

HEATING AND COOLING
KNOWHOW AND SOLUTIONS



D6.1 – Interim project report summarising the quantitative evaluation of the impacts

Consumer involvement, GHG emission reduction, energy savings, uptake of energy efficient products and services

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HACKS coordinator: ADEME – www.ademe.fr

European portal www.topten.eu/hacks

Project partners and websites

Austria, AEA
www.topprodukte.at

Germany, co2online
<https://topeffizient.de>

Norway, Naturvernforbund
www.besteprodukter.no

Sweden, SSNC
www.toptensverige.se

Belgium, BBL
www.topten.be

Italy, Eliante
www.topten.it

Poland, FEWE
www.topten.info.pl

Switzerland, Bush Energie
www.topten.ch

Czech Republic, SEVEN
www.uspornespotrebice.cz

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www.toptenuk.org

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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:

- 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.
- 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.
- 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 HACKS project includes a continuous task to monitor and evaluate if the project is on track to deliver the expected impact in terms of consumer involvement, Green House Gas (GHG) emission reduction & energy savings as well as the uptake of energy efficient products and services by the end of the project.

All project partners report figures for a set of joint key performance indicators and other relevant indicators covering the implementation of consumer outreach campaigns as well as multiplier outreach campaigns on national levels.

The overall project's impact relies on the main pillars consumer involvement (activities related to web pages and media) as well as stakeholder involvement (activities related to installers, retailers, consumer associations, manufacturers and others) contributing almost evenly to the general targets.

A set of key performance indicators (as described in section 2) includes defined metrics, targets (with breakdown of indicative national targets as applicable) and an indication for which of the main impact levels the parameters are valid for. Beyond that, a number of other parameters mainly used to monitor the level of consumer involvement is specified as well.

This report includes an overview of the progress of KPIs in the reporting period September 2019 to March 2021 for every defined KPI (see chapter 3). The KPIs for on line platforms and media contacts – important for the area of consumer involvement and evaluated as projection for the last year of the project – show promising results. The same view can be taken for the KPIs on stakeholder involvement. The individual targets for the project end have been already met at this stage.

Hence the monitored data supports the assumption that the impact targets will be met at the project end by translating the KPIs to the actual impact evaluation.

The value for consumer involvement is slightly more than 170,000 at this stage exceeding the target by far already. The same verdict is done for the Primary Energy savings with a calculated number of 613.5 GWh.

As a summary, the first half part of the HACKS project was heavily affected by the COVID-19 pandemic, challenging the outreach of the project and consumers perception level for HACKS topics. Nevertheless, the data monitored in the period of September 2019 to March 2021 underlines that the project overall is on good track and the delivery of the project impact as indicated in the Grant Agreement can be seen as very likely.

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Acronyms

HAC: Heating and Cooling

1 Introduction

The HACKS project monitors and evaluates a set of key performance indicators (KPIs) and other relevant indicators corresponding to the various tasks accomplished in the framework of consumer outreach campaign (WP4) as well as multiplier outreach campaign (WP5) on national levels. Even though there is a variety of actions implemented not evenly in all partner countries, all project partners are using the same KPIs and metrics to ensure European wide comparison and evaluation are possible and relevant.

The monitored indicators are used as input parameter for a calculation model supporting the impact assessment on the following levels:

- consumer involvement,
- Green House Gas (GHG) emission reduction & energy savings as well as the
- uptake of energy efficient products and services.

The overall project's impact relies on the following main elements and pillars as described below:

Impact will be generated from	HACKS activities that will be monitored, allowing to verify the impact	Share of impact
Consumer involvement (55 %)	Web pages	40%
	Media	15%
Stakeholder involvement campaign (45%)	Stakeholders (installers, retailers, consumer association, other multipliers)	30%
	Actions targeting manufacturers	15%

Figure 1: Sources of project impact

The calculation model covers a set of basic assumptions (as outlined in the Grant Agreement) including aggregated specific savings (over product lifetime) for each of the main elements mentioned above. This report makes reference to these factors for calculating the savings without replicating the comprehensive justification of these assumptions.

