



## Vestlandsforskning report

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### Summary

The report presents the data from an assessment of current policies aimed at reducing household GHG emissions in four countries: Norway, Sweden, Germany and France. The data have been used to produce scientific articles as part of the project "Household preferences for reducing greenhouse gas Emission in four European High Income Countries" (HOPE).

### Other publications from the project

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## Foreword

This report presents the data from an assessment of current policies aimed at reducing household GHG emissions in four countries: Norway, Sweden, Germany and France. The data have been used to produce scientific articles as part of the project "Household preferences for reducing greenhouse gas Emission in four European High Income Countries" (HOPE).

Sogndal, 01.09.2017.

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Leader of the work package on policy analysis in the HOPE project

## Table of content

<b>INTRODUCTION.....</b>	<b>5</b>
<b>METHODS.....</b>	<b>8</b>
CONSUMER FOCUS IN CLIMATE POLICY .....	8
DEFINING 'POLICY' .....	9
SYSTEM BOUNDARIES .....	10
DATA SOURCES AND CATEGORISATION OF POLICIES .....	11
<b>THE QUANTITATIVE SUMMARY OF IDENTIFIED POLICIES.....</b>	<b>13</b>
NUMBER OF IDENTIFIED POLICIES .....	13
POLICY MEASURES .....	13
USING "STICKS" OR "CARROTS"? .....	14
MECHANISMS OF CONSUMPTION CHANGES .....	15
LEVEL OF POLICY IMPLEMENTATION.....	16
DIRECT VERSUS INDIRECT EMISSIONS .....	18
POLICY PROFILE .....	18
<b>THE QUALITATIVE SUMMARY OF IDENTIFIED POLICIES.....</b>	<b>20</b>
HOUSING.....	20
TRANSPORTATION.....	21
FOOD.....	22
OTHERS.....	23
<b>DISCUSSION AND CONCLUSION.....</b>	<b>24</b>
<b>REFERENCES.....</b>	<b>26</b>
<b>ATTACHMENT 1: IDENTIFIED POLICIES IN NORWAY.....</b>	<b>27</b>
FOOD.....	27
HOUSING.....	32
TRANSPORTATION.....	43
OTHER .....	57
<b>ATTACHMENT 2: IDENTIFIED POLICIES IN SWEDEN.....</b>	<b>67</b>
FOOD.....	67
HOUSING.....	71
TRANSPORTATION.....	85
OTHER .....	110
<b>ATTACHMENT 3: IDENTIFIED POLICIES IN GERMANY.....</b>	<b>120</b>
FOOD.....	120
HOUSING.....	123
TRANSPORTATION.....	140
OTHER .....	151
<b>ATTACHMENT 4: IDENTIFIES POLICIES IN FRANCE.....</b>	<b>164</b>
FOOD.....	164
HOUSING.....	168
TRANSPORTATION.....	192
OTHER .....	201
<b>ATTACHMENT 5: CODING OF THE POLICIES.....</b>	<b>219</b>

## Introduction

### *The urgency of the Paris accord*

A number of studies, in particular the Global Carbon Project (Le Quéré et al, 2016), have tried to assess the historic amount of anthropogenic GHG emissions and the budget of such emissions that are available to be emitted until defined limits of CO<sub>2</sub> concentration in the atmosphere - and corresponding global temperature levels - are passed. Such studies suggest that humanity has 20 to 40 years of achieving what for all practical reasons should be denoted as a zero-emission society (Meinshausen et al, 2009).

The Conference of the parties Marrakech Partnership for Global Climate Action (COP22), building on the Paris Agreement, represents a vehicle for the multi-stakeholder pre-2020 acceleration and necessary a ratchet up of the Nationally Determined Contributions (NDC) to avoid exhausting the 1.5 to 2 °C carbon budget. It recognises the role of consumers as autonomous and synergetic actors for private sector and investor engagement around deep transformation of consumption patterns and lifestyles. Targeting consumption patterns offers a high mitigation potential (IPCC 2014: 66). Moving beyond supply-side measures should may be required to stay within our carbon budget (De Koning et al, 2016) the more as as 72% of global GHG emissions are related to household consumption (Hertwich and Peters, 2009).

Several studies have attempted to measure individuals' willingness to change their consumption patterns to reduce GHG emissions, most of which implicitly or explicitly relates to such changes taking place on a voluntary basis (Aall and Hille, 2010). The speed at which this potential is delivered depends on the policy context in which consumers make decisions, but it is however questionable if voluntary consumption changes will be able to deliver sufficient emission cuts in time to reach the 2 or - even more doubtful - the 1.5°C goal. Still, surprisingly few studies have asked which mandatory consumption changes households can accept and at what speed such changes might manifest themselves (Owen et al, 2008; Howel, 2008).

Changing patterns of private consumption has the potential to significantly reduce GHG emissions, especially when targeting the areas of mobility, housing, diet and waste (IPCC 2014: 66). There is broad agreement that achieving international climate goals require drastic improvements in efficiency as well as profound lifestyle changes (UNECE, 2010; Huntington and Smith, 2011; OECD, 2011; IEA, 2012d; Riahi et al., 2012 in IPCC 2014: 140; X). The Paris agreement recognises the important contribution of sustainable lifestyles and patterns of consumption in mitigating climate change and reaching the agreement's ambitious goals to limit global average temperature increase to well below 2°C above pre-industrial levels, and pursue efforts to limit the temperature increase to 1.5°C (UNFCCC 2015: 2-3).

Climate change policies and research have traditionally focused more on how GHG emissions relate to production than to consumption. An illustration of this biased focus is the conventional and most widely used accounting method for measuring GHG emissions given in the UN Framework Convention on Climate Change (UNFCCC). The method was developed, primarily by the industrialised nations, for the implementation of the Kyoto Protocol (Helm et al., 2007). The UNFCCC method takes a geographical approach to emissions' responsibility. All emissions generated within a country's territory make up that country's total emissions. Thus, for the case of high-consuming countries only a small part of specifically consumption-related emissions is included, primarily those derived from energy use in residential housing and the private use of automobiles and motorcycles.

Emissions embedded in the consumption of imported products and services are included in the GHG inventories of the countries where such products and services are produced, whereas emissions from international shipping (including cruise) and aviation is so far not included in any national GHG inventories. GHG inventories are the reference point for formulating policies on reducing GHG emissions. This relates to all levels of governance. In view of the importance of GHG inventories in climate change policy-making, there has been

surprisingly little debate on the implications of various system boundaries for GHG inventories (Peters and Hertwich, 2008).

Several studies comparing the development of production and consumption related GHG emissions reveal that many rich countries have experienced a reduction in production-related emissions whereas the opposite is the case for consumption related GHG emissions (Munksgaard and Pedersen, 2001; Bruvoll, 2006; Helm et al., 2007; Aall and Hille, 2010). Depending on the ratio of export versus import of goods and services for a country, the level of consumption related GHG emission for a specific country could be at par with the level of emissions presented in official GHG emission inventories presented in accordance with the UNFCCC method (Aall and Hille, 2010). However, the current level and composition of indirect consumption related GHG emissions - and potential effects of GHG mitigation measures on such emissions – are not specifically addressed in the official national GHG inventories. At the same time, it seems obvious that these emissions need to be systematically addressed if order to achieve the goals set in the Paris agreement.

*The HOPE project*

The project “Household Preferences for reducing greenhouse gas emissions in four European high-income countries” (HOPE) involves the following four research objectives:

