HEATING AND COOLING
KNOWHOW AND SOLUTIONS
HACKS

D5.4 – Interim Policy Report

Gathering the produced recommendation papers summarizing the policy support activities on municipal, national and European level

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February 2021

HACKS coordinator: ADEME – www.ademe.fr

European portal www.topten.eu/hacks

Project partners and websites

Austria, AEA www.topprodukte.at	Belgium, BBL www.topten.be	Czech Republic, SEVEn www.uspornespotrebice.cz	France, Guide Topten www.guidetopten.fr
Germany, co2online www.topeffizient.de	Italy, Eliante www.topten.it	Lithuania, LNCF www.ecotopten.lt	Luxembourg, Oeko-Zenter www.oekotopten.lu
Norway, Naturvernforbund www.energismart.no	Poland, FEWE www.topten.info.pl	Portugal, Quercus www.topten.pt	Spain, ECODES www.eurotopten.es
Sweden, SSNC www.toptensverige.se	Switzerland, Bush Energie www.topten.ch	UK, EST www.toptenuk.org	Politecnico di Milano www.eerg.polimi.it

topten.eu

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About HACKS

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

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

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

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

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

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

More information on the HACKS project can be found at www.topten.eu/hacks

Executive summary

The document provides an overview of the policy recommendations provided by HACKS partners over the last year and a half. It reports the different types of policy recommendations – from different levels of government to different types of policy instruments – carried out by each partner during that period. The recommendations of each partner are summarized and illustrated. In the last chapter there is a short discussion about the strategies in disseminating the policy papers and an outlook over which actions might be expected in the second half of the project.

While the corona pandemic is the predominant topic in all countries, many governments are still rapidly progressing in compiling climate strategies and / or subsidy programmes to boost the economies. Most partners were able to capitalize on the situation by providing relevant policy makers with input on best available HAC technologies, efficiency criteria and expedient integration into upcoming regulations and projects. A total of 53 policy recommendations was submitted for the following four policy instruments:

1. EU level Regulations
2. National regulations and strategies
3. Financial tools: rebates, tax schemes, energy saving certificates
4. Public procurement

In order to provide decision makers with even more rounded input, HACKS partners engaged in collaborations with other environmental and civil organisations and expanded their policy recommendations to include aspects of fair financing and energy poverty, greenhouse gas and particle emissions (air pollution), energy grid development or necessary training of installers. Participation in NGO communications campaigns on European levels was successful in raising awareness not only with policy makers but also the general public.

Significant progress and momentum in policy development is scheduled for the second half of the project, especially with regards to the review of the energy labelling for heating appliances. The project activities with regards to policy recommendations will continue and evolve further.

Table of Contents

List of acronyms

BAT: Best Available Technologies
EU: European Union
F-Gases: Fluorinated Gases
GHG: Greenhouse Gas
HAC: Heating and Cooling
HACKS: Heating and Cooling Know-How and Solutions
MEPS: Minimum Energy Performance Standards

1 Introduction

The market transforms when consumers buy and install more efficient technologies and manufacturers – based on the market demand – develop new technologies. One of the main drivers of market transformation, however, are **policy instruments**, giving consumers incentives to choose more efficient products and manufacturers incentives to develop and produce more efficient technologies.

There are a variety of different policy instruments that governments can implement – either at local, national or international levels. One of the most common ones are **energy efficiency regulations**, often consisting of Energy Labelling and Ecodesign regulations. To support trading and international manufacturers they are predominantly implemented on the European level. Energy labelling helps consumers make informed purchase decisions and gives manufacturers of efficient technologies an edge in marketing. Ecodesign requirements ban the most inefficient technologies from the market and set further minimum requirements such as emission standards and resource and reparability requirements.

At national and regional level, **regulations and strategies** can be implemented to go beyond European requirements, taking into account particular circumstances of the area. Examples are climate strategies for net zero or stricter particulate matter emission regulations in regions with high air pollution.

Another highly effective policy instrument are **financial incentives**. Those can be tax breaks for buyers of more efficient solutions, tax penalties for less effective technologies, energy saving certificates or rebate programmes. In rebate programmes, the financial sponsors – be they governments or other organizations – set product criteria and all buyers of a product that complies with the criteria are entitled to receive a subsidy on the purchase price. Energy saving certificates are tradable documents, based on savings obligations, certifying reductions in energy consumption and find application in the various sectors, especially lighting and building renovation measures.

Lastly, governments or large organizations can set **procurement guidelines** (public or private). Procurement guidelines set minimum requirements in efficiency and other requirements (such as emission levels), award extra points for most efficient technologies or combine the two options. Those guidelines can be set at different levels – European, national, regional – and are tailored to the need of the organization. While efficiency and environmental sustainability are of increasing importance to professional buyers, the initial purchase price is still the deciding factor for many of them. Procurement guidelines that include minimum efficiency criteria exclude less efficient products from competing in the first place.

The different instruments complement and multiply each other. As such, one of the greatest impacts that can be generated from the HACKS project are policy recommendations that help policy makers use their instruments to their full potential in order to accelerate market transformation.

Each partner has identified relevant national policy makers as well as other stakeholders with aligning goals and has opened lines of communication for ongoing and future policy projects. In addition, policy recommendations on a European level were given directly to the official platforms, further supported by national dissemination of the important inputs to increase support from various sources. The policy recommendations are a continuous process – not the least because often the policy processes are time-consuming – and will continue until the end of the project.

In the following chapters, the activities of the partners during the first half of the project are described and illustrated for the different levels and instruments.