This report serves the purpose of midterm assessment based on monitored data confronted with the assumptions taken regarding the expected impacts half way through the project to see if it is on good track. The data set for evaluation covers the period of September 2019 to March 2021 (project months 1 - 19) and is compared to the individual targets for the KPIs either defined for the last year of the project or accumulative for the entire project period. Details can be found in chapter 2.1.

This assessment report covers three main elements, first the overview of the defined input parameters, second the status of these based on data monitored in the defined period and finally a preliminary impact assessment.

2 Overview of defined input parameters

This section covers the description of the key performance indicators in the narrow sense as defined in the Grant Agreement (first sub chapter) as well as other indicators, which are mainly used to monitor the level of consumer involvement (second sub chapter). The specific metric and target for entire project duration is detailed for each of these parameters. Furthermore, indication is given concerning the source of impact as well as for which of the main levels this parameter is valid for.

2.1 Key performance indicators

KPI 1: Online platforms

Metric	Page views on the HACKS webpage	
Target	900,000 page views in the last year of the project Break down of national targets (indicative): <ul style="list-style-type: none">• 315,000 in AT, CH, DE, FR, IT and UK;• 175,000 in BE, ES and SE• 125,000cin CZ, LT, LU, NO, PL & PT• 80,000from the pan-European platform	
Source of impact	Consumers	
Input parameter for ...		
Consumer involvement	GHG emission reduction & Energy Savings	Uptake of energy efficient products and services
x	✓	x

KPI 2: Media outreach

Metric	Media contacts (on-line, printed, social networks)	
Target	20 million media contacts in the last year of the project	
Source of impact	Consumers	
Input parameter for ...		
Consumer involvement	GHG emission reduction & Energy Savings	Uptake of energy efficient products and services
✓	✓	✗

KPI 3: Manufacturers of HAC Equipment

Metric	Manufacturing groups contacted	
Target	80% of manufacturing groups in last year	
Source of impact	Stakeholders	
Input parameter for ...		
Consumer involvement	GHG emission reduction & Energy Savings	Uptake of energy efficient products and services
x	x	x

KPI 4: Manufacturers of HAC Equipment

Metric	Partnerships with involved manufacturers	
Target	30 involved manufacturers in last year of the project	
Source of impact	Stakeholders	
Input parameter for ...		
Consumer involvement	GHG emission reduction & Energy Savings	Uptake of energy efficient products and services
x	✓	x

KPI 5: Consumer organisations

KPI 6: Partnerships with installers and retailers

KPI 7: Other multipliers

Metric	Partnerships
Target	100 partnerships in the last year of the project (for consumer organisations, installers, retailers and other multipliers together)
Source of impact	Stakeholders
Input parameter for ...	

Consumer involvement	GHG emission reduction & Energy Savings	Uptake of energy efficient products and services
✗	✓	✓

KPI 8: Policy and measures

Metric	Policy and recommendation papers at the EU level	
Target	2 over the project duration	
Source of impact	NA	
Input parameter for ...		
Consumer involvement	GHG emission reduction & Energy Savings	Uptake of energy efficient products and services
✗	✗	✗

KPI 9: Policy and measures

Metric	Policy and recommendation papers at the national and local level	
Target	30 over the project duration	
Source of impact	NA	
Input parameter for ...		
Consumer involvement	GHG emission reduction & Energy Savings	Uptake of energy efficient products and services
x	x	x

KPI 10: Stakeholders contacted

Metric	Stakeholders in contact with the project information
Target	<p>2,250 stakeholders informed over the project duration</p> <p>Break down of national targets (indicative):</p> <ul style="list-style-type: none"> • 225 in AT, CH, DE, FR, IT and UK; • 125 in BE, ES and SE

