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ANTICSS Project
List of Products in Scope
(final list)

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ANTICSS

ANTI-CIRCUMVENTION OF STANDARDS FOR BETTER MARKET SURVEILLANCE

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List of abbreviations

AdCos	Administrative Cooperation Groups
ED	ecodesign
EL	energy labelling
EIA	Ecodesign Impact Accounting
GWP	Global Warming Potential
n.a.	not applicable
pt	point
pts	points
TVs	televisions
WP	work package

1   About the ANTICSS project

ANTICSS objectives are to assess and define "circumvention" in order to achieve a better product positioning in relation to EU Ecodesign and Energy labelling legislation and relevant harmonised standards; including clear delimitation from other effects to facilitate unambiguous public communication. Its aims are also to collect, analyse and learn from cases of circumvention by literature research and dedicated expert interviews, as well as analysing existing EU Ecodesign (ED) and Energy labelling (EL) legislation and standardisation for possible loopholes. The potential relation between circumvention and "smart" products with specific embedded software is another issue addressed by the project. From these findings, conclusions how to better detect and prevent future circumvention will be derived; assessing impacts 'if' and 'how much' energy consumption and/or functional performance modifications could be ascribed to circumvention by conducting appliance testing. Project's further objectives are to define alternative test procedures or checklists with the aim to by-pass any possible measurement circumvention.

Based on the results, ANTICSS will provide practical capacity building measures for key actors of market surveillance and test laboratories, support communication and collaboration platforms between major stakeholders and provide policy recommendations for policy makers and standardisation bodies to prevent future circumvention under EU Ecodesign and Energy labelling. ANTICSS project is also designed to provide reliability to manufacturers by specifying potentially vague legislation and standards which might be interpreted differently by market actors and some of them taking unfair advantages so far. By overall awareness raising on circumvention among stakeholders, ANTICSS is supporting an effective EU legislation enforcement and thus increasing acceptance and trust of market actors and civil society into the Ecodesign and Energy labelling legislation.
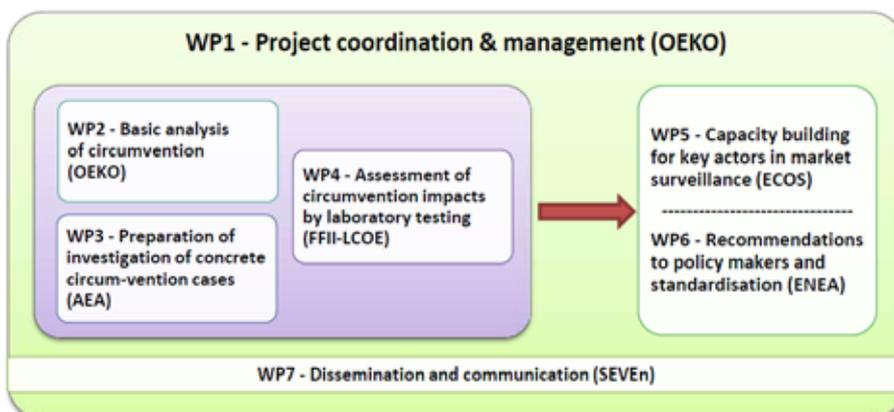
Figure 1:   ANTICSS Work Packages

2 Goal and approach of Task 2.1

Starting from a full list of those product groups with applied EU Ecodesign and Energy labelling regulations, task 2.1 of work package 2 comprises the definition of the project's product scope. Main goal of this task is to take a first step in narrowing the scope in order to focus on product groups being probably relevant for circumvention and thus being further analysed in the subsequent tasks and work packages.

To narrow the scope, first a matrix has been developed entailing certain decision criteria which have been first presented and discussed at the kick-off meeting of the ANTICSS project (4th/5th of June 2018). In the following chapter 3 the general decision criteria for which information has been collected are listed and explained.

Then an evaluation has been developed in order to come to a ranking of the product groups. This ranking serves as basis to define which product groups shall be analysed in what detail in task 2.5 (Analysis of legislation and harmonized standards for selected product groups) and the subsequent work package 3 (Detailed preparation for the investigation of concrete circumvention cases). The methodology for this evaluation is described in chapter 4.

The final selection of product categories and types for laboratory testing (work package 4) will take place by the end of work package 3.