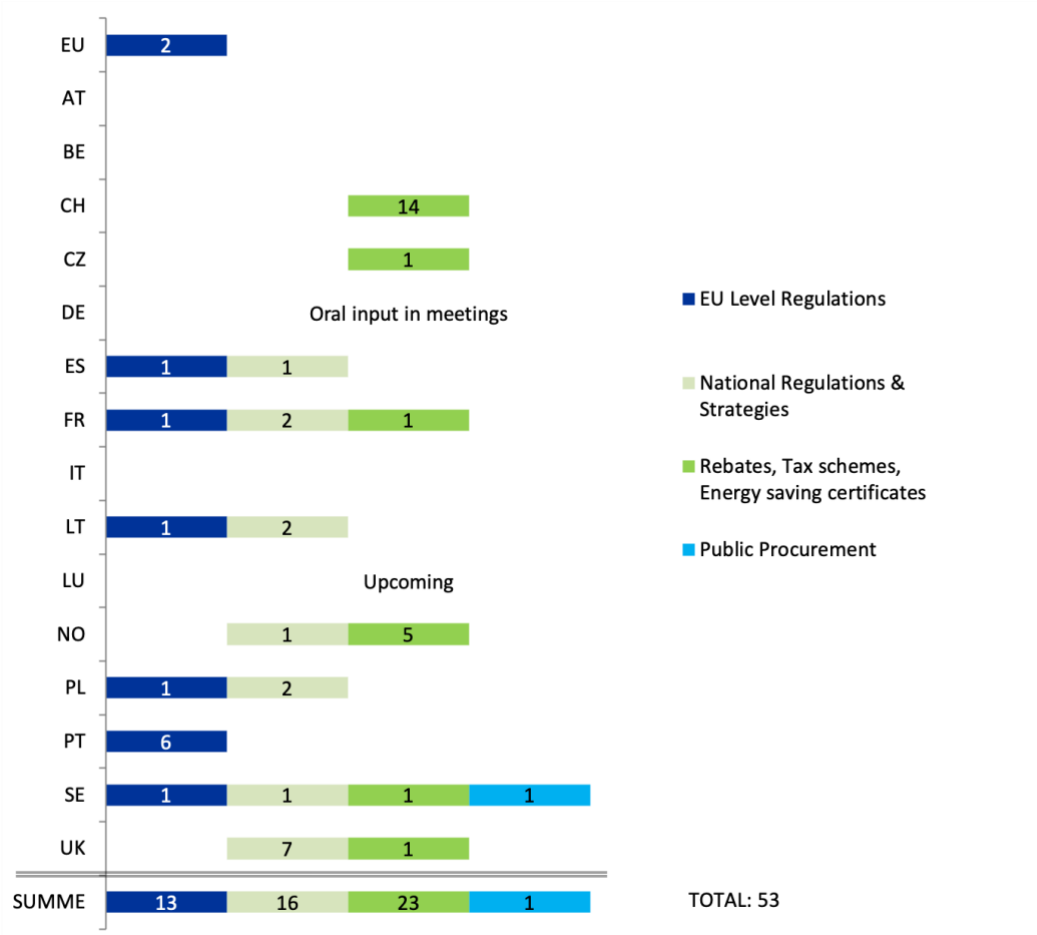
2 General overview

All partners have identified potentials for policy recommendations as well as appropriate partnerships either for technical support or communication channels. As the success of policy activities depends on audience and contacts with the right decision makers, such partnerships are often vital to make input heard.

Policy input can primarily be given where new policy instruments are being designed or existing instruments are being reviewed and updated. As such, the timing and topic of opportunities cannot normally be decided or influenced by HACKS partners. During the last year, when the Corona virus pandemic dominated the political landscapes, governments have reacted very differently with regards to the economy. While some have postponed previously scheduled regulations with regards to lowering energy consumption or CO_2 emissions, others have started or prolonged rebate programmes targeting efficient appliances in the hopes of giving the economy a boost while at the same time accelerating market transformation.

As such, five partners have not yet disseminated official policy recommendations: Austria, Belgium, Germany, Italy and Luxemburg. Most of them, however, have either participated in various policy meetings where they gave oral instead of written input, such as Co2online from Germany, or have brought input to regulations or rebate programmes upcoming later in 2021, such as Eliante from Italy and Oeko-Zenter from Luxembourg.

Table 1: Number and type of HACKS policy recommendations per country in the first half of the project



In other countries, partners have often found themselves providing far more than the foreseen one policy recommendation in the first half of the project due to the multitude of policy instruments currently being employed for HACKS product categories. Table 1 shows for which policy instruments HACKS partners have submitted recommendation papers in the first 18 months of the project.

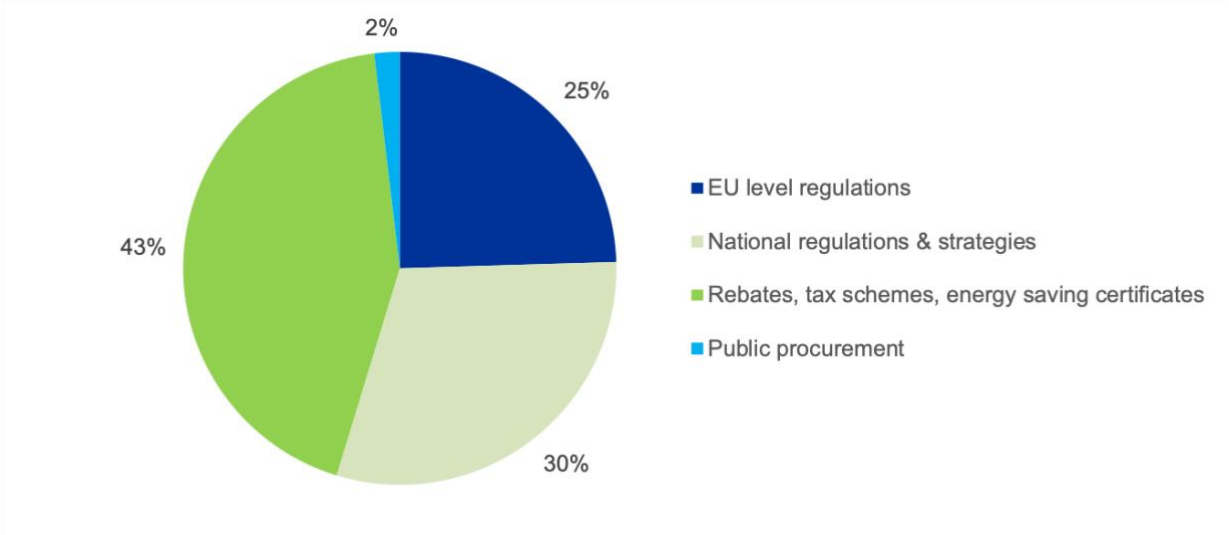
Despite the fact that five countries were not yet able to provide policy recommendations on a national level, a total of 53 policy recommendations has been provided in the first half of the project, exceeding the 32 policy recommendations originally anticipated for the entire project duration.

While not all recommendations are taken up into the final piece of policy regulation or other instrument by the respective decision makers, many of the already submitted recommendations were at least partially successful. For some, the policy process includes many steps such as studies and is still ongoing; an example of this is the European f-gas regulation.

Partnerships with large European organizations such as ECOS or Coolproducts have proven advantageous as large campaigns give more weight to the issues raised, which are thus amplified for the policy makers and general public. Partners used such collaborations mainly for input to European level regulations.

How recommendations are distributed in terms of topic is of interest. The majority of recommendations focus on financial schemes, including rebates, tax schemes and energy saving certificates, which represent about 43% of the 53 policy recommendations, while input to regulations and strategies on the European or national level correspond to 25% respective 30%. This diversification of recommendations as shown in Figure 1 is a good indicator that HACKS partners aim to support policy stakeholders in accelerating market transformation through all instruments at hand.

Figure 1: Distribution of HACKS policy recommendations by total number per type



It is expected that the input into policy activities will remain on a high level and that exchange between partners about best practice examples will amplify the impact. As many governments initiate strategies to boost the economy in the wake of the Corona virus pandemic, this presents a unique opportunity to ask decision makers to devise the concepts in such a way that they positively influence the market towards energy efficiency and sustainability.

3 Policy recommendations submitted centrally for EU level

While partners submit their policy recommendations to national policy makers and organizations, Topten.eu as central organization has established high credibility and reliability over the last decades to its inputs to European legislation directly to the regulatory committees and to the European Commission. Topten.eu serves as evidence on the state of the market, providing benchmarks in the form of data for best available technologies (BAT) and assessing the appropriateness of the ambition of future minimum energy performance standards (MEPS).