	• 88 in CZ, LT, LU, NO, PL and PT	
Source of impact	NA	
Input parameter for ...		
Consumer involvement	GHG emission reduction & Energy Savings	Uptake of energy efficient products and services
x	x	x

KPI 11: Stakeholder interviews

Metric	Qualitative interviews providing feedback on their use of the HACKS’ input and tools	
Target	75 interviews over the project duration (5 per country)	
Source of impact	NA	
Input parameter for ...		
Consumer involvement	GHG emission reduction & Energy Savings	Uptake of energy efficient products and services
x	x	x

KPI 12: Case studies

Metric	Case studies for communication purposes At least 30 case studies over the project duration	
Target	30 case studies over the project duration	
Source of impact	NA	
Input parameter for ...		
Consumer involvement	GHG emission reduction & Energy Savings	Uptake of energy efficient products and services
x	x	x

2.2 Other indicators

Energy calculator use for consumers

Metric	Number of times the energy calculator is used by visitors	
Target	15,000 user sessions of the calculator during the project period (indicative 1,000 users per country)	
Source of impact	Consumers	
Input parameter for ...		
Consumer involvement	GHG emission reduction & Energy Savings	Uptake of energy efficient products and services
✓	✗	✗

Deep links to online stores

Metric	Number of links leading to retailers website OR installers website OR price comparison website	
i	36 (indicative 3 per country)	
Source of impact	Consumers	
Input parameter for ...		
Consumer involvement	GHG emission reduction & Energy Savings	Uptake of energy efficient products and services
✓	✗	✗

Prize competition for consumers – individual national level

Metric	Number of individual participants at national level	
Target	Not defined	
Source of impact	Consumers	
Input parameter for ...		
Consumer involvement	GHG emission reduction & Energy Savings	Uptake of energy efficient products and services
✓	✗	✗

Larger price joint competition for consumers

Metric	Involvement of partners in joint competition	
Target	Not defined	
Source of impact	Consumers	
Input parameter for ...		
Consumer involvement	GHG emission reduction & Energy Savings	Uptake of energy efficient products and services
✓	✗	✗

Activities with consumers - ONLINE

Metric	Options <ul style="list-style-type: none">• Comment function• Feed in FAQ section• Game quizzes on best use practice• Product recommendations by consumers• Rebate programme overview• Link to installer association or certified networks	
Target	Not defined	
Source of impact	Consumers	
Input parameter for ...		
Consumer involvement	GHG emission reduction & Energy Savings	Uptake of energy efficient products and services
✓	✗	✗

Cooperating with consumer organisations - OFFLINE

Metric	Options: <ul style="list-style-type: none"> • Partnerships with consumer organisations • Presence at consumer fair • Workshops on energy efficiency at home • Events for house owners in cooperation with municipalities 	
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	<ul style="list-style-type: none">• Presentations, workshops for consumers at events	
Target	Number of partnerships with consumer organisations at least 14 for first option / others: not defined	
Source of impact	Consumers	
Input parameter for ...		
Consumer involvement	GHG emission reduction & Energy Savings	Uptake of energy efficient products and services
✓	✗	✗

3 Progress in monitoring period and projection regarding achievement of targets

In this section, the level of achievement as well as the trend concerning the ultimate goals at the project end is described. Related details concerning activities covered by the KPIs can be found in the Deliverables D4.4, D5.2 and D6.4.

3.1 KPI 1: On-line Platform

All 16 national platforms as well as the EU level platform topten.eu have been monitoring page views on their platforms.

So far (by March 2021) 1,019,208 page views have been recorded since September 2019. This value projected to a 12 months period would already meet the goal of 900,000 page views (890,856) if the trend would remain stable at least, not necessarily positive (see Figure 2). It is expected that the numbers will further increase in the remaining project period.