3 Decision criteria for the selection of product groups in scope

For the following criteria, information on all product groups with applied EU Ecodesign and Energy labelling regulations has been collected in a separate excel matrix.[1] Most of the information was collected in the time period between April and August 2018 and thus represents the status at that time period. The information on the criterion "smartness" was complemented in November 2018 as discussions in task 2.4 (Analysis of the relation between circumvention and "smart" products) showed its relevance for the ranking of the product groups. Information regarding the question which product groups have been tested by MSAs within the last five years has been collected in December 2018 and January 2019. For few criteria, information will only be gathered in the forthcoming WP 3.

The following sections describe the structure and content of the ANTICSS decision matrix.

3.1 Section "General information"

Some rather informative and descriptive information regarding the product groups is collected in these columns.

Column "Product category"

The product groups are subsumed under product categories; e.g. domestic refrigerators and freezers, dishwashers, vacuum cleaners etc. are categorised as "white goods", to structure the variety of product groups and to enable checking if different categories of product groups are covered when narrowing the scope of the project.

Column "Lot abbreviation"

Each product group has an abbreviation which partly consists of the abbreviation of the responsible Directorates-General (DGs) of the EU Commission and a number (example: ENER 16 – household tumble dryers). This abbreviation helps to identify the product group in different contexts as the name of the product group sometimes differs.

Column "Product group"

A product group is defined through the respective ED and/or EL regulation.

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[1]   The so called "decision matrix" which can be found under www.anti-circumvention.eu/about-project/documents-and-deliverables.

In two cases there are product groups that are covered by different ED regulations but by the same energy labelling directive: light sources (three different ED-regulations, one EL-regulation) and local space heaters/solid fuel local space heaters (two different ED-regulations, one EL-regulation). These subgroups are combined in only one row. One reason is that the Ecodesign Impact Accounting (EIA, serving as source for the market and environmental relevance, see section 3.4) also does not differentiate between these subgroups. Another reason is, that, in case of lighting, the ED and EL regulations are currently under revision and the ED regulations shall be combined in the future. In the first meeting of the Advisory Board of the ANTICSS project (on 14th December 2018), the industry association representing the lighting industry in Europe ('Lighting Europe') pointed out that for office/street lighting there are currently no ED performance requirements or EL regulation so that this sub-category under light sources should be taken out of the further evaluation. This further in-depth investigation of product groups will be conducted in the subsequent WP3.

In case of washing machines and washer-dryers, the products groups, that are currently covered by one ED regulation (for washing machines) and two EL regulations (washing machines and washer dryers), are also combined in one row as in the ongoing revision they shall be covered by the same ED and EL regulation.

Column "Domestic/non-domestic"

This column gives an indication if the product group covers domestic products (D) or non-domestic products (N). In some cases products for both target groups are included in the regulations (e.g. light sources, tyres, imaging equipment).

Column "Status (August 2018)"

As far as possible the status of the regulation process as of August 2018 is shortly described to see in what stage the product group is and if changes in the regulation can be expected soon. In the latter case the potential changes would need to be considered in the further ANTICSS work packages as e.g. in some cases identified loopholes might already be considered by updated measurement standards or revised ED or EL regulations. Another aspect is that regulations currently being under revision might still be influenced by outcomes of ANTICSS whereas on the other hand products cannot be tested against regulations or standards which are not in force yet.

3.2 Section "Ecodesign"

Column "ED regulation"

Here the currently applicable ED regulation (including amendments) for the respective product group is listed. In some cases the product groups are covered by a voluntary industry agreement instead of an ED regulation, which is listed as well.

Column "Covered product types ED Regulation"

For further information the product types covered by the regulation are given as in subsequent ANTICSS work packages a further selection of specific product types and even models will take place.

3.3 Section "Energy label"

Column "EL regulation"

Here the currently applicable EL regulation (including amendments) for the respective product group is listed.

Column "Covered product types EL Regulation"

For further information the product types covered by the regulation are given as in subsequent ANTICSS work packages a further selection of specific product types and even models will take place.

In most cases the covered product types are identical for both ED and EL regulation. However there are also product groups where the scope is different. Further, some product groups are only covered by an ED but not an EL regulation. This is mostly the case for industry applications (like motors, industrial fans, transformers etc.).

3.4 Section "Market and environmental relevance (source: EIA 2017)"

Market and environmental relevance of the product groups is one important criterion to select product groups which have a significant market and/or environmental relevance in order to achieve a possibly high impact through the ANTICSS project. A comprehensive source of indicators that can be used to quantify the market and environmental relevance is the Ecodesign Impact Accounting (EIA), a study commissioned by the European Commission to systematically monitor

and report on the impact of Ecodesign, Energy Labelling, Energy Star and Tyre Labelling measures (Van Holsteijn en Kemna B.V. (VHK) 2017).