Two HACKS inputs were provided through Topten.eu in the first half of the project.

3.1 Comfort fans

In September 2019, the policy officer in charge of the "**Ecodesign and Energy Labelling Consultation Forum on Air Conditioners and Comfort Fans (Review)** starting on 09.09.2019" asked for information on BAT for comfort fans on the European market. The goal was to set benchmarks for the regulation.

Figure 2: The number of comfort fans in Europe is increasing rapidly

Feedback was provided in the form of the product list of most efficient comfort fans on Topten.ch, at that time containing 111 models (with an additional 36 variant products), and the Topten selection criteria for most efficient products. The selection criteria differentiate between the five different types of comfort fans (see Table 2 below). The data of the comfort fans was declared according to Regulation (EU) No. 206/2012 with the values declared according to IEC 60879. The product list was shortly thereafter added to Topten.eu (https://www.topten.eu/private/products/comfort_fans) and continuously updated to serve as further reference to policy makers.

Table 2: Topten selection criteria for comfort fans by type, setting min. efficiency index values (corresponding to service value (m^3/min)/W; the higher the index the more efficient the appliances)

Tower fan	min. 0.45
Table fan	min. 0.80
Floor fan	min. 0.80
Standing fan	min. 1.00
Ceiling fan	min. 2.75

Topten.eu has been made aware that **environmental dumping is taking place in Europe** where the comfort fans that are being exported from the manufacturing countries have a lower energy efficiency performance than the domestic minimum energy performance in place (e.g. mandatory MEPS in China and a voluntary scheme in India). With 25 million units sold in the EU in 2015 and numbers increasing dramatically, the need for the European Union to set MEPS as well as energy label for these products is made more obvious than ever. Topten.eu has **submitted abstracts** on this topic to the EEDAL and eceee conferences in 2021.

3.2 F-Gas regulation

The **European F-Gas regulation** is seen as an international example of a best practice in tackling the reduction of F-Gas. The regulation goes even further by setting a phase-down schedule until 2030 that are more ambitious than the one proposed by the Kigali Amendment[1] and this even before the Kigali amendment was agreed upon in 2016. The F-Gas regulation showed the international community that it is technically possible to move faster than what is proposed in the Kigali Amendment.

The **current review** of this European regulation affects all stationary air conditioning, making it highly relevant for HACKS in terms of GHG emissions. The **public consultation feedback period** was open from 15 September to 29 December 2020. Topten.eu provided feedback on past successes and future potentials of the regulation on the official website, using the provided online template.

Recommendations focussed on scope and stringency of the regulation, promotion of training and servicing for natural refrigerants and coordinated policy making with energy efficiency.

The next step is the Commission adoption, planned for the fourth quarter of 2021 and including further feedback options.

[1] The **Kigali Amendment** to the Montreal Protocol is an international agreement to gradually reduce the consumption and production of hydrofluorocarbons (HFCs)

4 Policy recommendations submitted by partners

As national regulations and financial schemes are at times connected through government strategies, the activities of each partner are presented in this chapter for each country rather than typology.

4.1 Policy recommendations by Bush Energie (Switzerland)

FINANCIAL TOOLS: REBATES

Rebate implementation: EWZ is an energy utility of the city of Zurich, and is obligated by law to increase energy efficiency amongst their customers. As part of their strategy 2000-Watt-Society, they have commissioned Bush Energie to implement a rebate programme for them. One of the eight categories are the HAC category comfort fans. Negotiations are currently taking place about expanding the programme to include heat pump water heaters.

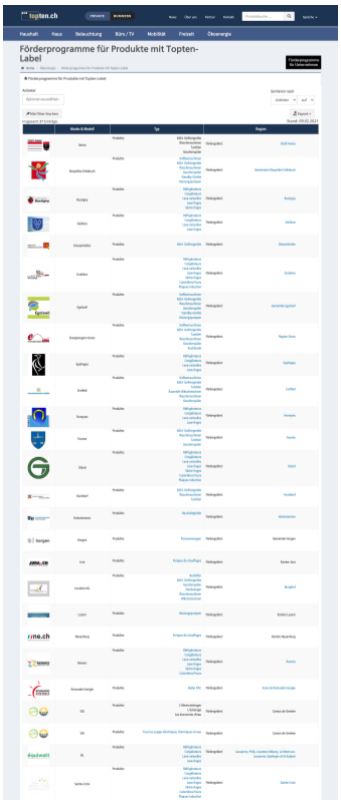
Results: Only the most efficient appliances that comply with the Topten criteria are eligible to receive subsidies of 20 CHF per appliance from the programme. The programme started at the end of 2019 and is open-ended. Until February 2021, it has had more than 210 participants, saving 1'100 MWh over the lifetime of the purchased products.

Documentation: Submission form on Topten.ch/ewz for rebate programme

Rebate recommendations: 13 regional or local rebate programmes for HAC products base their product selection on Topten recommendations.

Results: Many communities focus their climate strategies on promoting efficient heating technologies, subsidizing primarily heat pumps, circulation pumps and water heaters.

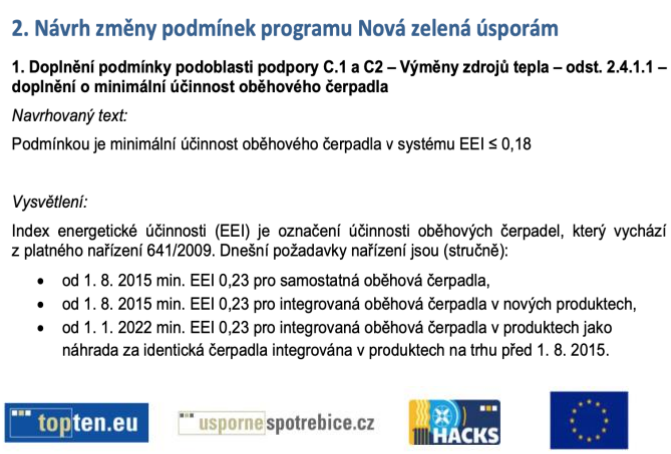
***Documentation*:** Programme list on Topten.ch and SIG (Geneva utility company) programme



4.2 Policy recommendations by SEVEn (Czech Republic)

FINANCIAL TOOLS: REBATES

Rebate recommendations: The New Green Savings Programme of the Czech Ministry of the Environment is administered by the State Environmental Fund of the Czech Republic. Its subsidy programme focused on energy savings in family houses and apartment buildings: complex or partial thermal insulation, construction of houses with very low energy intensity, environmentally friendly and efficient use of energy sources and renewable sources of energy. In 2021, it is the only subsidy
programme for the residential sector in the Czech Republic.