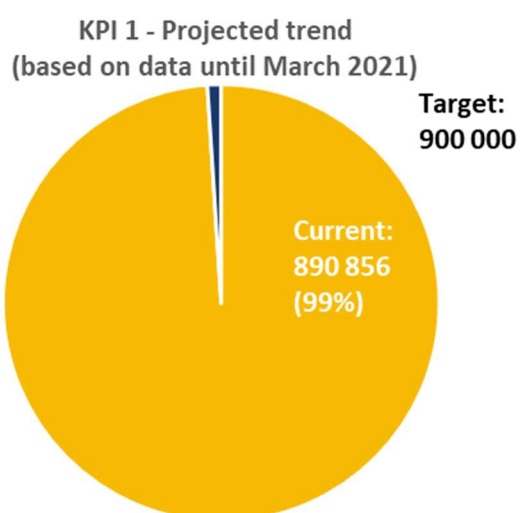


Figure 2: HACKS KPI 1: Projected trend for last year

However, it should be noted that the compliance with privacy policy requirements (GDPR) on national level could impose challenges to a continuous consistent tracking of page views. Depending on specific interpretations of GDPR requirements, technical settings (browser cookies) for tracking tools can be qualified as not “technically required” enabling users to

disallow the tracking cookies. As a consequence, a non-specified share of actual user traffic cannot be counted and monitored anymore. This aspect has to be further evaluated and if needed corrective or adaptive measures taken. This could also affect the monitoring of the deep links impact, as the whole topic of affiliate marketing is also concerned.



The evaluation of the projected trend provides a very positive result. However, the issue of potentially disallowing tracking cookies raises a concern and requires further investigation.

3.2 KPI 2: Media outreach

In case of the monitoring of KPI 2, all of 15 national partners have had media activities, however had different success levels related to the continued COVID-19 pandemic.

Since September 2019, 7.65 million media contacts across 15 national partners have been recorded. The target set by the HACKS project is to achieve 22 million media contacts in the last project year, meaning that so far 35% of the total target have been reached (see Figure 3).

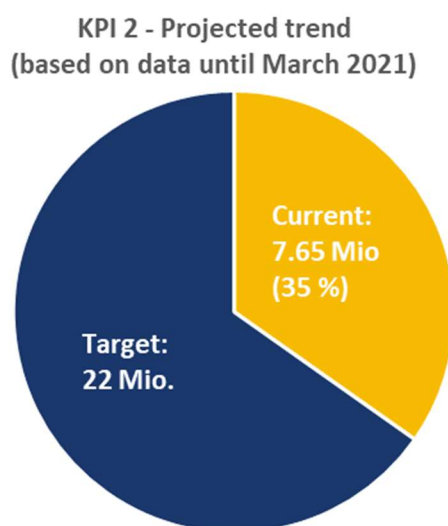


Figure 3: KPI 2: Projected trend media contacts last year

It has to be noted, that the monitored and reported figures for media contacts are very conservative at this stage, leading to an underestimation of the total media contacts value. Some partners will evaluate the audience size (number of readers) along to the continuously recorded clippings at the project end only.

The COVID-19 pandemic as external influential factor has also negatively affected media outreach especially until autumn and winter 2020. Attention for COVID-19 has slightly lowered in the past months, allowing HACKS to be more present in the media again. The project team will aim at effective media activities and fully make use of tools and materials in implementing the national campaigns in the second half of the project.



The project team was able to make good progress. All partners shall keep in mind that media presence has to be enhanced (benefitting from well-established cooperation with stakeholders and developed information materials and tools)

3.3 KPI 3 - 4: Contacts made and partnerships established with manufacturers

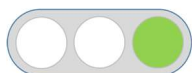
So far, 51 manufacturers and manufacturer groups have been contacted and 45 cooperation established.



The target to involve 30 manufacturers in the last year has already been achieved.

3.4 KPI 5 - 7: Contacts made and partnerships established with multipliers

Partners have established 162 partnerships by March 2021.