Information on the following indicators was taken from that study:

- Sales (in 2015 and 2020)
- Stock (in 2015)
- Primary energy consumption (in 2015)
- Savings (primary energy, GWP in 2020 and 2030)

3.5 Section "Market and environmental relevance (other sources)"

As a redundancy to check the information gathered from the EIA also other sources were taken into account. Information on energy consumption or savings and CO_2-savings of the product groups was collected from

- EU website regarding energy efficient products (https://ec.europa.eu/energy/en/topics/energy-efficiency/energy-efficient-products)
- ED and EL regulations (information in recitals)
- VITO, in cooperation with VHK (2015): Preparatory Study on Light Sources for Ecodesign and/or Energy Labelling Requirements ('Lot 8/9/19'). Final report.

3.6 Section "Existing experience"

To facilitate finding suitable interview partners for the various product groups, as well as to take into account existing experiences and synergies, information was collected with regard to the question which organisations or related research projects have been or are dealing with which product groups with focus on circumvention, compliance or related topics.

Column "Covered by other EU research"

Many product groups have been or are covered by other EU research projects that deal or dealt with non-compliance or circumvention. For product groups covered by other EU or national research projects with focus on circumvention and/or market surveillance, project leaders have been contacted for clarification of overlaps or gaps to decide if these product groups will still be covered by ANTICSS. The following projects were identified:

Table 2-1: Related research projects

Short name and website	Duration	Covered product groups
EEPLIANT 2 http://eepliant.eu/	2017-2019	domestic + professional refrigerators, network standby, LED, printers, heaters
INTAS www.intas-testing.eu/	2016-2019	Power transformers and industrial fans
NAPE / BAM https://netzwerke.bam.de/Netzwerke/Navigation/DE/Evpg/EVPG-Nape/evpg-nape.html	2016-2018	range hoods, tumble dryers, air conditioners, heat pumps
STEP http://eeb.org/closing-the-reality-gap/	2016-2017	TVs, refrigerators, dishwashers
EEPLIANT http://eepliant.eu/	2015-2017	LED lamps, imaging equipment (printers), and space heaters and combination heaters
MarketWatch https://ec.europa.eu/energy/intelligent/projects/en/projects/marketwatch	2012-2016	Fridges and freezers, wine storage appliances, washing machines, tumble driers, washer driers, dishwashers, ovens, range hoods, vacuum cleaners, air conditioners, TVs, lighting, standby and off-mode, electric oven
ComplianTV www.compliantv.eu	2013-2015	TVs
ECOPLIANT www.ecopliant.eu	2012-2015	Lighting, TVs, EPS, circulators, water pumps, motors, comfort fans.
ATLETE II www.atlete.eu/2/	2012-2014	washing machines
ATLETE www.atlete.eu	2009-2011	Refrigerators + freezers
SELINA https://ec.europa.eu/energy/intelligent/projects/en/projects/selina	2008-2010	Standby and off mode

Column "Tested by MSAs within the last 5 years"

Many product groups are regularly tested by market surveillance authorities (MSAs). This information can help identifying for which product groups MSAs are experienced in testing and could thus deliver valuable information in the interviews to be conducted in work package 3.

This information has been queried in December 2018 and January 2019 in cooperation with the Administrative Cooperation Groups (AdCos) on energy labelling and ecodesign (ECOD, ENERLAB).[2]

3.7 Section "Hints on circumvention"

All circumvention related information regarding the product groups is collected in this section.

Column "Description of suspect behaviour"

In this column, cases of suspect behaviour that has been collected by the ANTICSS project team in task 2.2 through a questionnaire are shortly described. Also project leaders of other EU or national research projects have been asked for further hints on circumvention. Cases were collected until August 2018.

Columns "Red, orange, yellow"

Based on the suspect behaviour cases described by the respondents of the questionnaire, in task 2.2 a preliminary definition of circumvention has been compiled by the ANTICSS project team, differentiating three levels: red (1st level of circumvention), orange (2nd level, suspect behaviour to be further assessed) and yellow (conform behaviour, but not sufficiently reflecting performance or use of resources as perceived by consumers in daily life).

The three columns in the excel matrix show to which level the cases of suspect behaviour collected in that specific product category were assigned to by the ANTICSS project team so far. For a better overview, the cells are marked in light red when there is a hint on circumvention classified either in the red (1st level of circumvention) or orange level (2nd level of circumvention, suspect behaviour to be further assessed).

Note: The classification has been made in November 2018 based on the preliminary definition of circumvention. A revision of the definition, for example due to further findings out of the interviews to be conducted in work package 3, might lead to a different classification of the cases.

