power • Material and information for their campaigns

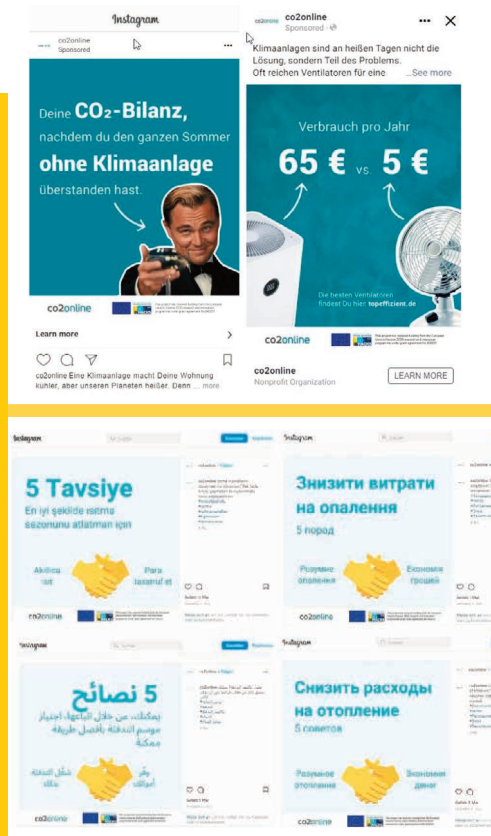
Consumers' full information

- A user-friendly interface to identify, choose and buy most efficient products
- Information on total cost: purchase price and energy bill minus incentives
- Information on the good use of products
- General awareness on benefits of efficient products for climate protection

Consumers regularly contact the Topten teams to congratulate them about the service, suggest improvements on the user friendliness of the site, ask questions on specific models, or on the market in general, question the selection criteria, spot evolutions on the market, etc.

Hooking consumers 1: Using social networks

The use of social networks to reach out to consumers is a must, especially when covering complex topics, whether posts are part of a paid campaign or part of the regular Topten organisation's communication. The HACKS partners have used social networks to reach many specific target groups, at specific moments. For example, in **Germany**, Topten targeted vulnerable consumers in various languages, communicated on the benefits of comfort fans during the 2022 heatwave, or Topten **France** communicated on a how to survive winter with simple measures to lower energy bills in the context of the war in Ukraine.



Hooking consumers 2: Creating videos

Videos are also a must, especially short ones, easy to disseminate on social networks. Several HACKS partners have created videos, for example to present the project in **Czech Republic**, targeting consumers in **Portugal** where Quercus' Green Minute is broadcasted on the national TV or in **Italy** where Facebook has been used to disseminate Do-It-Yourself videos on insulation, or even targeting installers as in **Spain**.

To make it more interactive, **Germany** organised a webinar with HAC experts answering questions that were gathered beforehand: 560 consumers joined the webinar which was evaluated positively.



The seminar:
Our concept and experts

- Heating installer: expert on heat pumps, gives technical and practical information and also builds trust in the craftsmanship
- Energy consultant: the critical voice with focus on data and performance
- co2online on subsidy programmes and buying advice
- Two consumers: one installing, one using



Hooking consumers 3: Presence at Fairs

Not all consumers can or want to use digital means to find information. Therefore, it is important, especially for complex topics, to propose a real exchange with consumers. It was not possible as often as expected because of the COVID-19 pandemic, but nevertheless several teams managed to be present at fairs, such as the **Austrian** team at the "Welscher Energiesparmesse" in February 2022.