2. Návrh změny podmínek programu Nová zelená úsporám

1. Doplnění podmínky podoblasti podpory C.1 a C2 – Výměny zdrojů tepla – odst. 2.4.1.1 – doplnění o minimální účinnost oběhového čerpadla

Navrhovaný text:

Podmínkou je minimální účinnost oběhového čerpadla v systému EEI ≤ 0,18

Vysvětlení:

Index energetické účinnosti (EEI) je označení účinnosti oběhových čerpadel, který vychází z platného nařízení 641/2009. Dnešní požadavky nařízení jsou (stručně):

- od 1. 8. 2015 min. EEI 0,23 pro samostatná oběhová čerpadla,
- od 1. 8. 2015 min. EEI 0,23 pro integrovaná oběhová čerpadla v nových produktech,
- od 1. 1. 2022 min. EEI 0,23 pro integrovaná oběhová čerpadla v produktech jako náhrada za identická čerpadla integrována v produktech na trhu před 1. 8. 2015.

Recommendations:

1. First minimal efficiency requirements for circulation pumps to qualify for subsidies (EEI 0.18, HACKS criteria)
2. Tightening criteria for solid fuel boilers (HACKS criteria; previously used Ecodesign criteria 1-2 years in advance)
3. Tightening criteria for solid fuel local space heaters (HACKS criteria; previously used Ecodesign criteria 1-2 years in advance)

Results: The proposed criteria set has been sent to decision maker (Mr. Nix) in December 2020. Mr. Nix confirmed that they will use the criteria.

Documentation: Extract from the recommendation paper

4.3 Policy recommendations by co2online (Germany)

NATIONAL LEVEL: STAKEHOLDER MEETINGS & WORKSHOPS

Policy Recommendation: Based on several contemporaneous campaigns, events and projects, co2online has contributed to national and regional policy projects. Furthermore, co2online works together with the association DENEFF (Deutsche Unternehmensinitiative Energieeffizienz e.V./ German initiative for energy efficient companies) to articulate political interests in form of statements and political groundwork.

Example: Discussion about regional subsidy programmes for new heating technologies at the Event “Berlin spart Energie” – involving Berlin senate administration, 11/11/2020

Results: No official policy paper has been submitted

Documentation: https://www.berlin-spart-energie.de/veranstaltung/heizung-tauschen-und-mehr-berlin-wird-aktiv-118.html

4.4 Policy recommendations by ECODES (Spain)

EU LEVEL: F-GAS REGULATION

Policy Recommendation: Position paper on review of European F-Gas regulation in cooperation with EIA, EEB and ECOS: Attendance of European Commission-Public consultation (27/04/2020) and submission of papers for Public consultation (20/04/2020), Inception Impact Assessment (07/09/2020) and Public consultation (29/12/2020).

Recommendations:

1. Promoting compliance
2. Accelerate phase down and new technologies

Results: Review ongoing

Documentation: "NGO comments on Briefing Paper: HFCs and H FC alternatives in split air conditioning systems", "Strengthening the F-Gas Regulation to Address Hydrofluorocarbons and Sulphur Hexafluoride"


Recommendation: Require Member States to ensure the establishment of EPR schemes for HFCs that meet certain minimum requirements, to be detailed in the legislation with further rules adopted via implementing or delegated acts.

Inspection and Enforcement. As in other EU legislation, Member States should carry out regular inspections on relevant market actors based on an EU risk-based targeting mechanism.[xx] Moreover, the F-Gas Regulation suffers from a problem of insufficient market surveillance, raising the need for an EU-wide coordination policy in order to standardise procedures, rationalise costs and resources and promote timely enforcement, among other purposes.

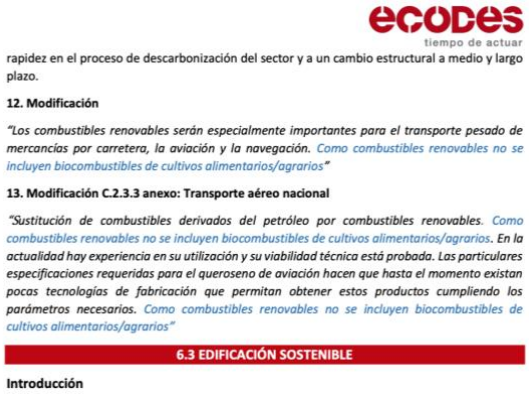
Recommendation: Establish minimum inspection requirements and an EU risk-based targeting mechanism to assist Member States with carrying out inspections, in addition to adopting an EU-wide market surveillance and coordination policy for the F-Gas

NATIONAL LEVEL: DECARBONISATION STRATEGY 2050

Policy Recommendation: ECODES submitted a recommendation to the Spanish Ministry of Ecology Transition and Rural Development for the public consultation on the Long-Term Decarbonisation Strategy 2050.

Recommendations:

1. Chapter 6.5.3 & Annexes C5.3 and C5.3.3 related to F-Gases
2. Accelerate phase down of high GWP and HFC refrigerants and penetration of new technologies


ecodes
tiempo de actuar

rapidez en el proceso de descarbonización del sector y a un cambio estructural a medio y largo plazo.

12. Modificación

"Los combustibles renovables serán especialmente importantes para el transporte pesado de mercancías por carretera, la aviación y la navegación. Como combustibles renovables no se incluyen biocombustibles de cultivos alimentarios/agrarios"

13. Modificación C.2.3.3 anexo: Transporte aéreo nacional

"Sustitución de combustibles derivados del petróleo por combustibles renovables. Como combustibles renovables no se incluyen biocombustibles de cultivos alimentarios/agrarios. En la actualidad hay experiencia en su utilización y su viabilidad técnica está probada. Las particulares especificaciones requeridas para el queroseno de aviación hacen que hasta el momento existan pocas tecnologías de fabricación que permitan obtener estos productos cumpliendo los parámetros necesarios. Como combustibles renovables no se incluyen biocombustibles de cultivos alimentarios/agrarios"

6.3 EDIFICACIÓN SOSTENIBLE

Introducción

Results: Process ongoing

Documentation: Position paper (13 pages)

4.5 Policy recommendations by Guide Topten (France)

EU LEVEL: F-GAS REGULATION

Policy Recommendations: Guide Topten amplified the impact of the Topten.eu policy recommendation on the review of the European F-Gas regulation by adjusting and submitting their own paper, based on the Topten.eu submission.

Results: Review ongoing

Documentation: Submission on official review website

NATIONAL LEVEL: ALIGNMENT ON ENERGY LABELLING

Policy Recommendations: Guide Topten was invited by ADEME (French Energy Transition Agency) to join a meeting on hot water production to share its experience on energy labelling policy (11/2020): heat-pump water heater industry and solar water heater industry were comparing results of a new measurement protocol.

Results: Oral dissemination of best practice examples

Documentation: No written policy paper was submitted

Policy Recommendations: Five Meetings with ADEME in 2020, presenting and discussing the methodology for selecting best products of air conditioners and heat-pumps in order to reach a common understanding.

Results: ADEME has a strong presence in the French context so the alignment of the positions increases the chance that the HACKS information is disseminated by the agency.

Future input from HACKS on the use of air conditioners for heating purposes – currently not covered by the regulation – was requested.