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2   European cooperation on market surveillance takes place through informal groups of market surveillance authorities, called Administrative Cooperation Groups (AdCos). For further information see http://ec.europa.eu/growth/single-market/goods/building-blocks/market-surveillance/organisation/administrative-cooperation-groups_en.

Column "Possible circumvention easy to be replicated?"

This criterion describes how easy it is deemed that the suspect behaviour encountered in the product category might be replicated. The easier it is the higher is the risk that the behaviour is shown by many of the products in that product group.

This column will be filled in on the basis of the information to be gathered in work package 3 (Detailed preparation for the investigation of concrete circumvention cases). The information can therefore not be used for the ranking of product groups to meet the goal of task 2.1 (scope). However the complementation of the matrix with further information during work package 3 might facilitate the final selection of 10 product groups and types or horizontal aspects that will be further analysed by laboratory testing in WP 4, which is the goal of that work package. The possibility of adding further information is therefore already included in the matrix.

Column "Potential impact on consumers' trust / public or consumer awareness"

This criterion describes the potential impact of the suspect behaviour encountered in the product category on consumers' trust or public / consumer awareness. The higher the potential impact, the higher is the possible damage a single case might cause to the ED or EL legislation as a whole. One factor influencing the impact on consumers' trust might be if the product group is covered by an EL regulation or not, as the ED regulation only is not that visible to consumers as the energy label. Also industrial applications might have a lower impact on consumers' trust: they are not covered by EL regulation and there is no direct contact to consumers.

This column will be filled in on the basis of the information to be gathered in work package 3 (Detailed preparation for the investigation of concrete circumvention cases), especially task 3.3 (consumer views and experiences). As with the previous aspect ("Circumvention easy to be replicated?") this information cannot be used for the ranking of product groups to meet the goal of task 2.1. However the complementation of the matrix with further information during work package 3 might facilitate the final selection of 10 product groups and types or horizontal aspects that will be further analysed by laboratory testing in work package 4, which is the goal of that work package. The possibility of adding further information is therefore already included in the matrix.

3.8 Section "Smartness of Appliances"

During discussions in task 2.4 (Analysis of the relation between circumvention and "smart" products) it was seen that this aspect is of relevance for the ranking of the product groups as it has a close relation to the possibility for circumvention. Information on the smartness of the product groups was therefore added to the decision matrix in November 2018.

The smartness of product groups was evaluated with the help of an internal expert judgement, i.e. the experts of the consortium were asked to judge the level of smartness on a scale with three values: high, medium and low.

To base the judgement on a common understanding, the definition of "smart appliances" was taken from the respective ecodesign preparatory study on smart appliances (Lot 33)[3]: "In the broadest sense, smart appliances are defined as appliances that are able to communicate." (Vanthournout et al. 2015). Communication is considered to take place in four ways:

- within the appliance,
- between appliances,
- between appliances and energy provider, and
- between appliances and manufacturer.

Also four categories of smart features were identified (the first two are taken from Vanthournout et al. (2015)):

- Energy saving features,
- Demand side flexibility,
- Process adaption, and
- Learning appliance

Taking into account the definition and the four categories the experts judged the level of smartness of the product groups.

3.9 Section "Testing capabilities of test laboratories within the consortium"

In these columns the testing capabilities of those four test laboratories being involved as project partners within the ANTICSS consortium is compiled:

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[3]   Cf. http://www.eco-smartappliances.eu/Pages/welcome.aspx

- LCOE (FFII. Laboratorio Central Oficial de Electrotecnia)
- IMQ (Istituto Italiano del Marchio di Qualità)
- VDE (VDE Prüf- und Zertifizierungsinstitut GmbH)
- Re/genT

Available testing capabilities are marked in light green.

3.10 Section "Comments"

Comments regarding any of the above mentioned categories.

4 Evaluation

4.1 Introduction

As described in chapter 2 the main goal of task 2.1 is to take a first step in narrowing the scope in order to focus on product groups being probably relevant for circumvention and thus being further analysed in the subsequent task 2.5 (Analysis of legislation and harmonized standards for selected product groups) and work package 3 (Detailed preparation for the investigation of concrete circumvention cases). In WP 3, the final selection of product categories and types or horizontal aspects to be further analysed by laboratory testing which is foreseen in WP 4 takes place.