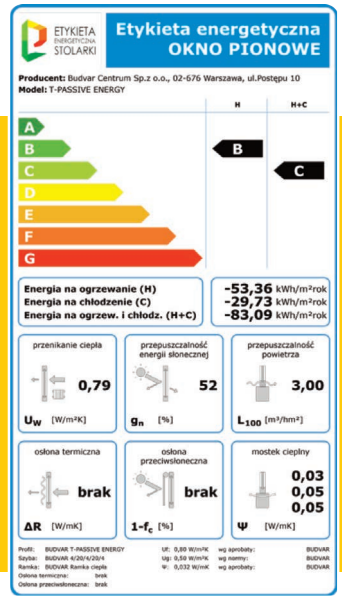
Hooking consumers 4: Games

The HACKS project organized competitions and raffles to attract consumers and make their website known. In the case of the 2 European HACKS competitions, consumers had to use the HACKS calculator to be able to answer a question and take part in a draw to win an indoor air quality monitoring tool. At the national level, more than 30 raffles were organized, with a simple question to answer to win a small present in relation with energy efficiency. Overall, more than 73,000 participated in the HACKS games! One of the winners of the EU competition was in **Belgium** and explained in an interview published on-line her interest for energy savings, whether by choosing efficient product or by changing her behavior.

Manufacturers' marketing facilitator

- A support for market introduction of new products
- Independent, objective marketing of products
- A channel for incentive, and increased demand for innovative products

Throughout Europe, in their daily work, the Topten teams are in contact with hundreds of product managers, marketing and R&D staff checking data, availability, prices, etc. in order to promote best models on line – thousands of products are highlighted by Topten, following a neutral and transparent methodology, which is published on-line.



Topten Poland regularly organises manufacturer competitions

for efficient windows and doors, for which they established specific selection criteria based on the heat transfer coefficient, the solar energy transmittance and the air permeability, but also on economic parameters. Organising competitions allows to create lists of best products for which information is made available by manufacturers, to communicate about the process and the winners. A specific *ad hoc* label was developed. 78 manufacturers participated with 89 products.



Cooperation with manufacturers' associations

is a good way to promote most efficient equipment and related behaviour advice. In general, no products are put forward since these associations promote all their members, but key messages are reinforced when jointly supported by the association and Topten/HACKS. In the **United-Kingdom**, both the Energy Saving Trust Topten and the Unified Water Label Association, a manufacturers' association who developed a private label to inform consumers, promoted a blog publication on water savings. In **Norway**, the HACKS partner, Energismart, teamed with Norsk Varme, the fireplace industry association, on the "Wood Heating Day", with an event for consumers.



Installers' and Retailers' objectives sales Aid

- Direct referral links from the Topten websites to the best products on retailers' on-line shops, links to labelled or referred installers networks
- Increased sales of high mark-up products
- Clear positioning as trend setter, trust in the message against climate change
- Tools, training module, and contextual information for complex messages on building insulation and HAC equipment.

Oekotopten, a label of excellence and a support to decision making

Oekotopten.lu has started its first partnership with retailers in 2008 with **Luxembourg's** largest retail chain "Cactus". Since then, partnerships have increased to cover a wide range of products. All Topten-compliant products listed on the Oekotopten.lu website are clearly marked in shops. Retailers receive the Oekotopten-label as adhesive or magnetic sticker. They can use for free the Oekotopten-logo in electronic format to customize their own advertising material.

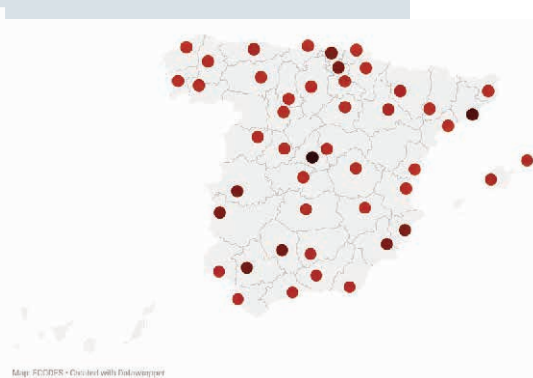
All shops are highlighted on a map on the Oekotopten.lu website. In addition, retailers can put a sticker on their door to make their partnership with Oekotopten.lu more visible to consumers.



Expert discussion and training for Installers

In **Belgium**, the HACKS partner, goodplanet, organized several webinars with the Association for Thermal Technicians which joined their HACKS technical committee.