Documentation: Selection criteria for air conditioners and heat pumps on guidetopten.fr

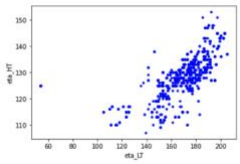
FINANCIAL TOOLS: ENERGY SAVING CERTIFICATES

Policy Recommendations: Regarding heat-pumps, Guide Topten suggested to amend the energy saving certificates in order to subsidize models that have the best performances for both use patterns: at 55°C and at 35°C. Currently, manufacturers tend to declare the heat pump performance for only one use-pattern (the most favourable for each product) but the HACKS research - shared with ADEME - shows that there is no correlation for the performance at the two temperatures.

For air conditioners, an analogous suggestion was made that energy saving certificates be granted specifically to products providing consumption data for both cooling and heating functions to avoid subsidizing the installation of poor performing products in their heating function.

Results: Unlikely to succeed but the idea was submitted

PAC air/eau: Efficacités saisonnières



- Une machine performante en basse température ne l'est pas forcément en haute température

PAC air/eau: liste retenue

	Condition	Nb. produits	Nb. marques
	eta_LT>=190	39	14
	eta_HT>=140	27	9
Liste retenue →	eta_LT>=190 ou eta_HT>=140	49	14
	eta_LT>=185 ou eta_HT>=140	95	22
	eta_LT>=190 ou eta_HT>=135	108	27

- Noter que la liste retenue est un peu plus courte que celle proposée dans dernière présentation, car certains doublons sont supprimés

Documentation: Data analysis presentation

4.6 Policy recommendations by LNCF (Lithuania)

NATIONAL LEVEL: RECOVERY AND RESILIENCE FACILITY (RRF) PLAN

Policy Recommendations: The Lithuanian Energy Ministry elaborates the Recovery and Resilience Facility section "Green Transformation", which covers mainly electricity production and transport sectors, to be submitted to the EU Commission. LNCF recommended to include the following:

1. Scope: include small PV installations and PV batteries
2. Introduce the concept of combined energy systems, operated by smart control (decentralized accumulator)
3. Include strategies for modernization of public buildings & multifamily houses
4. Provide more cost-benefit assessments (regional parameters)

LIETUVOS NACIONALINĖ VARTOTOJŲ FEDERACIJA

2021 02 10 Nr. 21/02 M-01

Energetikos ministerijai

Pastabos RRF krypčių projektui AEI elektros energetikos sektoriuje

Dėkojame už pakvietimą ir galimybę dalyvauti dokumento projekto aptarime nuotoliniu būdu vasario 9 d. Tačiau, susirinkus apie 200 dalyvių, konstruktyvi diskusija tokioje didelėje auditorijoje yra apsunkinta. Todėl teikiame papildomas pastabas ir pasiūlymus, kurių nepateikėme aptarimo metu.

Results: Process ongoing

Documentation: Recommendation letter to Lithuanian Energy Ministry

NATIONAL LEVEL: ELECTROTECHNICAL GOODS & HOUSING RENOVATIONS

Policy Recommendations: On 04/02/2020 LNCF participated in a discussion about quality of electrotechnical goods, organized by Lithuanian Justice minister E. Jankevicius. Main discussion points were concerns that the Lithuanian market of electrotechnical goods might present devices of poorer quality than those in the corresponding markets in Western Europe, including aspects of energy efficiency.

Roko Lukoševičiaus / 15min nuotr./Teisingumo ministerijoje vyko pasitarimas-diskusija dėl galimos dvigubos kokybės prekių

Results: It was decided to carry out a special market survey with focus on device quality and energy efficiency. LNCF and other consumer organizations were asked to assist the ministry in this study.

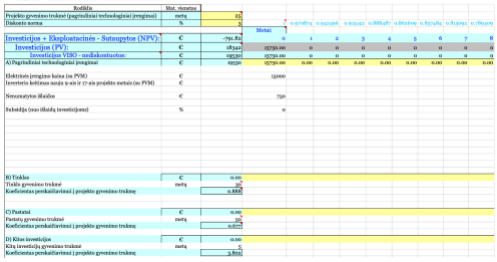
Documentation: Broadcast on main TV news channel “Panorama”, articles with interviews

Background: Since 2005, government subsidies (Housing Energy Efficiency Agency) covered 30-40% of costs for large multifamily housing renovations. The supported modernizations resulted in reducing by half the energy for heating. To date, about 3’000 multifamily houses out of 35’000 were renovated in line with this approach, only about 10% of the whole building stock in need of modernisation, as costs are still unaffordable to many. The programme is being expanded to include smaller renovations as well.

Algirdo g. 25, Vilnius. Šildymo stovas rūsyje. Reguliuojančios armatūros nėra, todėl balansavimas neįmanomas. Stovas rakinamame sandėliuke.

Algirdo g. 25, Vilnius. Vienvamzdė šildymo sistema. Radiatorius turi tik uždaromąją armatūrą, termostatas neįrengtas. Nuo senų laikų palikęs trieigis ventilis, kurį bandyti judinti rizikinga.

2 lapas. Finansinis įvertinimas.



Policy Recommendations: Create catalogue of measures and results for easier implementation.

Results: HEEA mandated LNCF to create a catalogue of technical means and technologies, including HACKS criteria (created 07/-09/2020).

Documentation: Catalogue

4.7 Policy recommendations by Naturvernforbundet (Norway)

NATIONAL LEVEL: FOSSIL ENERGY PHASE OUT BY 2040

Policy Recommendations: Despite the fact that Norway's power production is virtually free of oil, coal and gas, it is heavily dependent on fossil energy. This report uncovers how Norway burns about 170 TWh of fossil energy annually, which is significantly more than all Norwegian hydropower and wind power production combined. In the report “Fossil-free Norway”, Naturvernforbundet shows how Norway can get rid of fossil energy by 2040. In the report, energy efficiency plays a key role in achieving the goal without jeopardizing important natural values.

Results: Report was sent to government parties, decision makers and public media as reference and discussion starter.

Documentation: Report “Fossil Free Norway” (10/2019)

FINANCIAL TOOLS: REBATES & GRID FINANCING

Naturvernforbundet
Friends of the Earth Norway

Policy Recommendations: Already in the spring of 2020, Naturvernforbundet and 15 other organizations communicated to the Norwegian Parliament, the Minister of Climate and Environment Sveinung Rotevatn and Enova (NO government enterprise for promotion of environmentally friendly production and consumption of energy) that the support rates for the Enova grant for households in 2020 could be doubled. In June, 22 organizations called for investment in energy efficiency in the government's Corona crisis package. For several years, payments from Enova to Norwegian households have been well below the minimum amount set a side at NOK 250 million (24 mio. €), and a number of companies in the affected industries are now struggling financially. The letter focuses on the need for Enova to reverse its planned cuts in the financial support for several popular energy measures from 1 July 2021.

Results: Unlikely to succeed. However, the campaign increased the climate grant by 50 mio. NOK in 2020.

Documentation: Letter to the Norwegian Parliament, the Minister of Climate and Environment Sveinung Rotevatn and Enova (12/2020)

Policy Recommendations: As a response to the decision by Enova to phase out or cut its rebate programmes for heat pumps, balanced ventilation and electricity production in homes from 1 April 2020, Naturvernforbundet and 10 other organizations sent a letter to the Minister of Climate and Environment.