This process to narrow the scope is started with a semi-quantitative ranking of the product groups listed in the decision matrix (30 product groups) in order to prioritise the resources of task 2.5 and WP 3 ("top down approach"). In task 2.5 the regulations and harmonised standards of those product groups that are ranked high will be analysed in detail. In WP 3 there will take place an in depth assessment of these product groups by conducting interviews with relevant stakeholders. Chapter 5 shows how task 2.5 and WP 3 will be focused according to the rank of the product groups.

Additionally there will be a survey in WP 3 asking the MSAs to indicate further hints on circumvention to ensure that also circumvention cases in product groups which are ranked low so far are taken into account when finally selecting the models to be tested ("bottom up approach").

This means that the ranking which is described here mainly serves to prioritize the resources of task 2.5 and WP 3 but will exclude only very few product groups in total (those to which the exclusion criteria apply, see chapter 4.3.1).

4.2 General approach of the semi-quantitative ranking (top down approach)

The general approach for a semi-quantitative ranking of the 30 product groups currently listed in the decision matrix is as follows:

- First, **exclusion criteria** are applied in order to narrow the scope of relevant product groups according to the project proposal (e.g. "not covered by product specific delegated or implementing regulations") (see section 4.3.1 below).
- Then **selection criteria** are defined, which allow a semi-quantitative differentiation within the product groups (see section 4.3.2 below).
- In a third step a **weighting** takes place leading to a ranking of the product groups (see also section 4.3.2):
  - A weight is assigned to each selection criterion (X%). The sum of all the weights applied to the selection criteria has to be 100%.
  - The characteristic values of each criterion are evaluated. There are criteria where the characteristic value for the product groups can either be "yes" or "no" (e.g.: "hints on circumvention" or "product group covered by other research"). For other criteria quantitative values can be reached (e.g.: stock, sales, savings according to EIA). Depending on the value different numbers of "points" are assigned.
  - Afterwards the weight of each selection criterion is multiplied with the value of the evaluation of the characteristic value for the respective product group (and divided by the highest reachable value). Thus 100% of the specific weight can only be reached, if the criterion is rated with the maximum number of points.
- In that sense, for each product group (that is not excluded) a "value" is calculated. The maximum value to be reached by a product group is "100", the minimum value "0".
- The product groups are then ranked according to this value in descending order.

In conclusion, the decision matrix provides a ranking of product groups covered by ED and/or EL regulation, without excluding many product groups at this stage of the project (except those to which the exclusion criteria apply).

This ranking is used to allocate the resources in task 2.5 and WP 3 (see section 5 below).

4.3 Detailed description of criteria and weighting

4.3.1 Exclusion criteria

After intense discussions within the core team of WP 2 only two exclusion criteria were considered to be unambiguous and strong arguments for excluding product groups from the scope. These two exclusion criteria are applied:

- Product groups which are not covered by product specific delegated or implementing regulations on ecodesign or energy labelling. This leads to the exclusion of 4 product groups:
  - o ENER 18 Complex set-top boxes (voluntary agreement only);
  - o ENER 4 Imaging equipment (copiers, MFDs, printers, fax machines) (voluntary agreement only);
  - o ENER 3 Sound and imaging equipment (range of products that allow the presentation of video images, incl. game consoles) (voluntary agreement only); and
  - o ENER 25 Non-tertiary coffee machines (only covered by horizontal implementing regulation on standby and off mode electric power consumption).
- Product groups which have no market relevance anymore (i.e. sales from 2020 onwards = zero). This leads to the exclusion of 1 product group:
  - o Simple Set-Top Boxes

As five product groups are excluded through the exclusion criteria, 25 product groups remain for the evaluation through the selection criteria, which is described in the following chapter.

The excluded product groups and the applicable exclusion criterion are marked in light red in the decision matrix.

4.3.2 Selection criteria: description, evaluation of the characteristic values and weighting factors

The following paragraphs describe in detail the proposed selection criteria that are applied to evaluate the remaining 25 product groups.

4.3.2.1 Hints on circumvention

It is important to select product groups where it is likely to find circumvention. It was therefore decided to take the information on "hints on circumvention" as selection criterion.

The evaluation of this selection criterion is done as follows:

- Product groups with hints that are classified as red AND orange   5 points
- Product groups with hints that are classified as red AND orange AND yellow   5 points
- Product groups with hints that are classified as ONLY red   3 points
- Product groups with hints that are classified as ONLY orange   3 points
- Product groups with hints that are classified as orange AND yellow   3 points
- Product groups with hints that are classified as ONLY yellow   1 point
- Product groups without hints   0 points

The criterion is supposed to be the most important one. Therefore it was decided to give it a weight of 50%.