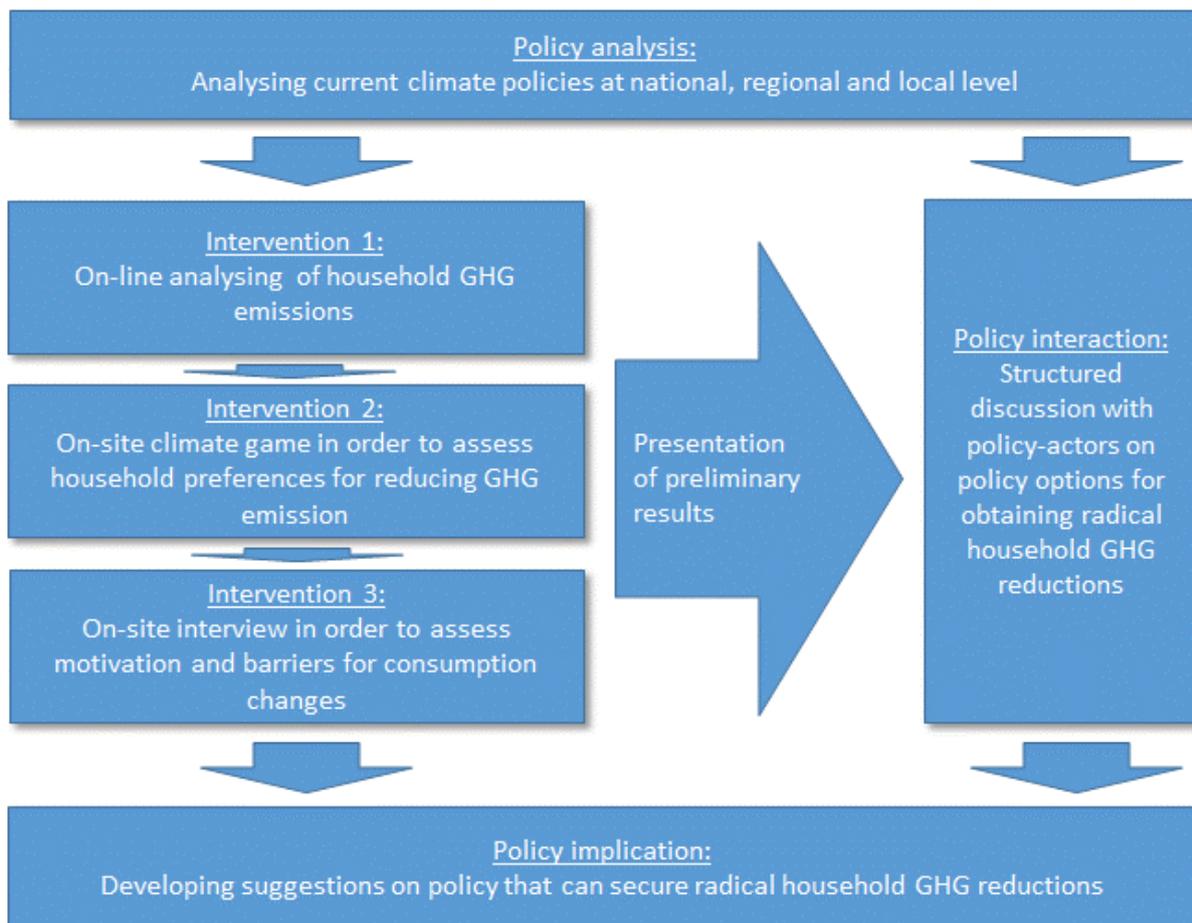
- (1) To investigate households’ motivations and barriers to adopt mitigation measures, especially about the role of individual health co-benefits in households’ preferences for those measures.
- (2) To investigate which mitigation measures households in European high-income countries would be willing to adopt under the goal of reducing emissions by 50% by 2030, addressing the 1.5°C goal.
- (3) To estimate the GHG emission reduction potential and private economic impact of the preferred and non-preferred mitigation measures.
- (4) Investigate the link between climate policies and household preferences as well as the potential implications of our findings for policy makers on local, regional, national and EU-level.

The study is conducted in four countries involving case-studies of several randomly selected households in four medium sized cities (around 60 households per city).

**Table 1** Case countries and cities of the HOPE project

COUNTRY	GERMANY	FRANCE	NORWAY	SWEDEN
Name of city	Mannheim	Pays d` Aix	Bergen	Umeå
Population	290,000	350,000	250,000	120,000
GHG reduction targets	-40% (2020)	none	-50% (2030)	-50% (2025)
Economy	Manufacturing	Touristic, service	Touristic, service	Services, manufacturing

The project logic of HOPE is presented in the figure below. This report documents the results from the initial policy analysis of the project.



**Figure 1** The project logic of HOPE

The purpose of the initial policy analysis is to identify current policies that might affect the type and level of household GHG emissions for each country case, and compare the country specific analyses in a cross-country comparative analysis. The country specific analysis (or policy mapping) will make out the necessary foundation for the final policy analysis that aims to develop appropriate recommendations on changing policies. The research questions to be answered in this initial policy analysis are:

- (1) To what extent are household GHG emissions addressed explicitly or implicitly in current national, regional (the regions which the case cities are located) and local (in the case cities) climate policies?
- (2) To what extent do current policies explicitly or implicitly influence direct and indirect household GHG emissions within the four main consumption categories food, transportation, housing, and residual?

This report presents the methods used for analyzing the policies and presents the data of the policies identified to address reduction of household GHG emissions in the four countries. In the attachments to the report a full presentation is given of each identified policy in the four countries.

## Methods

### Consumer focus in climate policy

Consumer responsibility is both 'internally' and 'externally' dependent (Asdal & Jacobsen 2009: 10). The former has to do with the individual conscience; morale, guilt, shame etc., whereas the latter has to do with the external structural context/architecture; the material and technical conditions in which decisions are made. In the latter case, 'morale' is delegated/substituted/a function of the existing technology. Government intervention is often associated with restrictions and regulations, whereas the market is often portrayed as free, only shaped by the sovereign consumer and their purchasing power and rational decision-making. Consumers move freely in spaces of consumption, but the architecture of the space is often thoroughly regulated by both market and government actors (2009: 10-11).

Consumption can be a major driving force behind emissions. Vandenberg et al. (2007) estimated that individual behavior – actions under the direct, substantial control of a person but not undertaken in the scope of their employment – accounted for 30 to 40 percent of annual CO<sub>2</sub> emissions in the United States—the largest of any sector. Conversely, other studies imply that consumers can achieve substantial emissions savings by altering their behavior. Cafaro (2011) has determined that individuals can displace immense amounts of carbon—as much as 15 billion tons (gigatons) per year by 2060—simply by deciding where they take their vacation, and forgoing international air travel, or by eating less meat and replacing it with a diet consisting of more vegetables.

Indeed, there are at least two reasons to consider a more consumption-focused climate policy. First, the Kyoto Protocol ultimately considers average emissions per capita in defining reduction needs. Consequently, there is a climate-justice element in the protocol, which implies the participation of each individual in contributing to reducing GHG emissions. This, in turn, can only be considered from the point of view of consumption, even on a national level. Rich countries might otherwise see a constant decline in emissions—despite increasing consumption levels—because of increased imports of manufactured goods (Munksgaard and Pedersen, 2001; Bruvoll, 2006). Second, in countries or regions that have established emission trading schemes, such as the EU, only large emitters are considered in trading, leaving major parts of the emissions unaccounted for.

Consumption is commonly understood to be the final purchase of goods and services, and every other commercial activity is some form of production. The oil crisis of 1973 was followed by the development of a hegemonic stream of research and an analytical tradition which focused on how physical factors (e.g. the thermodynamic characteristics of buildings), environmental contexts and energy costs affect energy consumption and consequently can be used as a framework to reduce it. An alternative line of research focused on lifestyle, social and behavioural factors as major driving factors of energy consumption (Adua, 2010). The first line of research assigns people a limited importance in energy savings, which is mostly limited to their rational response to energy costs. The energy prices and individual economic calculations, driven by self-interest, are considered as the major determinants of decisions regarding energy consumption and savings; it is assumed that all individuals behave alike.

The second line of research questions this approach. Contrary to mainstream economics, it is clearly multidisciplinary and assesses how cultural, social and behavioural factors impact energy consumption and conservation. Incidentally this approach is well prepared to consider the Jevons paradox or rebound effect, stating that efficiency improvement in the use of a resource leads to a higher consumption of it.

These intellectual frameworks initially relate to an energy crisis context, prior to the emergence of the climate change issue. Yet the considerations regarding energy and its conservation can, *mutatis mutandis*, be applied to greenhouse gas emissions and their mitigation. It is thus not surprising that the IPCC reports, which consist in an assessment of the literature, reflect both the divide between these two approaches and the imbalance between them (Shove, 2010).

The issue of consumption has been largely disregarded in the fourth IPCC assessment report (IPCC, 2007). The 5th report (henceforth AR5) mentions the interest of a double view on national emissions inventories (production or consumption, taking into account international trade) (IPCC, 2014: pp. 305-306). The assessment of literature in chapters 4 and 5 of working group 3 examine consumption and lifestyles as drivers of emissions from production (IPCC, 2014: pp. 307-308 et 387-389). Nevertheless, it can be said that the AR5 does not give consumption the importance it should; this partly reflects the limited volume of existing research and literature. Chapters 4 and 5 of the AR5(working group 3) privilege an approach through «behaviour» (rather than lifestyles): why are individuals reluctant to adopt the mitigation solutions given by technology or economic incentives? The goal assigned to behavioural economics (IPCC, 2014, chapter 5, p. 388) is to alleviate such barriers which reflects an utilitarian or manipulative vision of science (Schubert, 2017; Shove, 2010).

This is far from recognizing consumption and lifestyles the importance they have in the whole mitigation potential, which could have been done by devoting in the working group 3 contribution to the AR5 a chapter dealing with consumption and lifestyles as it is the case for each economic sector (agriculture, industry etc). Nevertheless, it must be noted that within some sectoral chapters (e.g. industry chapter 10) there is a quite significant shift in the approach between the two last assessments; besides the production process and its emissions, the use of products and the services they yield are now also taken into account (IPCC, 2014, pp. 745-746), which is a quite significant progress.

### Defining 'policy'

'Politics', 'polity' and 'policy' are the three dimensions of 'governance', which means societal steering and "coordination of independent actors based on institutionalised rule systems" (Treib *et al* 2007: 3). The initial policy analysis mainly considers the *policy-dimension*. Knill and Tosun (2012: 4) define policy as "the outputs of a political system, i.e. the decisions, measures, programmes, strategies and courses of action adopted by the government". 'Policy' can be anything expressed in public speeches or statements by government representatives, press releases from government and the different departments, green papers, white papers, and other official documents regarding government programmes, strategies and courses of action. However, for our purposes, we have applied a narrow definition of 'policy', and mainly think of policy as plans, strategies and tangible steering instruments designed to achieve policy goals that are approved through political processes (Treib *et al* 2007: 2) and thus manifested in official documents like government green papers, white papers, propositions and legislative acts.