Results: The cuts were postponed until 1 July 2021. Further long-term strategies are needed: Several thousand employees are currently employed in companies that work with installing heat pumps, ventilation systems, solar energy systems and energy efficiency. These are jobs in small and large companies across the country. Because of the Covid pandemic and low electricity prices these companies are now threatened with layoffs and bankruptcy.

Documentation: Letter to Minister of Climate and Environment Sveinung Rotevatn (03/2020)

Policy Recommendations: In a letter with 22 organizations, Naturvernforbundet points out that small businesses that work with heat pumps, solar energy systems and energy efficiency have not been included in the Norwegian Green financial package. Because many companies in the building industry already are contributing to the green shift, the letter argues that these industries don't need conversion funding, but support to survive the Covid recession. It argues that energy measures in buildings provide a rapid employment effect, and contribute to triggering private capital for investments - something that is absolutely necessary in the transition to a low-emission society, and asks the Norwegian government to look to – and learn from the EU. The EU invests heavily in energy efficiency as part of the restructuring package after the corona crisis, and has set aside NOK 1,000 billion (95,730 billion €) annually for this purpose. The letter points out that Norway should do the same.

Finanskomiteen
finans@stortinget.no

Oslo. 05. juni 2020

Til Stortinget v/finanskomiteen
Kopi: Stortingets energi- og miljøkomite, Klima- og miljødepartementet

As a second issue, it is pointed out that regulation to deal with buried oil tanks is missing in the policy frame (while oil heating is now forbidden).

Results: Further regulation on the treatment of buried oil tanks was declined and the issuing of practical recommendations referred to the municipalities. Adjustments to the Green financial package have not been made.

Documentation: Letter to Norwegian Parliament (06/2020)

Policy Recommendations: With central consumer organizations, environmental organizations and business organizations Naturvernforbundet requests a meeting with the Minister, strongly recommending a new model for the grid rent financing system that takes utilization into account. The Norwegian Regulatory Authority for Energy has sent proposals for requirements for the design of the grid rent for consultation. The aim of the proposal is, among other things, to contribute to an efficient utilization of the power grid. The senders of the letter, however, believe that the proposal in its current version will give little motivation to the reduction in the consumption of energy and power.

Results: Unlikely so succeed. Strong opposition from grid providers and building industry who want the option of providing less complex, low-cost construction and take issue with additional training for installers.

Documentation: Letter to Norwegian Minister of Petroleum and Energy Tina Bru (04/2020)

Policy Recommendations: Within the scope of the changes to the grid rental structure proposed by the Energy Regulatory Authority (RME), Naturvernforbundet recommends the inclusion of incentives to reduce energy consumption and grid development. In the Norwegian Government platform, it has been decided that 10 TWh of energy reduction should be realized in buildings by 2030. In order to take into account energy poverty, Naturvernforbundet wants a low fixed price and a higher price based on energy consumption, with a pricing of power, for example through a higher price in the hours with the greatest grid loads. Naturvernforbundet were sceptical that several different models could be set up, and have argued that the model should be designed as consumer friendly as possible.

Results: Open. Elections in autumn 2021 might induce further change.

Documentation: Letter to Norwegian Energy Regulatory Authority (05/2020)

4.8 Policy recommendations by FEWE (Poland)

EU LEVEL: F-GAS REGULATION

Policy Recommendations: FEWE amplified the impact of the Topten.eu policy recommendation on the review of the European F-Gas regulation by adjusting and submitting their own paper, based on the Topten.eu submission.

Results: Review ongoing

Documentation: Submission on official review website

NATIONAL LEVEL: ENERGY EFFICIENCY ACT & HYDROGEN STRATEGY

Policy Recommendations: FEWE submitted recommendation to the Polish Energy Efficiency Act and several other acts (UC41), implementing Directive 2018/2002/EU, during the public consultation on the draft amendment. Input focuses on:

1. The necessity of extending the regulations on energy efficiency improvement contracts (ESCO companies)
2. Introducing additional alternative measures (apart from energy efficiency certificates) to achieve the target set by EU regulations
3. Establishing new and verify the existing rules for assessing the level of savings achieved.

Ministerstwo Klimatu
ul. Wawelska 52/54
00-922 Warszawa

10 września 2020

W odpowiedzi na ogłoszone na stronie RCL w czwartek dnia 20 sierpnia 2020 r. zaproszenie do konsultacji publicznych dotyczących projektu zmiany ustawy o efektywności energetycznej oraz niektórych innych ustaw (UC41), przedkładam poniższe propozycje zmian. Propozycje zostały opracowane przez FEWE w porozumieniu z Komisją ds Lokalnej Polityki Energetycznej działającą przy Śląskim Związku Gmin i Powiatów, Metropolią Górnośląsko-Zagłębiowską, Urzędem Marszałkowskim Województwa Śląskiego Poniższe Propozycje stanowią uzupełnienie uwag wypracowanych w ramach stowarzyszenia SAPE Polska, przesłanych osobnym pismem.

z poważaniem,

Szymon Liszka
Prezes Zarządu

Results: Status open

Documentation: Submission to Polish Climate Ministry (10/09/2020)

Policy Recommendations: Participation in public consultations of the project "Polish Hydrogen Strategy until 2030 with a perspective until 2040". FEWE took part in the consultations as a member of the Climate Coalition. Comments were submitted to the Ministry of Climate and Environment on 10/02/2021. The assumptions of the strategy relate to the three sectors of hydrogen use - energy, transport and industry, as well as to its production, distribution and the necessary legal changes and financing.

Results: Process ongoing

Documentation: Participation in public consultation

4.9 Policy recommendations by Quercus (Portugal)

EU LEVEL: F-GAS REGULATION & NGO GROUP CAMPAIGNS

Policy Recommendations: Quercus amplified the impact of the Topten.eu policy recommendation on the review of the European F-Gas regulation by adjusting and submitting their own paper, based on the Topten.eu submission.

Results: Review ongoing

Documentation: Submission on official review website

Policy Recommendations: Regular stakeholders opinion requests made by Directorate-General of Energy and Geology (DGEG) regarding "Ecodesign and Energy Labelling Consultation Forum on air conditioners and comfort fans (review) starting on 09/09/2019" answer sent by email on 04/09/19.

Results: No feedback available

Documentation: Submission via mail to DGEG (04/09/2019)

Policy Recommendations: Regular stakeholders opinion requests made by Directorate-General of Energy and Geology (DGEG) regarding "Ecodesign and Energy Labelling Consultation Forum on local space heaters (review) starting on 10/09/2019" answer sent by email on 04/09/19 together with document produced by ECOS/EEB/Coolproducts "Position on the energy labelling of electric heaters".

Results: No feedback available

Documentation: Submission via mail to DGEG (10/09/2019), Position paper with ECOS/EEB/Coolproducts

Policy Recommendations: Group campaign with Coolproducts and Right to Repair Europe "Covid-19 recovery plan calls for consumer savings and environmental commitments". NGO campaign including press releases, social media dissemination, direct report to national authorities.