4.3.2.2 Market and environmental relevance

It is seen important to select product groups with high market and/or environmental relevance. There are different sub-criteria in this category: sales 2015, sales 2020, stock 2015, primary energy consumption 2015, savings (primary energy and GWP) 2030, and savings (primary energy and GWP) 2050. It was decided to use the primary energy consumption in 2015 [in TWh] and the savings in primary energy in 2030 [in TWh/a] as selection criteria.

The evaluation of the characteristic values of the <u>primary energy consumption (2015)</u> is done as follows:

- Eight product groups with the highest consumption   5 points
- next eight product groups   3 points
- remaining nine product groups   1 point

The evaluation of the characteristic values of the <u>savings in primary energy (2030)</u> is done as follows:

- Eight product groups with the highest saving   5 points
- next eight product groups   3 points
- next eight product groups   1 point
- Last product group (saving potential = zero)   0 points

The market and environmental relevance is supposed to be rather important for the ranking of the product groups. Therefore it was decided to give both sub-indicators together a weight of 40%, i.e. 20% each.

For a better overview the product groups which were not excluded from the scope are marked as follows for each indicator:

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- Dark blue: eight product groups with the highest levels
- Light blue: product groups rank nine to 16 with mean levels
- No marking: all other product groups

4.3.2.3 Smartness of product groups

As described in chapter 3.8 the project partners concluded that the smartness of products is of relevance for the ranking of the product groups as it has a close relation to the possibility for circumvention. The evaluation of this aspect is done as follows:

- High smartness   5 points
- Medium smartness   3 points
- Low smartness   1 point

It was decided to give this criterion a weight of 10%.

4.3.3 Further criteria not applied at the current stage

The project team also discussed further decision criteria however decided against their application as selection criteria at the current stage. They might be of relevance during WP 3.

4.3.3.1 Covered by other research

If the relevant product group is already covered by other research projects, the in depth assessment by conducting interviews with relevant stakeholders in WP 3 can be done easier, as the interview partners can rely on experience with the ED and EL regulation of the relevant product group. On the other hand, product groups that are already covered by other research projects are already in focus and possible circumvention might already be discovered. In contrast, it might be interesting to select product groups that have not yet been looked at by independent research.

As the evaluation of this aspect is ambivalent it was agreed to collect data on this aspect but not to consider it as selection criterion.

4.3.3.2 Tested by MSA

The rationale for this criterion is similar to that of "covered by other research": If MSAs have already experience in laboratory testing of relevant product groups, the in depth assessment by conducting interviews with relevant MSAs in WP 3 can be done easier, as the interview partners can rely on experience in testing of such devices and with the corresponding ED and EL regulation. But also here the argument can be applied that especially product groups that not have been tested yet might be interesting to be looked at in detail.

As the evaluation of this aspect is ambivalent it was agreed to collect data on this aspect but not to consider it as selection criterion.

4.3.3.3 Replicability

Replicability means the probability or simplicity of imitation of a certain type of circumvention. The easier a method of circumvention can be replicated the higher is the probability that it is applied in a high share of products leading to higher losses in prospected energy savings. As this aspect rather depends on the type of circumvention and not on the product group itself this might be a criterion in WP 3.

Information on this criterion will be collected during the interviews in WP 3.

4.3.3.4 Potential impact on consumer trust

It is considered to be important to tackle types or methods of circumvention with high impact on consumer trust as such an experience might be generalised by consumers leading to a decrease in trust regarding ecodesign or energy labelling regulation or maybe even European regulations in general. Several proxy indicators for this aspect have been discussed, e.g. domestic versus non-domestic product group, or high versus low market penetration in private households.

This criterion and its possible measurement shall be further assessed during the in depth interviews with consumer (and environmental) NGOs in WP 3.

4.3.4 Summary of selection criteria

The following Table 4-1 provides an overview of the relevant selection criteria, the allocated weights and the evaluation of the respective characteristic values.

Table 4-1: Selection criteria, proposed weights and evaluation of respective characteristic values

Selection criterion	Weight of criterion	Evaluation of characteristic values
Hints on Circumvention	50%	5 – red AND orange (AND yellow) 3 – only red, only orange, orange AND yellow 1 – only yellow
Market and environmental relevance · primary energy consumption (2015) · savings in primary energy (2030)	40% (each 20%)	5 – High 3 – Medium 1 – Low 0 – No (only applicable for 'savings in primary energy')
Smartness of products	10%	5 – High 3 – Medium 1 – Low
Further criteria possibly to be included at a later stage		
Covered by other research or tested by MSA	n.a.	n.a.
Replicability	n.a.	n.a.
Potential impact on consumers' trust	n.a.	n.a.

n.a. not applicable

4.3.5 Calculation of the final ranking of each product group

To calculate the final ranking of each product group the weight of each selection criterion is multiplied with the value of the evaluation of the characteristic value for the respective product group, divided by the highest reachable value. Thus 100% of the specific weight can only be reached, if the criterion is rated with the maximum number of points.