We also need to clarify what we mean by '*climate*' policy. It is not immediately evident how to delineate and understand what 'climate' policy encompasses for analytical and comparative purposes, as pointed out by Lundquist (1996: 16). There are, according to Lundquist, three ways to define [climate]<sup>1</sup> policy:

1. A functionalist definition – i.e. policies that are specifically aimed at affect the natural environment/climate system (e.g. 'a climate tax')
2. An institutional definition – i.e. policies decided and acted upon within the designated political or administrative system (e.g. by a 'ministry of climate policy')
3. A 'by purpose' definition – i.e. all possible policies that regulate polluting activities

As such, when we refer to climate policy, the understanding of what this means sits somewhere between Lundquist's second and third definition. For the HOPE-project, climate policy refers to both policies coming out of political and administrative systems whose key task is to deal with climate-related issues, but also to any policy that either directly targets or indirectly may affect household GHG emissions.

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<sup>1</sup> We have substituted 'environmental' with 'climate' for the purposes of the HOPE-project, as this substitution does not change/affect the point of relevance that Lundquist makes when originally referring to environmental policy.

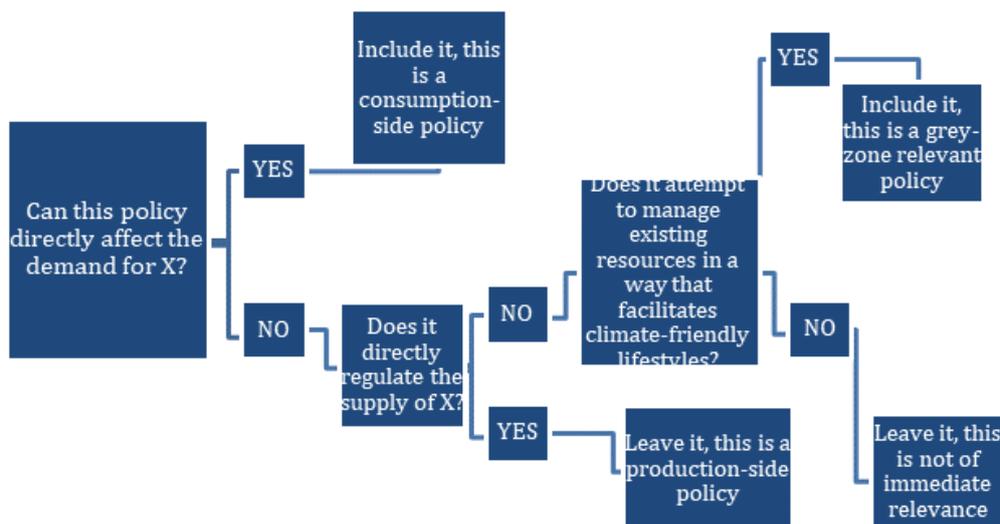
Furthermore, we also need to clarify what we mean by ‘GHG emissions’. The HOPE project is set up to include all categories of GHG emissions (not merely CO<sub>2</sub>; the most relevant to include in addition is methane as part of food related GHG emissions), and both direct and indirect GHG emissions. ‘Direct’ implies emissions that are directly emitted from household activities, like driving your car or heating your home with firewood. ‘Indirect’ implies GHG emissions that are emitted ‘somewhere else’ than where the activity in question takes place; e.g. heating your home with electricity, and if this electricity is produced in a coal power plant; or the food you consume and the GHG emissions involved in producing, distributing and retailing of this food.

All in all, this gives a wide scope for analysing relevant policies; which of course is a major challenge when it comes to arriving at a comprehensive analysis in the end. This leads us to the very important task of defining clear system boundaries for our study.

### System boundaries

It should be noted that drawing system boundaries that distinguish *consumption-side* from *production-side* policies is somewhat difficult because of the blurry area that is from now on referred to as the ‘grey-zone’ situated between the two. For instance, it may seem clear for most people that legislation determining building standards of private houses, fiscal policy schemes designed to make electric cars seem more desirable to consumers than fossil cars, and environmental labelling of consumer goods are directly tied to the consumption-side. However, when we look at policies determining the percentage of biofuels mixed into aviation fuel, including domestic and EU-aviation into national (if applicable) and EU emission trading schemes, and policies stimulating the production of biofuels at national and EU level, we are entering a grey zone. Such policies do affect household GHG emissions.

Production-side and consumption-side policies are intrinsically connected when it comes to total GHG emissions. Even so, we cannot include both production-side and consumption-side policies as the scope would simply be too broad, and since the focus of this research project is on the immediate *consumption-side*. However, we have included policies in the grey-zone leaning towards the consumption-side. We could say that these indirect consumption-side policies would be policies that attempt to manage *existing* resources in a way that facilitates climate-friendly lifestyle choices. Examples of such policies would be city planning policies, fuel-mix directives etc. Note that policies stimulating production of biofuels count as ‘production-side’ policy. The figure below illustrates how we have worked our way through lists of potentially relevant policies to differ between ‘relevant’ and ‘not relevant’.



**Figure 2** Flow-chart with system boundary control questions for differentiating between production and consumption related policies

The logic illustrated in the above flow-chart has been borrowed from economics; supply and demand. In brief, the economics-jargon captures the essence of our system boundaries: we are interested in the consumption-side, and therefore ‘demand’. If policies directly affect the demand for a good (defined as X); be it el-cars because of tax-exemption or because fossil fuel cars are taxed higher, or locally produced food because of information on the mileage (and carbon footprint) of long-travelled food, these are policies that may directly affect demand for a good. The grey-zone policies, i.e. policies that attempt to manage existing resources in a way that facilitates climate-friendly behaviour, may not directly affect demand per se. However, policies like determining building-standards, or banning certain climate-unfriendly activities play a facilitating role for leading climate-friendly lifestyles. They do this without directly regulating the supply of a good, for example increased production of biofuels or directly regulating the ratio of red meat production.

Furthermore, the HOPE project is aiming at the consumption categories that contributes the most, directly and indirectly to household GHG emissions; namely that of food, transportation and housing. In addition, we have included a fourth category of ‘residual consumption’.

### Data sources and categorisation of policies

We have considered three policy levels: national level, regional level (in which the case-city is located) and local level (the case city). The data collection has been done as follows:

1. Starting point:
  - Search for policy studies done on consumption-related climate policy for each country
  - Look up climate policy reporting documents, such as the rather comprehensive 6<sup>th</sup> National Communication to the UNFCCC<sup>2</sup>
  - Use available databases, eg. for the case of energy efficiency related policies. Information on what energy efficiency policies exist in EU member states plus Norway can be found on <http://www.measures-odyssee-mure.eu/>
2. Identify central terms used in the policy lingo when dealing with private or household consumption and climate change or GHG emissions, e.g. ‘consumption’, ‘private consumption’, ‘consumer’, ‘consumer pattern’, ‘life-style’, ‘household’, ‘private household’
3. Map out the sectorial policy areas that target the HOPE-focus points (food; transportation; housing; residual consumption)
4. Scan through national government databases of green papers, white papers, propositions and legislative acts
  - Apply HOPE-relevant thematic filters (if they are offered in the search function for the database)
  - Enter some of the key terms identified in step 2 in the search function of the database if such a function is available
  - Focus on the sectors identified in step 3
5. Scan through regional and local government databases, doing the same as in step 4.
6. If needed, reach out to key policy personnel (national government departments, NGOs, etc.) to get tips on where to look or what to read

Each identifies policy of relevance is categorized in accordance with the coding scheme in the table below and included in a common data basis. A total of 248 policies have been identified as relevant for our assessment and thus been coded in accordance with the table below.

**Table 2** The coding scheme

Policy categorisation	Variables
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<sup>2</sup> PDF files for each country has be downloaded from [http://unfccc.int/national\\_reports/national\\_communications\\_and\\_biennial\\_reports/submissions/items/7742.php](http://unfccc.int/national_reports/national_communications_and_biennial_reports/submissions/items/7742.php)

Policy area	<ul style="list-style-type: none"> <li>• Housing</li> <li>• Mobility</li> <li>• Food</li> <li>• Others</li> </ul>
Policy level	<ul style="list-style-type: none"> <li>• National</li> <li>• Regional (meaning “sub-national”)</li> <li>• Local (case city)</li> </ul>
Policy measure	<ul style="list-style-type: none"> <li>• Information</li> <li>• Subsidies</li> <li>• Planning (like, a climate plan)</li> <li>• Physical measures (like constructing public bike lanes)</li> <li>• Tax</li> <li>• Regulation by law (e.g. parking restrictions)</li> </ul>
Anticipated mechanism of household consumption changes	<ul style="list-style-type: none"> <li>• Improve efficiency (e.g. install more effective light bulbs, increase insulation of houses etc.)</li> <li>• Substitute consumption (e.g. support public transportation for it to substitute private car).</li> <li>• Reduce consumption (e.g. ban on cars in city centres)</li> </ul>
Anticipated category of GHG emissions to be reduced	<ul style="list-style-type: none"> <li>• Mostly direct emissions (=emissions that physically are located <u>within</u> the national border of the country in question)</li> <li>• Mostly indirect emissions (=emissions that physically are located <u>outside</u> the national border of the country in question)</li> <li>• Equal direct and indirect</li> <li>• Not able to assess</li> </ul>

## The quantitative summary of identified policies

Below are given some figures of the distribution of identified policies in relation to the categorization presented in table 2. In the appendix, we have presented each of the policies per country. It is important to note that we have not differentiated between the “size” of a policy to be counted as “one”; e.g. a national CO<sub>2</sub>-tax is counted as “one policy” on par with a local parking restriction. Thus, drawing conclusions by comparing policy profiles across consumption categories, levels of government and between countries must be done with great caution.