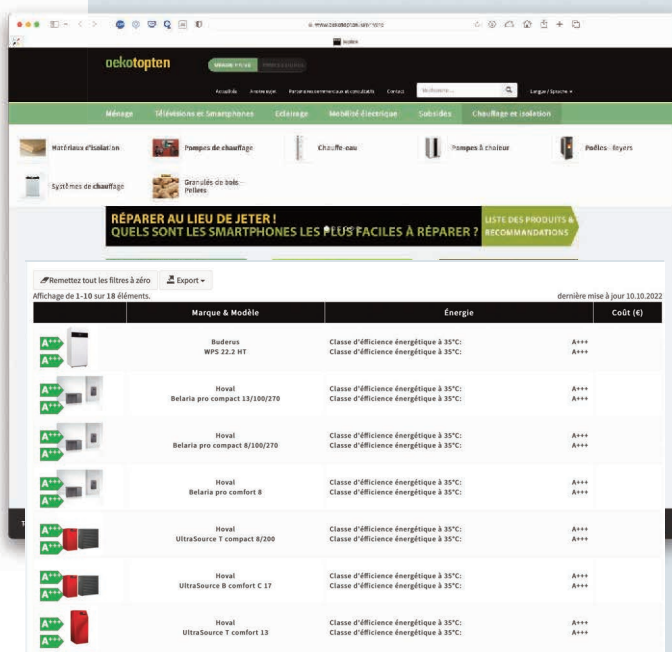
In **Spain**, ECODES produced 4 different videos for the National Confederation of Installers, which is present in the whole country and has many 1-person company as members. The videos covered: How to save energy and money; Tips to improve the temperature of your home and maintain comfort in winter; What types of heating systems can we choose from? How to choose the right heating equipment for your needs? Installers could send the videos to their customers, use them via their social networks and websites, use them during training sessions.



3

Impacting policy

- Real-time market data on the “best” products, with energy efficiency as a key criterion
- Indications on the way for new and more stringent standard & label specifications.
- Support to Green Public Procurement



Topten as a basis for rebate programmes

In the last years and especially in prevision of a tough winter 2022 because of the pressure on the gas supply linked to the war in Ukraine, many European countries have designed rebate programmes to encourage citizen to change their very energy consuming boilers and inefficient heating systems. In order to tap maximum energy savings, several countries have based these rebate programmes on the Topten selection criteria. This is for example the case in **Czech Republic** where the HACKS team was involved in the process of the “New Green Savings Programme” of the Ministry of the Environment for solid fuel boilers, which eventually followed the Topten specifications. Another example is **Luxembourg** where the subsidy calculator developed by the national Climate Agency, has a link to the EcoTopten website which shows eligible products to the “Klimabonus” for the most efficient heat pumps and wood-fired boilers.

Topten as source of information on subsidies



Given their notoriety and the fact that they promote most efficient appliances, many Topten website relay the information about available subsidies and tax refund. They can do it by linking to governmental websites where those schemes are promoted and explained, or they can propose themselves a summary of the various financial measures to support further their visitors. It is the case in **Luxembourg** where more than 100 local schemes – at the city level – are listed and in **Italy**, where a specific page presents the “Super bonus” and the “Ecobonus” – the highest support in the EU to efficiency and renewable energy – and other financial support schemes.



Topten as a support to Green Public Procurement

Several European countries have specific rules for public procurement, that is seen as a tool to help paving the way for more energy efficiency: national and / or regional and local public buyers should choose the “best offer” according to various parameters including environmental parameters, as opposed to the “least costly offer”. The Topten product lists can guide public buyers for specifications and award criteria, and most importantly provide the assurance that very efficient products are available on the market (avoiding unsuccessful call for tenders), from brands that are able to provide all associated services. The HACKS project has produced simple procurement guidelines that were translated and adapted by several countries (Italy, France, etc.). For example, in **Portugal**, the Topten procurement guidelines are publicised by the National Strategy for Green Public Procurement on its website.