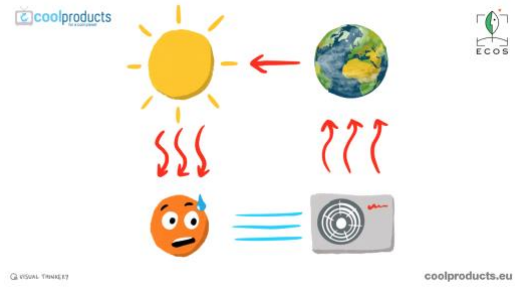
Results: No feedback available

Documentation: Submission via mail to DGEG (01/05/2020), article on Topten.pt

Policy Recommendations: Group campaign with Coolproducts "A common energy label for air conditioning systems". NGO campaign including press releases, social media dissemination, direct report to national authorities (DGEG as responsible party for Portuguese policy position).

Results: No feedback available

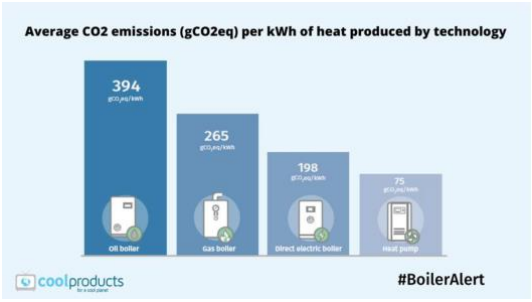
Documentation: Submission via mail to DGEG (09/07/2020) together with document produced by Coolproducts, article on Topten.pt



Policy Recommendations: Group campaign with ECOS/Coolproducts "Five years left - How Ecodesign and Energy Labelling can decarbonise heating ". NGO campaign including press releases, social media dissemination, direct report to national authorities (DGEG as responsible party for Portuguese policy position).

Results: No feedback available

Documentation: Submission via mail to DGEG (10/12/2020) together with document produced by ECOS/Coolproducts, article on Topten.pt



4.10 Policy recommendations by Naturskyddsföreningen (Sweden)

EU LEVEL: F-GAS REGULATION

Policy Recommendations: Naturskyddsföreningen amplified the impact of the Topten.eu policy recommendation on the review of the European F-Gas regulation by adjusting and submitting their own paper, based on the Topten.eu submission.

Results: Review ongoing

Documentation: Submission on official review website

NATIONAL LEVEL: ASSOCIATIONS PELLETS AND WOOD STOVES

Policy Recommendations: Naturskyddsföreningen attempted to unify definitions of "energy efficient appliances" with Brasvärmeföreningen ("The Stove Heating Association") and Pelletsförbundet ("The Pellets Association"). The recommendation aimed at coordinating in order to match the HACKS selection criteria and the associations' definition of "most energy efficient and sustainable products" in their policy recommendations.

Results: An agreement could not be reached. Both organisations' main objective is to advocate the use of their respective equipment/fuel altogether, and as such they are unwilling to put certain products above other, even when energy performance and emissions clearly differed.

Documentation: No written paper was submitted

FINANCIAL TOOLS: ENERGY SAVING CERTIFICATES

Policy Recommendations: Naturskyddsföreningen conducted a comprehensive three year study (2018-2020) called "Casablanca" to analyse whether a scheme of energy saving certificates – to date not practiced in Sweden – have the potential to contribute to additional or more ambitious energy saving measures than would be the case without subsidies. Other stakeholders were Göteborg Energi (energy company), Göteborg University, Sustainable Innovation (innovation company), Chalmers University of Technology and Profu (energy analysis company).

The study examines energy saving certificates as a complimentary method, using Topten/HACKS criteria both as an example and as an active tool for implementing energy savings in various areas, among homeowners and public and private real estate companies, as well as stricter requirements concerning the most energy efficient HAC equipment and technologies.

The results were somewhat inconclusive regarding the additional saving potential. However, they demonstrate the usefulness of energy saving certificates regarding peak demand reduction in both electricity and heat grids, balancing short-term requirements regarding usability, cost efficiency and peak demand reduction.

Results: First version was compiled by Göteborg University and delivered to Energimyndigheten (Swedish Energy Agency), final version is pending.

Documentation: Draft report of "Casablanca" project

PUBLIC PROCUREMENT

Policy Recommendations: Energikontor Väst, the regional energy office of western Sweden, currently leads a project formulating electricity procurement policies for Swedish municipalities who have made “climate promises”, promising to only purchase renewable electricity. Naturskyddsföreningen recommends that municipalities should purchase not only renewable but rather specific ecolabelled electricity, having a lower impact on biological diversity as well as climate and other environmental issues.

Results: The official consultation is scheduled for March 2021. The goal is to stimulate more municipalities into making the same “climate promise” and adhering to the new recommendations.

Documentation: The recommendation paper will be submitted to the consultation in March.

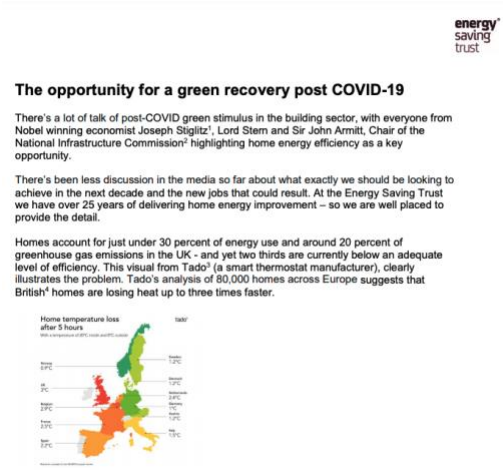
4.11 Policy recommendations by EST (United Kingdom)

NATIONAL LEVEL: TARGETS AND STRATEGIES

Policy Recommendations: On 06/2020 EST published a report ‘Our view of the opportunity for a green recovery post Covid-19’. This included the recommendation for the UK that a target of 3.3 million (cumulative) heat pumps by 2030 was an appropriate level of ambition.

Results: Report was sent to relevant stakeholders and published as reference and discussion starter

Documentation: Published report



Policy Recommendations: In 07/2020 EST posted a blog about “Future Heat”, including their evaluation and suggestions on current UK energy policy and targets. This included statements about the new grants available from the UK government.

Results: Published as reference and discussion starter for stakeholder meetings.

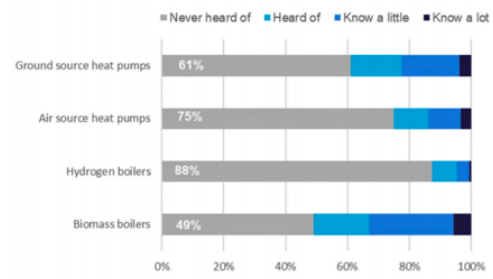
Documentation: Blog post and announcement

Policy Recommendations: In 09/2020 EST UK government put out a 'Call for Evidence' requesting that key stakeholder provide feedback with available evidence where relevant on the implementation of Ecodesign legislation and standards on a number of product categories including several heating products. EST responded to this focussing on BAT products, saving potential and the current market situation.