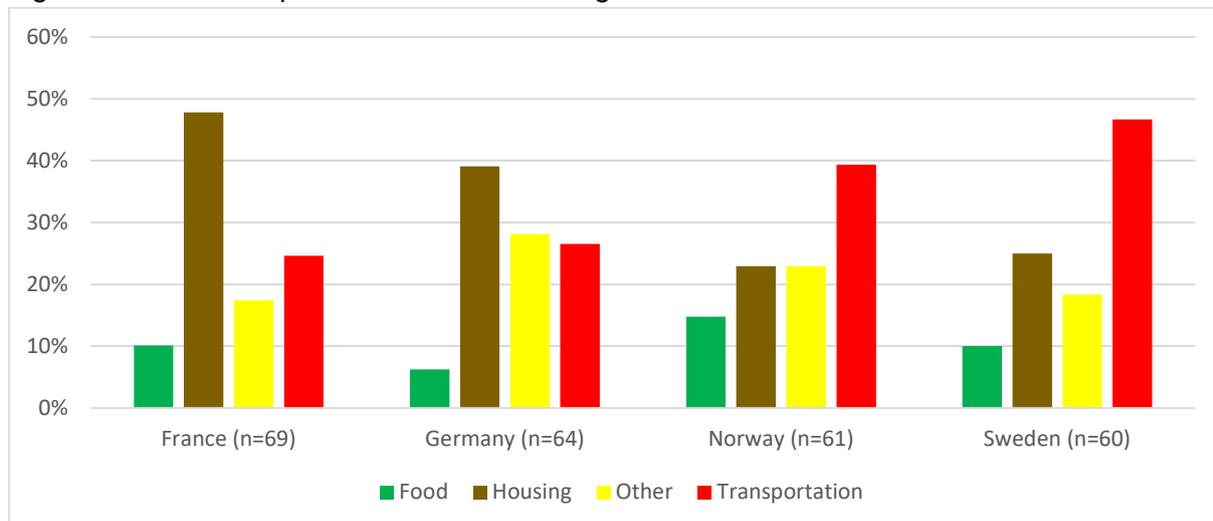
### Number of identified policies

The number of identified policies judged to be relevant is approximately similar in each country, with some more identified in France – cf. table below.

**Table 3** Number of relevant policies distributed in consumption categories

Consumption categories	France	Germany	Norway	Sweden	Sum
Food	7	4	9	6	26
Housing	33	25	14	15	87
Transportation	17	17	24	28	86
Other	12	18	14	11	55
<b>Sum</b>	<b>69</b>	<b>64</b>	<b>61</b>	<b>60</b>	<b>254</b>

In the figure below we see that there is a slight difference as to the policy area focus in the different countries. The two Nordic countries have a higher share of their policies aimed at reducing GHG from transportation than France and Germany, whereas the two latter have a higher share of their policies aimed at housing.



**Figure 3** Share of policy measures within four main categories of household consumption (sum = 100% per country)

### Policy measures

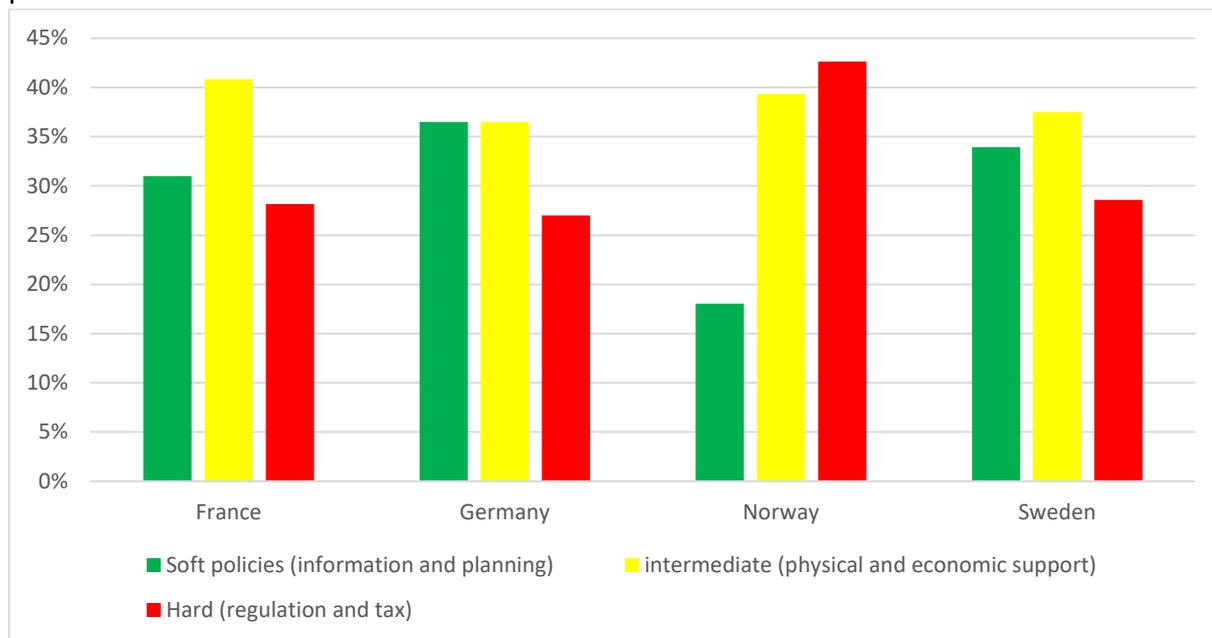
In the table below we have presented the number of policies relating to their category of policy. The policies are distributed in accordance to their final category, so if a policy involves *first* information (e.g. about the possibility to apply for funding) and *then* financial support granted to the applicants – then it is termed as “economic support”. Or, if a policy starts by making a plan, then money is allocated, and finally a public physical structure is constructed (e.g. a new bicycle road) – then it is termed as “physical”.

**Table 4** Number of relevant policies distributed in policy measure categories

Policy categories	France	Germany	Norway	Sweden	Sum
Economic support	24	23	18	10	75
Information	20	23	10	16	69
Physical	5		6	11	22
Planning	2		1	3	6
Regulation	14	17	17	9	57
Tax	6		9	7	22
<b>Sum</b>	<b>71</b>	<b>63</b>	<b>61</b>	<b>56</b>	<b>251</b>

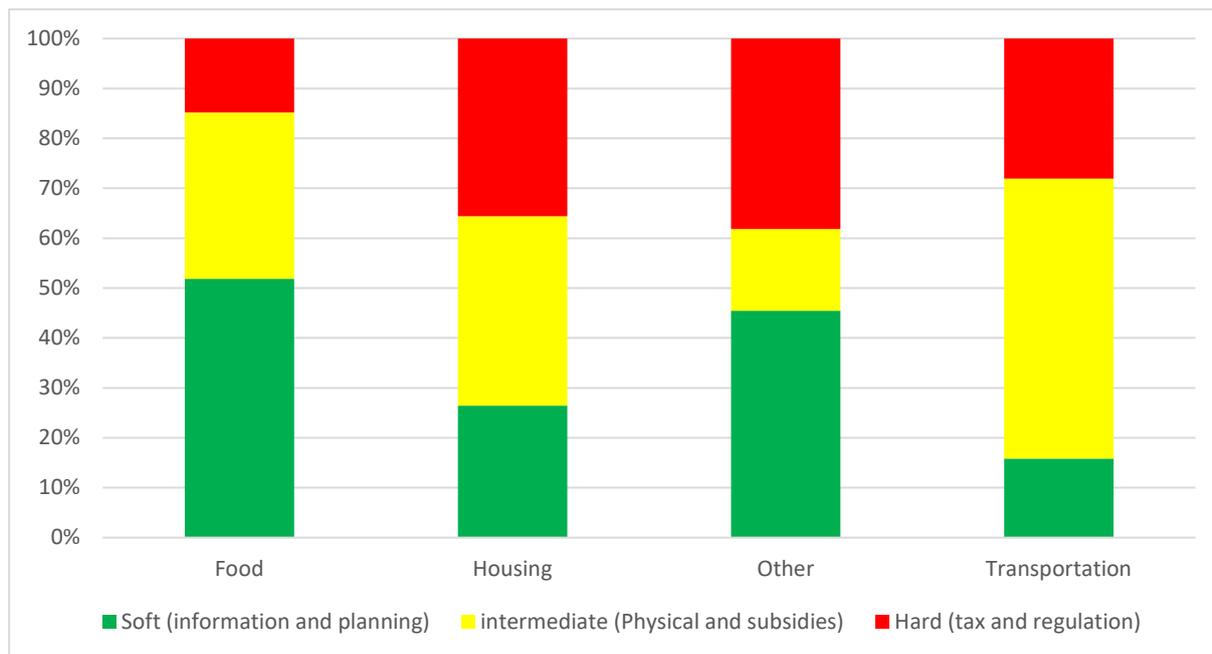
### Using “sticks” or “carrots”?