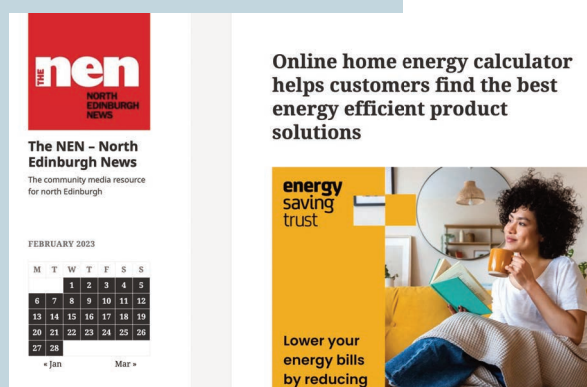


Topten is a well-known media source

- A credible, independent source of information
- Regular updates
- Product experts available for interviews
- One-stop shop for a broad range of product categories, Topten provides media with dependable and straightforward resources through the promotion of the products' selection (press releases, press conferences, etc.) and ready-to-use editorial material for news articles, journals, TV and radio reports. The resulting direct referrals by major media outlets and on-line consumer resources (e.g. Google) are in turn a major boost to Topten websites traffic.

Topten broadcasted in several countries

TV interviews are the most impactful media activity that generate visits to the Topten websites. Several countries had the opportunities to see their HACKS experts interviewed for example in **Latvia, Portugal, Switzerland**, others could be broadcasted on the radio or feature on important newspapers. For example, in the **UK**, the Energy Saving Trust was able to publicise the HACKS calculator in the North Edinburgh News.



Topten.ch in Switzerland TV interview on practical tips for saving energy at home

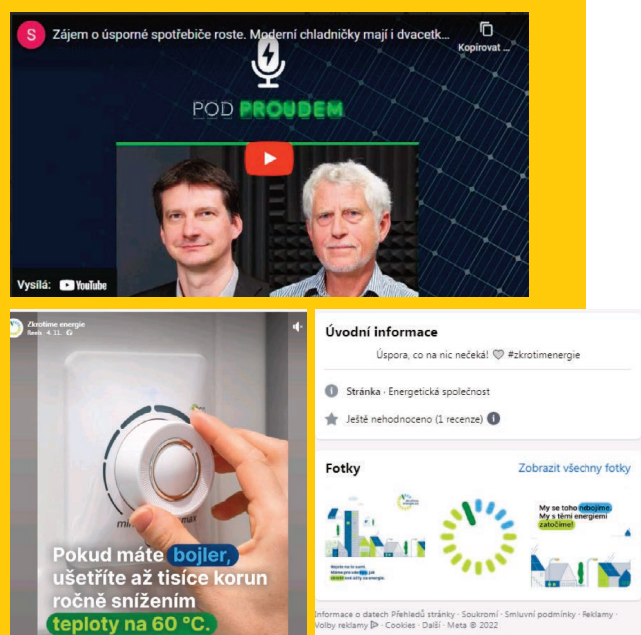
The Lithuanian National Consumer Federation interviewed by LNK, a Lithuanian Independent Channel, on energy efficient appliances



Comprehensive campaign in the winter 2022 / 2023

This winter was marked by the need to drastically reduce European energy consumption in relation to the energy crisis triggered by the Russian invasion of Ukraine. For example, **Czech Republic** built a comprehensive communication programme, having HACKS present in a variety of communication channels, producing infographics, publishing on all social networks, being interviewed on the radio and in podcasts, participating in events and webinars, and involving important dissemination partners. Three main arguments were pushed forward: Energy efficiency as a tool for reducing fuel imports from Russia, for limiting sponsoring of their army & ensure energy independence, for lowering energy bills, for protecting climate and clean air.

The reach of the campaign was very impressive and surely contributed – at least for a small part – to the drop in natural gas consumption in the Czech Republic, which decreased by ~20% (weather conditions accounted for).



3

Multipliers', NGOs' and institutions' campaigns support raising awareness with Topten