Table 4-2 gives two examples how to evaluate the information in order to calculate the final rating.

Table 4-2: Selection criteria, proposed weights and evaluation of respective characteristic values

Product group	Hints on circumvention Max. points: 5 Weight: 50%	Market/ environm. Relevance (energy consumption) Max. points: 5 Weight: 20%	Market/ environm. Relevance (savings) Max. points: 5 Weight: 20%	Smartness of products Max. points: 5 Weight: 10%	Final Ranking
Space and combination heaters (ENER 1)	Medium = 3 points	High = 5 points	High = 5 points	High = 5 points	80
Calculation	*50% * 3 pts/5pts =30%*	*20% * 5 pts/5 pts =20%*	*20% * 5 pts/5 pts =20%*	*10% * 5 pts/5 pts =10%*	*30 +20 + 20 + 10 = 80*
Domestic washing machines and washer dryers	Low = 1 point	Low = 1 point	Medium = 3 points	High = 5 points	26
Calculation	*50% * 1 pt/5 pts = 10%*	*20% * 1 pt/5 pts =4%*	*20% * 3 pts/5 pts = 12%*	*10% * 5 pts/5 pts =10%*	*10 + 4 + 12 + 10 = 36*

4.3.6 Testing capabilities within the consortium

Data on the testing capabilities within the consortium has also been collected in the decision matrix. Product groups where no testing capabilities are available in the test labs within the consortium will not be analysed in detail in task 2.5 or WP 3 as preferably those product groups should be finally selected within ANTICSS that can also be tested by test labs of the ANTICSS consortium.

Product groups with no testing capabilities within the consortium are:

· Electric motors
· Tyres
· Water pumps

However these product groups are not fully excluded from the scope. If, for these product groups, during WP 3 hints on severe cases of circumvention are reported by interview partners the consortium could still decide that these products groups shall be selected for testing in WP 4 as testing might also be subcontracted.

In the first meeting of the Advisory Board of the ANTICSS project (on 14th December 2018), the European consumer organisations (ANEC/BEUC) suggested to exclude tyres from the scope and further analysis as they do not fall under ED/EL regulation (the tyre-label is different from the Energy label). However as they are explicitly named on the energy efficient products website of the European Commission[4] and other documents dealing with ecodesign and energy labelling they are kept for the moment.

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[4] https://ec.europa.eu/info/energy-climate-change-environment/standards-tools-and-labels/products-labelling-rules-and-requirements/energy-label-and-ecodesign/energy-efficient-products_en

5   Results

5.1 Ranking of product groups

The following table shows the result of the application of the exclusion criteria and of the evaluation of the remaining product groups through the selection criteria as described in the previous chapter. Note: the ranking only serves for the allocation of ANTICSS project resources with regard to the further analyses foreseen in task 2.5 and WP 3 (cf. section 5.2).

According to their ranking the product groups are considered to be of different priority regarding the analyses to be conducted in task 2.5 and WP 3:

- · High priority: product groups with a ranking between 61 and 100 point (green)
- · Medium priority: product groups with a ranking between 31 and 60 points (yellow)
- · Low priority: product groups with a ranking of 30 points and below (no marking)

Product groups with no testing capability are marked in orange. Excluded product groups are marked in red.

Table 5-1: ANTICSS Ranking of product groups for the allocation of project resources with regard to further analyses in task 2.5 and WP 3

Rank	Points	Lot abbr.	Product group
1	100	ENER 8, 9, 19	Light sources: a) Office / Street lighting b) Domestic lighting part I non-directional lamps c) Domestic lighting part II directional lamps
2	92	ENER 5	Televisions
3	92	ENER 13	Domestic refrigerators and freezers
4	80	ENER 1	Space heaters and combination heaters
5	76	ENER 10	Room air conditioning / comfort fans
[6	76	ENER 11	Electric motors] *(no testing capabilities)*
7	68	ENER 20	a) Local space heaters (LSH) b) Solid fuel local space heaters (SFLSP)
8	68	ENER 14	Domestic dishwashers
9	68	ENER 16	Household tumble driers