In the figure below we have merged the policy categories into three main groups: Hard (=regulation and tax), soft (planning and information) and intermediate (physical and economic support) according to Bemelmans-Videcet al (2011). Also, here we see a slight difference among the countries, in which Norway appears to have a slightly “harder” policy profile than the other three countries.



**Figure 4** Share of soft, intermediate and hard policy aimed at reducing household GHG emissions (sum = 100% per country)

When looking across all four countries, and comparing the use of different policy categories and the extent they address the different policy areas, we see a slight difference in which ‘food’ involves a higher share of ‘soft’ and lower share of ‘hard’ policies, whereas ‘housing’ and ‘other’ involves a higher share of ‘hard’ policies – leaving ‘transportation’ in an intermediate position.



**Figure 5** Share of soft, intermediate and hard policy measures within four main categories of household consumption (sum = 100% per main consumption area for all four countries)

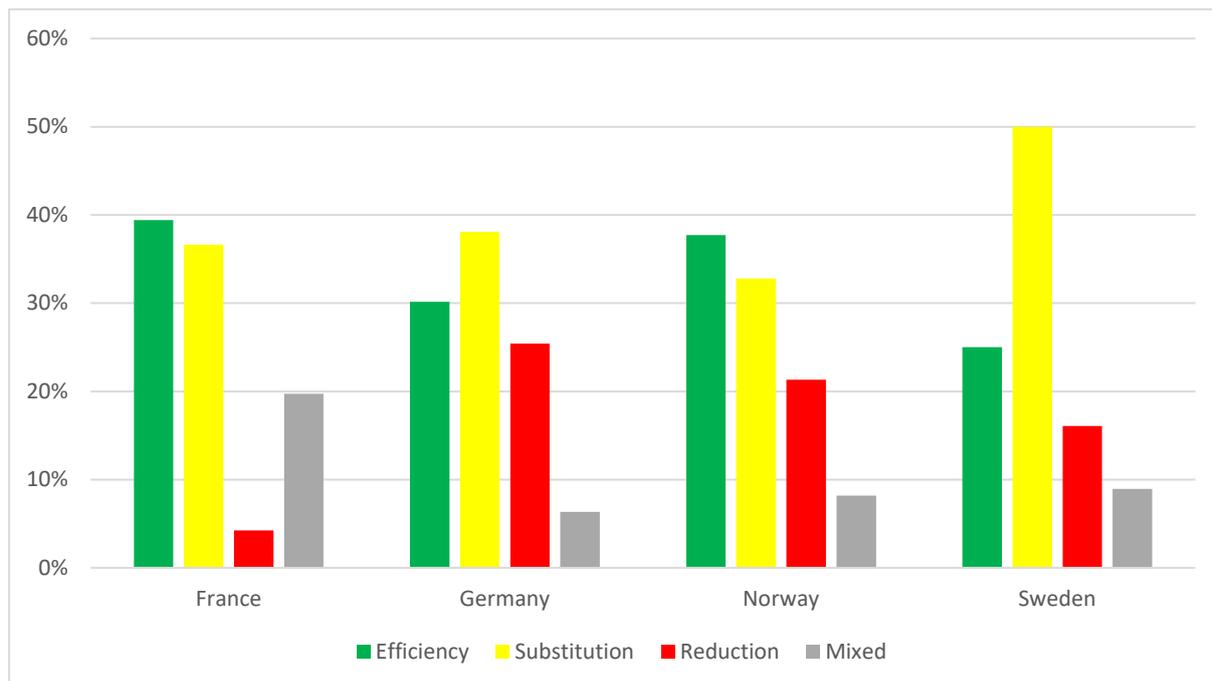
### Mechanisms of consumption changes

In the table below we have presented the number of policies relating to their expected mechanism when it comes to change consumptions – and subsequently reducing GHG mechanisms. Mixed implies that a policy may induce more than one mechanism (e.g. land-use planning may aim at stimulating the combination of reducing transport needs and stimulate for substitution private car by public transportation).

**Table 5** Number of relevant policies distributed in categories of mechanism for GHG reduction

Mechanisms of GHG reduction	France	Germany	Norway	Sweden	Sum
Efficiency	28	19	23	14	84
Substitution	26	4	5	5	28
Reduction	3	16	13	9	41
Mixed	14	24	20	28	98
<b>Sum</b>	<b>71</b>	<b>63</b>	<b>61</b>	<b>56</b>	<b>251</b>

The next figure illustrates that France is a bit different compared with the three other countries in the sense that they have a particularly low share of policies involving a reduction of consumption. Still, the general picture across the four countries is that the efficiency and substitution strategy clearly dominates compared with the reduction strategy.



**Figure 6** Share of anticipated reduction mechanisms applied to identified policy measures for reducing household GHG emissions (sum = 100% per country)

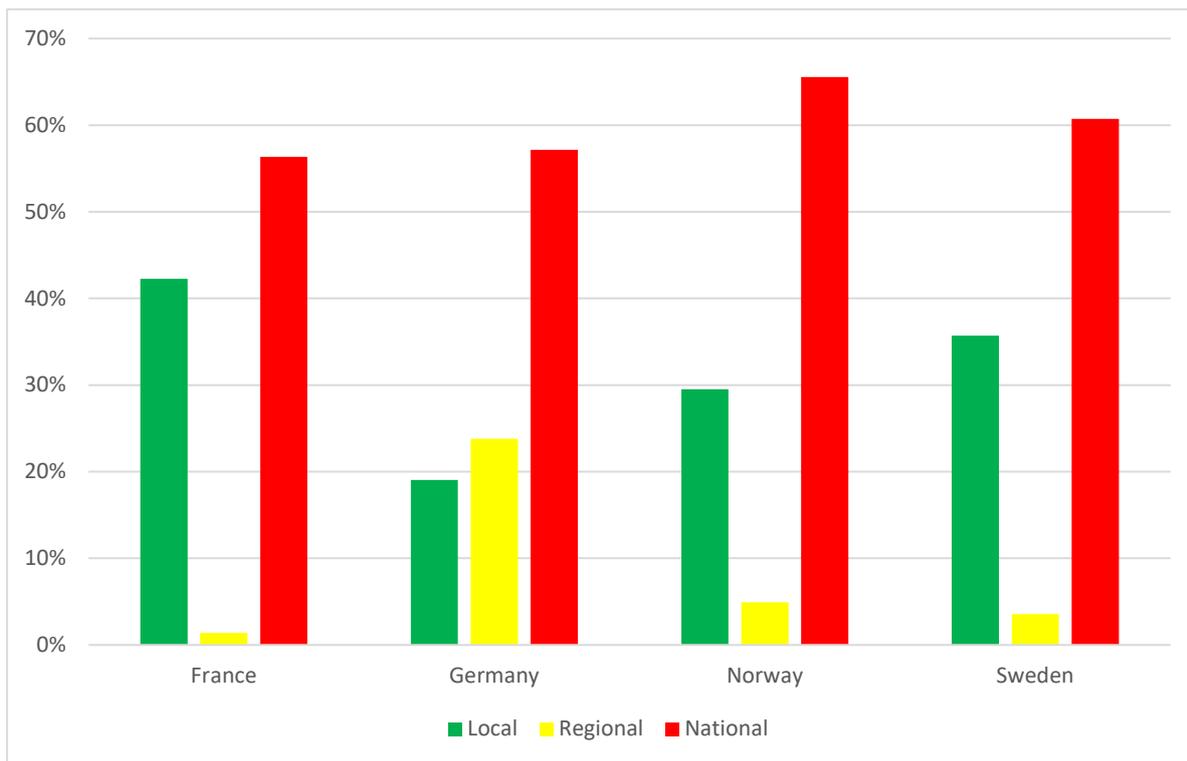
### Level of policy implementation

In the table below we have distributed the policies in accordance to the level of policy implementation. Thus, for the case of 'local level' we have not differed between the case in which the local level acts of behalf of national government (policy structure for national government) – e.g. to implement national waste management standards – and the case in which local authorities are independent policy actors (e.g. utilise the possibility of introducing parking limitations in accordance with the Planning and Building Act) since it proved difficult to make a clear-cut between these two sub-categories of 'local level implementation'.