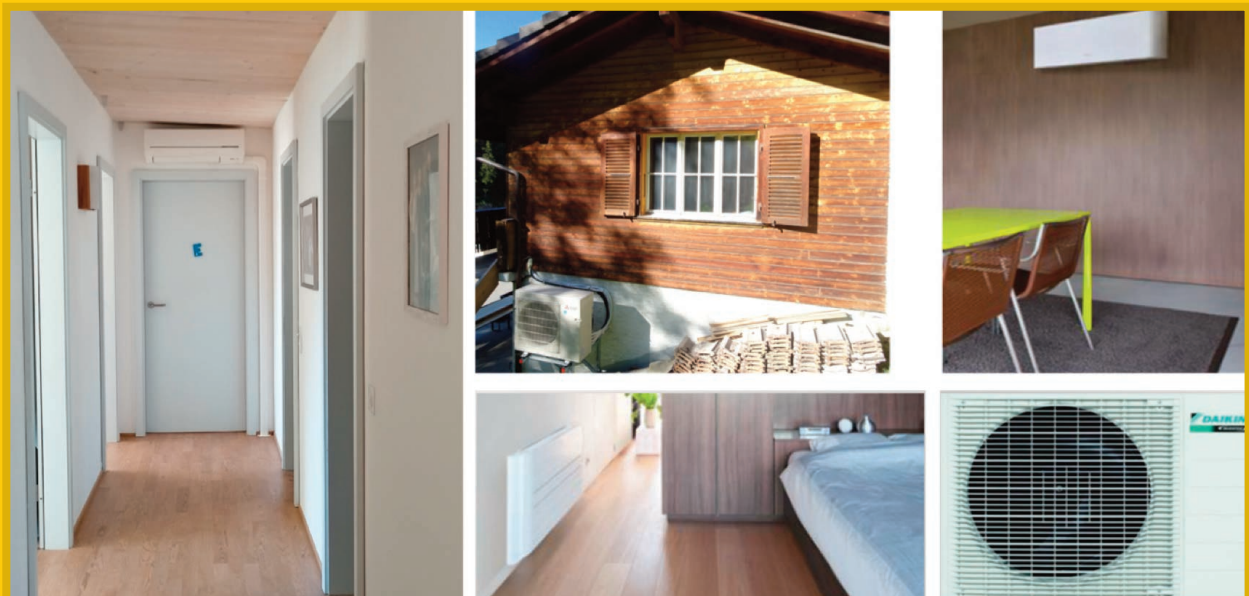
- Concrete actions to illustrate their campaigns on sustainable consumption and climate change
- Material and information for their campaigns
- Source of information for utilities' clients

Most Topten projects benefit from a close relationship -and in some cases are co-managed- with a consumer organisation or an environmental NGO. For Topten, this feature is essential to reach the general public and public authorities, and to gain support (be it in the form of money, data or referrals in the media); for these NGOs Topten brings information and a live illustration of actions that can be implemented to mitigate climate change and consume in a judicious way – two major objectives of these stakeholders. Likewise, many partnerships are developed with institutions, themselves leading awareness campaigns and looking for synergies with concrete projects enabling citizens to act. More and more utilities also become interested in energy services for their residential clients – in some cases because regulators oblige them to invest in energy efficiency, in others because they view the promotion of energy efficiency as a way to build clients' loyalty.

Heating with air conditioners – a Topten research project in Switzerland

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. Topten started a research project on this

topic, first for the utility of the canton of Zurich and now supported by the Swiss Ministry of Energy. The main objective is to study the suitability to replace inefficient electric heaters approaching the topic from a theoretical and from a practical point-of-view: which products are technically particularly suitable for heating; which are the practical application of heating with air conditioners and the perception of users in a variety of cases.



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



HACKS in teaching material in Sweden

Amongst its many activities, the SSNC supplies teachers and students with teaching materials connected to nature and environmental issues. In this framework, HACKS content was developed, with an introduction on energy topics, such as:

- 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, where the students browse the site to find the numbers, and
- the EU energy label – how to use it to differentiate between products.

For all these topics, illustrations and simple math calculations were provided, making learning easier. The feedback received was unanimously positive.



HACKS experts supporting NGOs

Many HACKS teams joined the ECOS standard campaign on air conditioning in the summer 2021 and 2022. But beyond this activity, several experts were invited by NGOs at the national level to provide tips on energy efficiency in the heating sector. For example, in France Guide Topten made a presentation during a webinar for members of “Energie partagée”, an NGO promoting local energy generation from renewable sources and energy savings.

Likewise, in Lithuania, the HACKS partner worked with the Lithuanian Solar Energy Association to encourage farmers to produce their own electricity from renewable sources to cover their farm’s needs.