Rank	Points	Lot abbr.	Product group
10	56	ENTR 1	Professional refrigerated storage cabinets
11	52	ENER 22	Domestic ovens, hobs and range hoods
12	52	ENER 17	Vacuum cleaners
13	50	ENER 2	Water heaters and hot water storage tanks
[14	42	-	Tyres (replacement and new)] *(no testing capabilities)*
15	42	ENER 21	Air heating and cooling products (central heating products using hot air to distribute heat)
16	42	ENTR 6	Air-conditioning and ventilation systems
17	38	ENER 11	Fans
18	36	ENER 14	a) Domestic washing machines b) Domestic washer-dryer
19	30	ENTR 2	Transformers
20	22	ENER 11	Circulators
[21	22	ENER 11	Water pumps] *(no testing capabilities)*
22	18	ENER 15	Solid fuel boilers
23	18	ENER 6 + 26	Standby and off-mode losses, networked standby
24	14	ENER 7	Battery chargers and external power supplies
25	14	ENER 3	PCs (Desktops and Laptops)
Excluded product groups			
26	n.a.	ENER 18	Complex set-top boxes
27	n.a.	ENER 4	Imaging equipment (copiers, MFDs, printers, fax machines)
28	n.a.	-	Simple Set-Top Boxes
29	n.a.	ENTR 3	Sound and imaging equipment (range of products that allow the presentation of video images, incl. game consoles)
30	n.a.	ENER 25	Non-tertiary coffee machines

n.a. not applicable

5.2 Allocation of resources for the **analyses** in task 2.5 and **WP 3**

Depending on the final ranking of the different product groups (see chapter 5.1) resources for the further analyses in task 2.5 and WP 3 are allocated to the different product groups. Focus is laid on product groups with a high ranking. Especially (MSAs), industry or consumer associations representing the highest ranked product groups are addressed in Task 3.1 to 3.3 (interviews).

Table 5-2 below provides the planned allocation of resources to the product groups.

Table 5-2: Allocation of resources of task 2.5 and WP 3 to ranked product groups

	High priority (Rank 1-9*)	Medium priority (Rank 10-18*)	Low priority (Rank 19-25)
Task 2.5			
In depth analysis of relevant ED, EL regulation	Yes	Yes	No
In depth analysis of relevant harmonised standards	Yes	No	No
If only one transitional standard is available this is also being analysed	Yes	No	No
Inclusion of hints of test labs regarding standards	Yes	Yes	No
WP 3			
Addressing of MSAs under task 3.1	Yes	Yes	Yes
Addressing of relevant industry organisations under task 3.2	Yes	Yes	No
Addressing of relevant consumer organisations under task 3.3	Yes	Yes	No
Compilation of cases of suspect behaviour via questionnaires in the repository[5]	Yes	Yes	No
Thorough analysis of suspect behaviour cases collected under WP3 (bottom up) belonging to ranked product groups	Yes	tbd	tbd

tbd = to be determined; * except those without testing capabilities

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[5] In task 2.3 of the ANTICSS project a structured repository has been **created** to document the information about possible circumvention cases which is gathered during the course of the project, mainly WP 2 and WP 3.

6 Literature

Vanthournout, K.; Ectors, D.; Claessens, S.; Viegand, J.; Stamminger, R.; Geppert, J.; Rivière, P.; Perret, M.; Götz, T.; Bogaert, S. (2015): Preparatory study on Smart Appliances (Lot 33), Task 1 Scope. version adapted to stakeholder comments. VITO (ed.), 15 Dec 2015.

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Austria: AEA - Österreichische Energieagentur

Italy: CCIAA Mi - Camera di commercio industria artigianato agricoltura

Spain: FFII – LCOE - Fundacion para el fomento de la innovacion industrial

Spain: CM - Comunidad de Madrid

Czech Republic: SEVEn - SEVEn, the Energy Efficiency Center, z.u.

Czech Republic: SEIA - Státní energetická inspekce

EU / Belgium: ECOS - European Environmental Citizens Organisation for Standardisation

Belgium: BHTC - Service public fédéral santé publique, sécurité de la chaîne alimentaire et environnement

Germany: GRS - Regierung von Schwaben – Gewerbeaufsichtsamt

Germany: UBONN - Rheinische Friedrich-Wilhelms-Universität Bonn

Austria: BMWFW - Bundesministerium für Wissenschaft, Forschung und Wirtschaft

Italy: IMQ - Istituto Italiano del Marchio di Qualità S.p.A.

Germany: VDE - VDE Prüf- und Zertifizierungsinstitut GmbH

Netherlands: Re/gent - Re/gent B.V.

Netherlands: NVWA - Nederlandse voedsel en warenautoriteit

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