**Table 6** Number of relevant policies allocated to level of policy implementation.

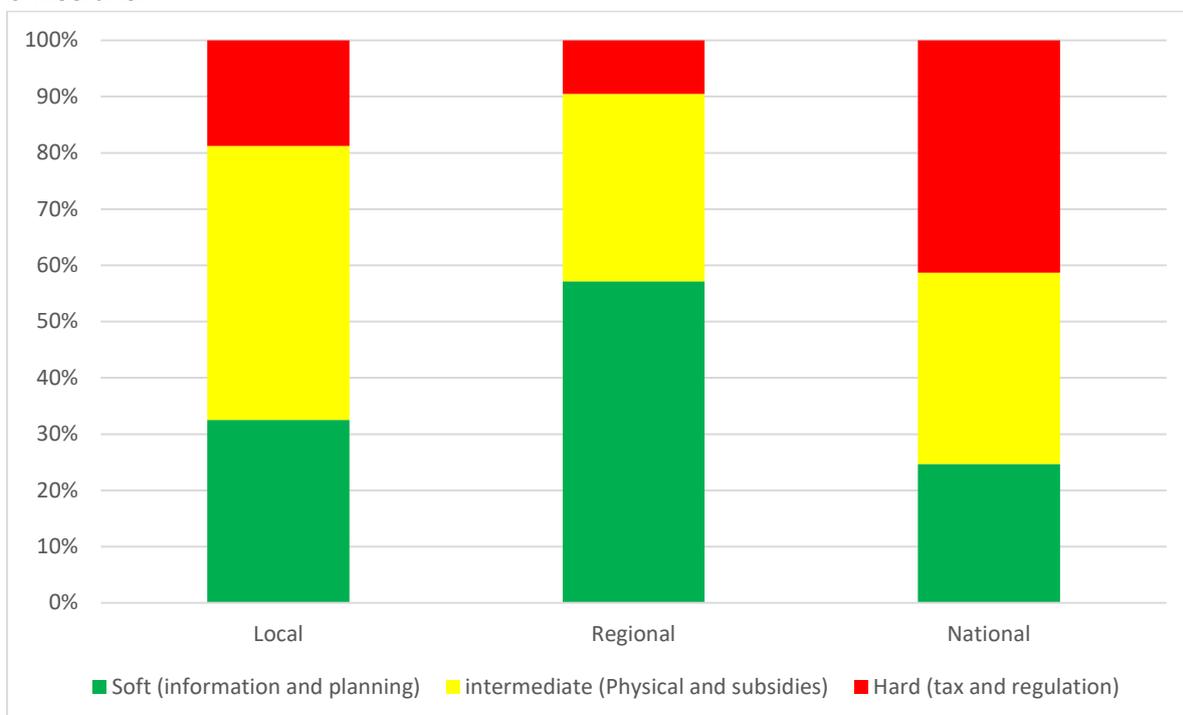
Level of policy-implementation	France	Germany	Norway	Sweden	Sum
Local	30	12	18	20	80
National	40	36	40	34	150
Regional	1	15	3	2	21
<b>Sum</b>	<b>71</b>	<b>63</b>	<b>61</b>	<b>56</b>	<b>251</b>

The figure at the next page illustrates the important current role local level of government has in implementing policies aimed at reducing household GHG emissions. Furthermore, it also illustrates two facts relating to the current role of regional governments: Firstly, that the regional level in general has a minor role, and secondly that the formal status of the regional level varies – with Germany ("Länder") representing a country in which the formal position of the regional level is stronger than in other none-federal countries.



**Figure 7** The share of different levels of government as main responsible for implementing the identifies policies for reducing household GHG emissions

The figure below illustrates that the regional level involves a slightly more ‘soft’ policy strategy and the national level a slightly more ‘hard’ policy as compared to the local level of government when it comes to implementing policies aimed at reducing household GHG emissions.



**Figure 8** The policy profile of different levels of government as main responsible for implementing the identifies policies for reducing household GHG emissions

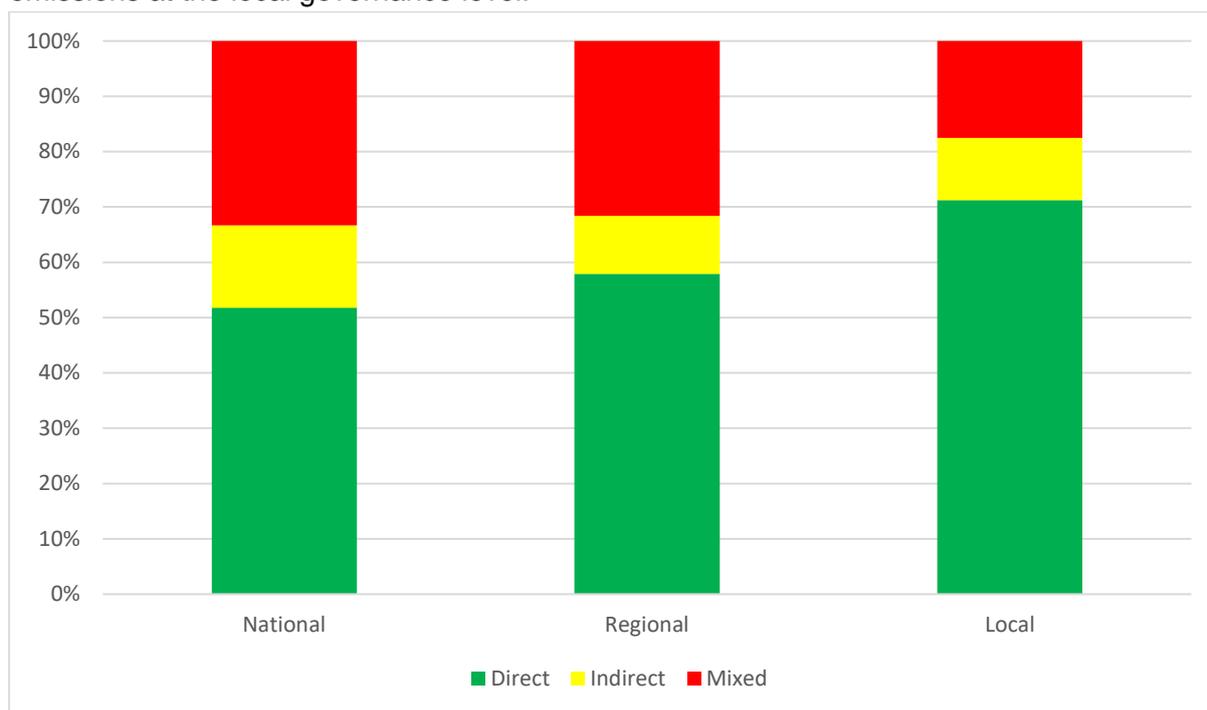
### Direct versus indirect emissions

The outset of the HOPE project has been to apply a wider system boarder for GHG emissions; i.e. to include the indirect emissions of household consumption (e.g. from producing the food that are consumed by the household members) – not merely the direct emissions that take physically place in relation to where the consumption takes place (e.g. emissions from driving your car). In the table below we have distributed the policy measures in accordance to what kind of GHG emissions they may influence (direct, indirect or mixed) We were not able to distribute all the measures (a total of 11).

**Table 7** Number of relevant policies allocated to level of policy implementation and the main category of GHG emissions to be addressed

Level of policy-implementation	Direct reduction of GHG emissions	Mixed reduction of GHG emissions	Indirect reduction of GHG emissions	Not able to detect
Local	57	9	17	
National	73	21	40	9
Regional	11	2	3	2
<b>Sum</b>	<b>141</b>	<b>32</b>	<b>60</b>	<b>11</b>

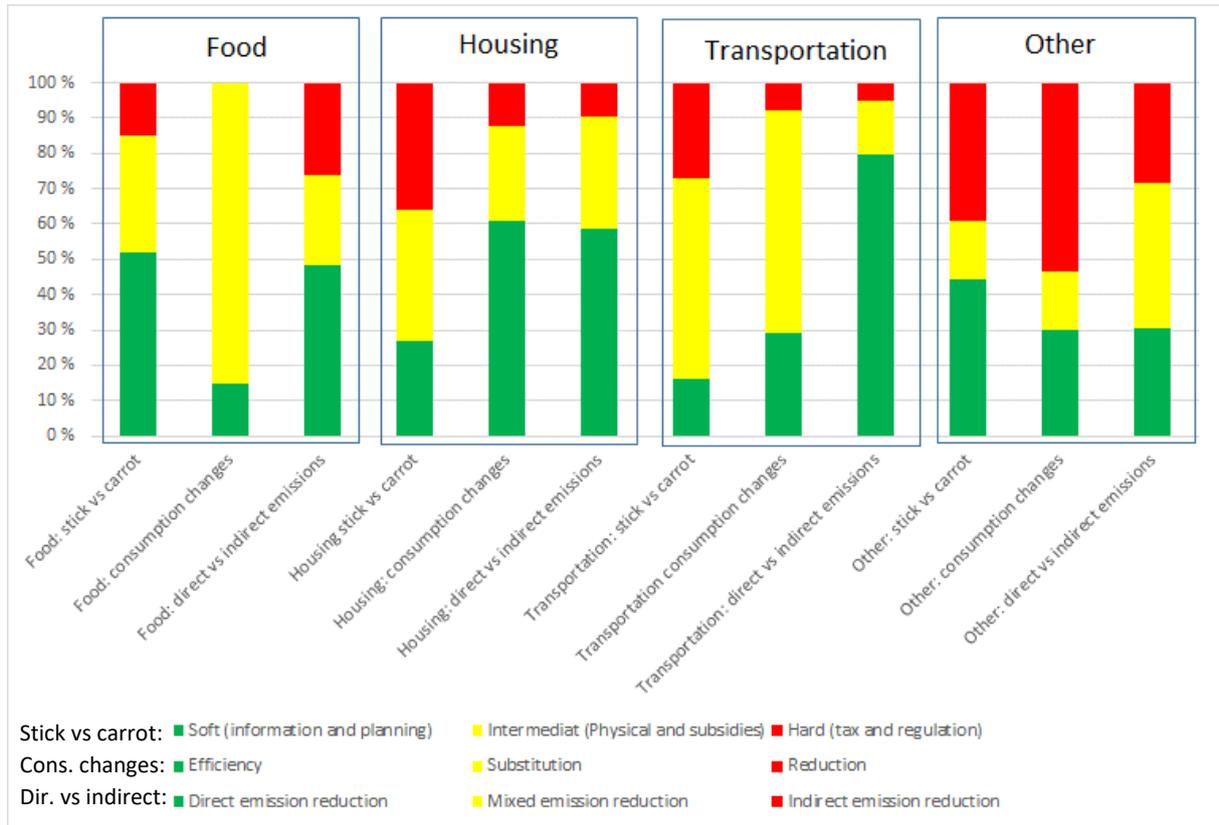
The figure below illustrates that there are only small differences between the levels of policy implementation; but with a slightly higher share of policies aimed at directly reducing GHG emissions at the local governance level.