Topten: The keys to success

- Competent, neutral, independent: energy experts with no links to manufacturers nor retailers design selection criteria
- Transparent selection: all methodologies are available on-line
- Only very best products are presented: work and budget concentrate on efficiency
- Comprehensive variety of categories to attract visitors: hundreds of product categories and thousands of products
- Information on purchase price and global cost (with energy bills)
- Beyond energy features, market features that interest and attract consumers: photos and main functionalities of products
- Simple, fast and up-to-date: direct access to product information on what is available in shops (at least two updates per year)
- Advice on low- and no-cost measures to improve comfort and indoor air quality and reduce energy bills when it is not possible to invest in new equipment
- Advice for good use of the products
- Analytical studies of the market and technical expertise for specific products

Topten

- 1.** Topten is a concept with tools for end-users to speed up sales, focus on quality and lower barriers for market access of energy efficient equipment and respective information in households, offices, buildings, industry, transportation, etc.
- 2.** Topten is internationally coordinated by the Topten International Group (TIG: a non-profit association, based in Zurich, Switzerland) in order to increase influence on energy efficiency standards, to safeguard high quality of operations, to maintain independence, to accelerate exchange of experiences and data and to provide access to tools and web-systems for national Topten organisations. TIG safeguards the use of the Topten concept worldwide. It will protect international property rights of Topten.info, its name, logo and web content.
- 3.** Topten wants to move national and international markets, individual manufacturers and retailers, organisations of trade and manufacturers, international standard organisations, etc. to contribute to the efficient use of energy by providing, designing, building, marketing and operating more energy efficient equipment.
- 4.** In order to achieve this goal Topten has led by TIG the following tasks:
 - a. Research in national and international markets for the best products.
 - b. Building and updating databases for energy efficient equipment.
 - c. Design of criteria catalogues for the Topten-qualification (cut-off line).
 - d. Providing independent testing facilities.
 - e. Support of procurement programmes for energy efficient equipment.
 - f. Design and hosting of a series of national and international web-sites.
 - g. Support of design and distribution of print products with information on energy efficient equipment, etc.
 - h. Training for personnel working in national Topten projects.
 - i. Contacts to national and international organisations to influence the sale of more energy efficient equipment.

Charter

5. Topten works in cooperation with, but is independent of, equipment manufacturers and retailers and their respective associations.
6. Topten is not engaged in the sales of equipment that is mentioned on any Topten site.
7. Topten is organised nationally in order to better understand and guide market conditions.
8. Topten is financed and supported by national, regional, local and international governmental agencies, consumer and environmental NGO's and other partners (utilities, media, etc.). No sponsor shall be directly linked to the manufacturing and selling of energy using equipment displayed in Topten.
9. TIG does not normally support national Topten projects with funds except in developing countries under special agreement.
10. TIG chooses, gives accreditation and supports national organisations that want to use and distribute Topten in their country according to the Topten Charter. For the process of accreditation the prospective national Topten organisation has to setup its national partners, funding, operation managers etc. and provide the relevant information to TIG. The accreditation procedure is a transparent process with a peer review.
11. TIG tries to avoid having more than one national Topten organisation in a given country / or in a given market.
12. All national organisations accredited by TIG are members of the Topten International Group and are linked to www.topten.info. They pay an annual membership fee. They can use the Topten logo, operate their national Topten system and have access to the Topten database and international market research.

Since September 2006

WHO IS TOPTEN?

The HACKS project is led by energy specialists, environmental NGOs and consumer associations and consists of the following partners:



ADEME – French Agency for Ecological Transition, France (coordinator)



AEA - Austrian Energy Agency, Austria



GoodPlanet, Belgium



SEVEn -The Energy Efficiency Center, Czech Republic



Guide Topten, France



Co2online, Germany



Eliante, Italy

POLITECNICO MILANO



Politecnico di Milano – eERG, Italy



LNCF, consumer federation, Lithuania



OekoZentrum Pafendall, Luxembourg



Norges Naturvernforbund, Norway



FEWE Polish Foundation for Energy Efficiency, Poland



Quercus, Portugal



ECODES, Spain



SSNC, Swedish Society for Nature Conservation, Sweden



Bush Energie, Switzerland



The Energy Saving Trust, United-Kingdom

Whith the support of:

WWF Switzerland



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