Considering the target of 100 partnerships in the last year of the project, this target has already been met.

3.5 KPI 10: Stakeholders informed

Overall, 2,250 stakeholders shall be informed over the project duration. This target will be easily achieved, however the monitoring task has to be adapted to make it more explicit.



A lot of activities have been undertaken to inform stakeholders about the project. These efforts have to be documented in a comprehensive manner.

4 Preliminary impact assessment (mid-term)

4.1 Assessment of consumer involvement

In order to relate project activities to actual involved consumers, assumptions are made for conversions factors to link these aspects and take into account the type of the interaction between the HACKS project and consumers.

The following table provides an overview of the conversion factors, already considered for the intermediate step. Some of these conversion factors have been indicated in the HACKS project proposal already. This first selection of factors as well appropriate additional ones will be further adjusted and refined aiming at a best possible robust assessment.

Table 1: Overview of conversion factors

Activity (Involvement after ...)	Conversion factor [activity level] = 1 involvement
Media publication	50
Publication in consumer media	25
Use of HACKS calculator	1
Participation in raffles and competition (answering question of HAC topics)	2

Use of deep link (clicks)	5
Participation in consumer events	20

For the purpose of assessing the consumer involvement at this stage a calculation was made considering media contacts only (see Table 2). For the mid-term approximation an average value was applied for the calculation of consumer involvement $((25 + 50) / 2 = 37.5)$. The calculation for the activity “media contacts” will be done at the project end taking into account a strict reference to “media publication” or “publication in consumer media”. Even with applying this restricted focus with one activity the overall target of involving around 57,000 consumers is confirmed.

Table 2: Calculation of consumer Involvement

Consumer involvement per	Value	Conversion factor	Involved consumer
... media contact	7,652,018	37,5	204,054
TOTAL			204,054

4.2 Assessment of energy savings and GHG emission reduction

The assessment of energy savings follows directly the concept as described in the Grant Agreement, using the specific savings outlined in the impact chapter. The following table details the savings generated for the four main areas.

Table 3: Calculation of energy savings

Savings generated per	Value	Specific savings [kWh]	Savings [GWh]
... page views	1,019,208	90	91.7
... media contact	7,652,018	1.5	11.5
... manufacturer involvement	45	1,000,000	45.0
... partnership	162	600,000	97.2
TOTAL SAVINGS			
Final Energy			245.4
Primary Energy			613.5

The calculated primary energy savings of 613.5 GWh (for a period of 19 months) scaled to a 12 months period - 387.5 GWh - meet the target value for annual average savings of 375 GWh. As the target values for GHG emission savings (75,000 tCO₂/year) are directly based on those

for energy savings (applying a factor of 500 between tCO₂ and GWh_{el} as final energy, with reference to the database Ecoinvent V3.3, GWP 100 (IPCC2013)) the target value is confirmed as well in principle (with a calculated value of 122,700 tCO₂ for a 19 month period).

4.3 Assessment of uptake of energy efficient products and services

The assessment of the uptake of energy efficient products and services is based on the following relation:

Energy efficient products sold through multiplier partnerships = savings from 100 yearly partnerships / savings potential from the product.

With the factor of about 140,000 products sold by 100 partnerships the target as defined for the last year of the project can be seen as ascertained.

5 Concluding remark

The first half part of the HACKS project was heavily affected by the COVID-19 pandemic, challenging the outreach of the project and consumers perception level for HACKS topics. Nevertheless, the data monitored in the period of September 2019 to March 2021 underlines that the project overall is on good track and the delivery of the project impact as indicated in the Grant Agreement can be seen as very likely.

The monitoring of quantitative indicators and impact evaluation is managed as a continuous task, Partners (have been and) will be reminded to update the monitoring tools on a regular basis. A thorough discussion of the status and possible adaptations and corrective actions will be covered within the upcoming project meetings and in consortium calls if seen appropriate.