**Figure 9** The main categories of emissions to be addressed of different levels of government as main responsible for implementing the identifies policies for reducing household GHG emissions

### Policy profile

The figures presented above illustrate that there are some differences between countries – and we will discuss those more in detail in the next chapter - but the variation between the four main consumption categories appears to be somewhat larger. The figure below combines three aspects of these differences: the variation between using “stick and carrots”, the anticipated change in consumption (improve efficiency, substitute or reduce), and the extent that policies address direct versus indirect GHG emissions.



**Figure 10** Variation in policy profile among the four main categories of consumption

## The qualitative summary of identified policies

The section above gives some very indicative impressions about the profile of current climate change policies; that is how they aim at and affect household GHG emissions. In the following section, we summarise the impression from reading through the documents describing the policies. A more thorough and theoretical and analytical stringent qualitative analysis is presented in a scientific article.

Across the four countries there is a common background of policies which include both broad items such as thermal regulations for housing and current and future emissions from cars, or policies which have a much more restricted scope such as the withdrawal of incandescent light bulbs. For EU member states (such as Sweden, Germany and France) as well as Norway (being part of the European Economic Area agreement: EEA), such policies refer to a common EU background. Thus, Norway, not belonging to the EU, does not appear to show significant differences for this set of policies. Conversely, the quantitative analysis indicates some policy items appear to be specific to a given country, reflecting either the focus on a particular problem within a country or differences in the approach of political action (e.g. more or less market-based or more or less based on regulations). Below we will give a brief qualitative assessment of the identified relevant policies. The discussion is structured per policy area – in which we first comment on commonalities across the four countries, and then go on to comment on differences.

### Housing

Policies regarding housing have been sorted out into the following domains: Buildings, land-use planning, financial measures and information.

#### *Buildings*

All countries have regulations on the use of energy in *buildings*; for those who belong to the EU as well as EEA it reflects European directives. The level of demands for the medium-term (2020) is also forecasted. These regulations naturally distinguish between geographic areas and existing new buildings. More specifically, Sweden forbids any loss of efficiency when an existing building is refurbished. Such regulations are transcribed into labels which ensures that the performances will be communicated to the owners or tenants when they buy or rent a dwelling; the upper classes of the label can also open the access to subsidies or low interest rate loans.

The obligation of an annual checking of the heating system is also applied in all countries. This legislation was initially designed for safety and health reasons (pollution); GHG emissions now add up to these motivations - though they seem to be introduced in the rather soft manner, reflecting the fact that what was previously in place implicitly took into account the GHG issue. Germany goes somewhat further with mandatory improvements when some pollution-thresholds are exceeded.

Other measures regarding buildings which are common to several countries can be quoted: a general ban on incandescent lightbulbs some measures to facilitate the management of energy in condominiums where traditionally a minority can oppose improvements e.g. France and Norway.

Some policy items relating to housing appear to be *specific* to a country or two:

- a ban on oil burners as a main source for heating from 2020 on, in Norway
- the gradual moving away from electric heating in Sweden
- the mandatory use of renewable energy (accompanied by subsidies) in new buildings in Germany for heating and cooling systems
- feed-in tariffs (Germany and France) promoting increase in prosumer activities?

#### *Land-use planning*

The issue of housing also includes the surroundings of and location of the building; thus, relating to *land-use planning*. Local and regional levels are given a framework by the national

level in particular to limit urban sprawl and to densify urbanisation. Funding can accompany the local level. Note that in Norway, for new buildings, connecting to a local heating network - when it exists – can by means of a specific local decision been made mandatory. This possibility exists in some German cities as well.

A policy measure related to land-use planning that is absent in our survey, is an explicit measure of setting a maximum size per housing unit. This was a policy at least in Norway many years ago, as a condition for achieving government subsidies channelled through the National Housing Bank; could be reinstated for climate reasons. In most countries, the Planning and Building act allow for local authorities to do this.

#### *Financial measures*

The *taxation* of the carbon content of energy varies across countries and is accepted differently by consumers. In Sweden, a rather heavy carbon tax (around 100\$/t) is applied to fuels for heating and aims at favour substitution. Norway also has ambitious goals getting rid of oil and kerosene in individual housing by 2020. France is in a more complicated situation with the failure to implement an explicit (though low) carbon tax a few years ago; part of the taxation of fuels is labelled as related to emissions, initially through an internal shift between the components of the global taxation, but has now gained autonomy from the other components and is planned to increase annually. In Norway, a tax on electricity also exists with the aim of reducing consumption and its accompanied emissions. A similar tax also exists in France (15% of the electricity bill); it is used to finance solar panels, help low-income households etc. A similar tax exists in Germany.

*Subsidies* generally exist for solar panels and, more generally, renewable energy and heat pumps. They are often funded by a tax on electricity (France, Germany). National measures are translated into numerous local initiatives. Subsidies also exist to help upgrade thermal performances, either as direct subsidies or tax credits or reduced VAT rates - e.g.:

- a tax credit for the « energy transition » in France, and a similar measure in Germany
- the ENOVA framework in Norway
- specific funding exists for heat networks, in France and Sweden

All of the national policies are implemented, with some specific features at a local level. e.g. specific measures that can be directed towards low income households.

#### *Information*

There are many examples of «*energy certificates*» which are mandatory for energy suppliers and are designed to favour the use of renewable energy: in France and in Sweden. Only renewable energy has to be certified in Germany. Also, there is an example of loans linked to energy performances: from the state housing bank in Norway and zero rate loan in France («*éco PTZ*»).

Policies aiming to *inform* consumers are both diverse and quite numerous. Besides, economising energy is integrated to teaching in Sweden. In France, a specific effort is directed towards the training of professionals which has applications at the local level. Energy bills can be designed to allow households a better consciousness of their consumption: for instance, in Norway and in France with the presentation of electricity and gas invoices.

## Transportation

The policies regarding transport are sorted into three categories: cars, public transport, fuels.

#### *Cars*

Some policies regarding cars offer similarities with those dealing with buildings; many instruments are similar: financial measures, regulations and information.

The *taxation* at the registration level depends on the size of the car which is more or less correlated to emissions: these are introduced more or less explicitly. A bonus/malus can be applied when the car is purchased. Most countries have an annual taxation of cars correlated

to their power, except France where it was abandoned in 2000. Electric and hybrid vehicles can be subsidised, and some taxation measures on the use of road infrastructures can also be related to emissions.

The *regulation* of current emissions and their future is dealt with by European policies which are applied in the different countries. The access to infrastructures for cars using alternative sources of energy can be favoured; in addition, such infrastructures can be subsidised. Part of these decisions are taken at the local level. Traffic restrictions are more frequently used with a focus on the local level. Congestion and pollution are the drivers of such restrictions. Pollution peaks are more and more taken into consideration; clearly in the nearby future, labels attributed to cars are going to be used instead of restrictions based on registration numbers (Paris). The purchase power in of administrations can also be used for electric vehicles, particularly at the local level. There seems to be a general move towards the strengthening of speed limits, though it might be disputed in public opinion. Also, we see that local policies are favouring car sharing, whereas policies regarding tolls and parking are often determined at the regional or local level. In all countries, we see that energy labels exist for cars just as they do for buildings.

### *Public transportation*

All countries insist on the development of *infrastructures* for public transportation. A set of policies concern bus transport with the development of dedicated lanes or the purchase of electric or hybrid buses. There is also a renewed interest for rail transport which faces ageing infrastructures (France as well as Norway) which in turn necessitating additional care. In parallel an effort is made for high-speed train tracks which have the possibility of being fed by renewable or nuclear electricity. Such national policies are strengthened by local ones including incentives to get rid of private cars in city centres or to provide free-of-charge public transportation in some situations.

Overall there is a large interest for policies promoting *cycling*, which at the national level include a general framework often accompanied by funding measures. Policies at the local level naturally complete the national ones; but they are quite diverse and occasionally directed towards helping NGOs to promote cycling.

There is also an increased consciousness about the importance of *aviation* in emissions from households which translates into various – but still limited - attempts of taxation.

### *Fuels*

The policies on *taxation* of fuels for transportation reflect more or less those adopted for housing. They are particularly strong in Sweden, with a high taxation for the vehicles emitting more than 111 g of CO<sub>2</sub> per kilometre with, as a counterpart, incentives for cars emitting less than 50 g per kilometre. Similar developments can be found in Germany. There are also examples of reduced tax on biofuels, providing they are a sustainable.

The countries in question have also implemented *legislation* on the composition of fuels, with a mandatory introduction of a certain share of biofuels, including for aviation in Norway.