Results: Process ongoing

Documentation: Policy paper (09/2020, 40 pages)

Figure 3: Levels of awareness and knowledge of low-carbon heating technologies



Base: British population aged 18+
[Biomass boilers (2,906); Hydrogen boilers (2,907); Air source heat pumps (2,906); Ground source heat pumps (2,905)]

Figure 2 - source: BEIS SEE COMPLETE DOCUMENT PROVIDED VIA EMAIL

Hybrid Heating Systems can combine the efficiency of a heat pump alongside an existing boiler installation, and as such provide a useful bridging technology towards low-carbon heating for consumers who are familiar with gas boilers, and may desire a less disruptive installation. The heat pump component can often provide the majority of heating needs, particularly space heating, before a gas boiler component would need to be called upon.

Low/zero-carbon fuels: Use of hydrogen in the gas grid would have an advantage of reducing the need for significant infrastructure changes, but currently hydrogen cannot be consider a zero carbon fuel, as the majority is produced from fossil based sources (Friends of

Policy Recommendations: Consultation on improving the energy performance of the private rented sector: input on technologies, efficient solutions, fair distribution of costs and alignment with overall government strategy.

Results: No feedback available

Documentation: Policy paper (12/2020, 16 pages)

Chart 1: Percentage of properties reaching EPC C (EER C) at each cost cap by starting Band, BEIS modelling

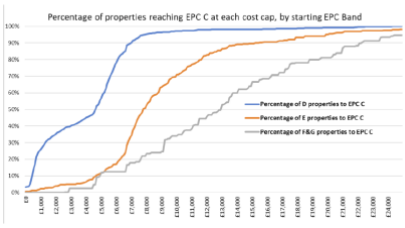


Table 12: Estimated average costs and benefits to landlords from amending the Regulations (2018 prices)[52]

Average (mean) cost per property with measures installed	£5,000	£10,000	£15,000	£15,000 CC
Average capital cost for those achieving the required standards or above	£2,200	£4,400	£4,900	£5,300
Average cost for those making as much progress as possible towards the required standard	£2,500	£5,800	£7,400	£9,700
Average landlord hidden cost per property	£170	£240	£260	£290
Average property value differential	£3,100	£5,400	£6,100	£5,600
Increase in rent received in 2028 (low)	£0	£0	£0	£0
Increase in rent received in 2028 (central)	£110	£220	£260	£230
Increase in rent received in 2028 (high)	£230	£390	£410	£410

Policy Recommendations: Environmental Audit Committee technological innovations inquiry into heat pumps: input on policy strategies, technologies and efficient solutions. Targets of deployment are recommended and analysed.

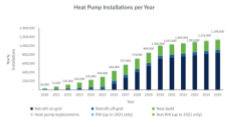
Results: No feedback available

Documentation: Policy paper (11/2020, 11 pages)

Building the supply chain whilst reducing reliance on subsidy

The Heat Pump Association (HPA) suggests[7] the following deployment trajectory to build up to one million units per year. This trajectory results in about 3.3 million cumulative units by 2030 (in line with the CCC's 'Further Ambition' scenario in their Fifth Carbon Budget[8]).

Fig. 2: HPA deployment trajectory scaling to 1 million units per year by 2030 (HPA, 2020)



This could be achieved by focussing on the following areas:

A. **New build**: Heat pumps in new-build have a lower capital cost as the lower heat demand means a smaller, lower cost unit is sufficient and other changes often required in retrofit (resizing the heat emitters, changing pipework) can be avoided.

Policy Recommendations: UK government inquiry into decarbonising heat in homes: input on affordability (energy poverty), targets and best available technologies.

Results: No feedback available

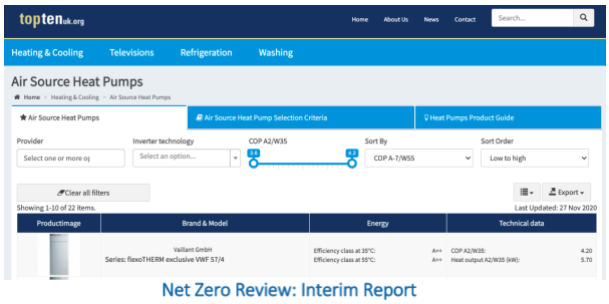
Documentation: Policy paper

Policy Recommendations: For the UK Treasury interim consultation on how to pay for "net zero" (CO_2), EST outlines the importance of heat pumps. A further focus point are policy costs sitting on electricity (the environmental and social levy programme that funds the decarbonisation of power and ECO, other things are financed almost exclusively through the electricity bill which adds around 20% to the unit cost); EST recommends:

1. No new costs should be added to energy bills
2. Current levy programme should ideally be shifted to general taxation (as a fairer way to finance change)

Results: No feedback available

Documentation: Policy paper (01/2021, 10 pages)



Net Zero Review: Interim Report

Energy Saving Trust submission (January 2021)

1. Summary

Energy Saving Trust is the leading, impartial, sustainable energy organisation working closely with UK Government and all three devolved administrations. The focus of our work is achieving net zero carbon emissions in homes, communities and transport.

We welcome this opportunity to comment how the costs of delivering net zero can be fairly allocated across the economy. Our response focusses on the decarbonisation of homes.

Our key point builds on the new finding by the Climate Change Committee (CCC) that if the approach to net zero in homes starts with improving energy efficiency and incorporates a high degree of electrification of heat, then it can deliver lower household energy bills. We therefore strongly support an overarching policy goal of delivering lower consumer bills alongside net zero emissions.

To approaching this, we think there are two key areas of consideration:

A) How the overall investment can be reduced by:
   i) A pathway based on reducing energy demand by improving fabric standards
   ii) Proving policy certainty to investors and markets
   iii) Regulating to deliver net zero outcomes faster

B) A fair transition – how costs and benefits can be distributed fairly by using:
   i) Homeowner self-funding
   ii) Energy bill levies
   iii) General taxation
   iv) Carbon pricing
   v) New borrowing

5 Discussion and Conclusions

As in most countries, more policy processes are currently underway than previously anticipated, the partners are extending much effort to provide policy recommendations in support of policy makers on all levels. Since the product lists of BAT models for multiple HAC categories are published on each country website, based on clear efficiency criteria, the data is freely available and ready to be adjusted in the form of recommendation papers.

The mutual support of HACKS partners and environmental and civil organisations has proven very effective in lending consequence and attention to important issues. Their technical expertise on broader subjects contribute to providing more rounded, comprehensive policy recommendations. Input in the form of expertise in the areas of energy poverty or air pollution is of increasing importance as the topics gain prominence in policy considerations.

In order to reach climate neutrality by 2050, climate strategies must be implemented as soon as possible on all levels of government – from municipal to regional, national and EU levels. The Strategic Plan 2020-2024 by DG ENER lists “Clean, affordable and secure energy” and “Buildings and renovations with the Energy Efficiency First principle” as two of their top three objectives in the European Green Deal. HACKS partners will continue to support this process, especially with focus on the upcoming review of the energy labelling for heating products.

In conclusion, HACKS partners can offer a unique service to policy makers in the form of BAT technologies on each national market along with ready efficiency criteria, supported by a sound overview over European issues though continuous exchange with each other. In the second half of the project, the HACKS partners will continue to focus on all types of policy instruments.