*Information* is to some extent used; e.g. gateway on sustainable transport for individuals, information on air quality, and communication in particular to render more visible the sustainable activities from stakeholders.

## Food

There is a general tendency, within a European framework, to promote local and seasonal food products. This leads to a variety of policies across the four countries:

- market subsidies, for instance in France subsidies for converting to or to maintain organic farming
- in Sweden support to local food-processing industries
- in France, policies in favour of local commercial circuits (linked to the promotion of organic farming)

- a regulation of the attribution of labels and the controls of labels; more specifically in Norway a focus is put on voluntary labels
- support for accessing markets
- fiscal instruments: differentiated taxation according to products

All of these measures can be translated into regional policies, for example Norway.

A second major policy domain deals with *healthy diet*, e.g. the recommendations of the Swedish National Food Administration. This is the frame for numerous local implementations. It appears, however, that policies aimed at influencing diet choices are motivated by health goals, not climate goals. These policies are backed up by information just as for housing and transportation. For example: In Norway, a databank on local products, in Germany an information campaign on sustainable diets and a website on organic agriculture.

The diminution of *waste* volumes, collecting and recycling obviously concerns food: waste reduction and local billing initiatives.

## Others

Most of the policy domains classified under the «others» category concern transversal actions which, as such, have already been mentioned in the three previous domains: i.e. information, labelling, research, waste etc.

Each country has national *websites* on sustainable and/or climate friendly consumption oriented towards a large public: Ademe in France, in Sweden, in Germany, as well as diverse more specific information institutions. This is completed by quite a number of local initiatives.

*Teaching* also plays a role in information, as well as NGOs which are granted institutional support, legal capacities and financial support.

Many forms of *labelling* of already been referred to previously. One can distinguish between mandatory and voluntary labelling. Labelling is mandatory for equipment using energy or for some house appliances in all four countries. Voluntary labelling reflects the degree of credit shown to the self-regulation of stakeholders which explains some specificities in the four countries:

- an attempt to control the profusion of labels in France
- information website on labels in Germany
- at a local level the creation of a brand for the territory in the pays d'Aix

*Waste* policies aiming to reduce the volume of wastes are common in all countries. There is also everywhere a will to imply the responsibility of the producer regarding waste - leading to some particular sectoral objectives, e.g. for textiles or disposable beverage cans. Consumers can be directly implied through billing waste disposal according to quantities.

Reducing waste can also come from promoting *repairs* and long-lasting products. Different policy measures are used: information, the reduction of VAT on repairs; and the idea of a taxation of ephemeral goods.

In some countries, there is an effort on research, innovation, dissemination of information on sustainable consumption. In Sweden at the national level, a platform on sharing and circular economy has been set up, and local initiatives exist in both Norway and Sweden.

## Discussion and conclusion

In general, we find very few differences in policy profile between countries and between national and local/regional level across countries – but some differences between consumption levels (across countries).

Whereas an important number of policies influencing GHG emissions from households have been identified, almost none are justified by the direct will to reduce emissions from households, related to the fact that they are a crucial the variable for mitigation. Instead, most of these measures are co-benefits of energy policies. Saving energy has long history and it is obviously linked to geopolitical and economic considerations. These policies appear initially with the first oil crisis at a time when climate change was not recognised as a problem. Speed limits, the quest for energy efficiency in cars, then in housing, date from that period even though the efficiency of such measures has largely been offset by the rebound effect (Santarius et al, 2016).

A significant number of measures also appear as co-benefits of measures dealing with (air) pollution, themselves driven by health considerations. Health considerations also appear to drive some food policies (diet and organic).

In the domain of waste, mechanisms appear to be similar. Waste policies largely pre-exist to GHG mitigation considerations. The increase in waste volumes from households has been identified as a serious problem since the 1970s. Gas emissions from landfills or from other forms of waste treatment has been dealt with during several decades independently of GHG considerations.

GHG emissions from households, with the connected lifestyle issues, definitely appear for the moment as a weak driver of policies. This seems clear when looking at carbon leakages linked to consumption. No existing climate policies are in place with the aim of reducing carbon leakage from consumption. Massive literature showing the importance of the issue exists, but with little or no effect (Peters, 2010). The policies that have an (intentional) effect on carbon leakages from consumption (favouring local products, preferential purchase of National made goods) are driven by wider and more traditional considerations: fighting against deindustrialisation or the shortcomings of free trade agreements. In the latter case, GHG emissions do appear as an important argument, but this has not had hitherto been able to change the rules.

In the literature co-benefits are seen as an argument to justify mitigation policies (cite).

Regarding emissions from households, for the moment, the picture is just the opposite: what impacts these emissions is essentially related to co-benefits from policies that are driven by other aspects of mitigation of climate change (energy) or even from other domains which can be related to the environment (health, waste) or not (trade).

The potential contribution of households to mitigation is frequently underlined in the literature (see e.g. Wynes and Nicholas, 2017). Yet for the vast majority of the policies identified, the effects in terms of reductions of emissions are not assessed. The reasons why emissions should diminish are more frequently expressed. The difficulties of such an assessment lie in the fact that such policies measures do not act mechanically; their effects are conditioned by many factors. Some of these are usually considered and in the integrated into such assessments (e.g. the availability of infrastructures), others are not (e.g. cultural factors). Exploring the latter is one of the main motivations of the HOPE-project.

A subset of policies identified for France illustrate this challenge. For some of the policies (those reported to the EU) the expected reduction of emissions is quantified; the assessment is both based on mechanical relations and framed by scenarios expressing different futures for the context; nevertheless, psychological and cultural factors remain ignored.

To what extent do national history and current national energy options influence policies?

The energy profile of the four countries, influenced by historical trajectories and natural endowments differ widely. Norway and Sweden and to a lesser extent France and Germany have powerful hydroelectric infrastructures which deliver renewable electricity. Norway is the only country with quite significant oil and gas resources. Germany has traditionally based a

large part of its electricity on coal and lignite. France is the only country using to such an extent nuclear (carbon-free) electricity without really wanting to move from it. These situations have an influence or not on the policies that influence greenhouse gas emissions from households. A few examples can be given.

In France, the abundance of electricity (80% of nuclear origin) , its low market cost and the associated lobbies has allowed it penetration in the heating of buildings and delayed the introduction of renewable energy (or saving technologies) in spite of the country's natural endowments. Conversely, Norway has not taken the pretence of its oil rent to delay the movement towards a more sustainable energy system, though it would have been politically easier. Germany moves away from nuclear electricity, though it seems short of carbon-free substitutes in the years to come. Sweden also has very ambitious mitigation goals, and has up through the years on many occasions stated a will to shut down its nuclear power plants. This first shows that the degree of ambition cannot be linked to the endowment but rather seems to reflect political choices. Endowments and past trajectories can in some cases delay decisions but it is not always the case (Germany). The driver for reducing emissions rather seems to lie in the synergy between values and willingness to act of the population on the one hand and the politicians on the other hand. Such a synergy seems to work particularly in three out of the four countries, whereas in France the heavy distrust the political system faces hampers decisive measures.

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## Attachment 1: Identified policies in Norway

### Food

*N°1 A variety of Information measures supporting "local Food"*

Policy level.

National

Policy actor.

Ministry of Agriculture and Food

Policy strategy.

Information.

Policy measures.

- Information campaigns about local food
- NytNorge – a label to flag that the good has been produced in Norway
- Develop the database 'Lokalmat.no' that will provide overview of local food producers and their products

Policy stage.

Proposed

Anticipated effect on household consumption.

Substitution

Actual effect on greenhouse gas emissions.

Mixed

Documents

Meld.St, 39 (2008-2009): Climate Challenges - Agriculture part of the solution

*N°2 Container deposit on containers for drinks etc*

Policy level.

National

Policy actor.

Ministry of Climate and Environment

Policy strategy.

Economic support

Policy measures.

Container deposit on containers for drinks etc. The idea is to make it simpler to recycle and gather products with hazardous or valuable materials.

Policy stage.

Implemented.

Anticipated effect on household consumption.

Incentivise more material recycling. Efficiency

Actual effect on greenhouse gas emissions.

Indirect

Documents

Avfallsforskriften (FOR-2004-06-01-930) 'Forskrift om gjenvinning og behandling av avfall'

*N°3 Economic support to marketing of organic food*

Policy level.

National, local

Policy actor.

Ministry of Agriculture and Food,

Policy strategy.

Economic support

Policy measures.

The regulative framework for ecological production, distribution and labelling is part of the EEA-agreement. Alas, the requirements for ecological products are the same in Norway and the EU.

Contribute to market development and increased consumption of ecological products in both private and public sector; information campaigns, guidance etc.

Policy stage.

Implemented

Anticipated effect on household consumption.

Substitution

Actual effect on greenhouse gas emissions.

Mixed.

In X, Government set the goal to ensure that 10% of agricultural production was ecological by 2010. In the most recent policy paper on this (REF), they scaled up the goal; 15% of production and consumption to be ecological by 2020. Status in 2015 was that the total ecological agricultural production area in Norway was 4,5% (Debio, 2015). In 4 years the remaining +10% will need to materialise. However, the numbers show that while demand for ecological food products is increasing (Landbruksdirektoratet, 2015), the total ecological area is decreasing on a national basis (Debio, 2015). The total area in a 'quarantine' (conventional area transitioning to ecological area – quarantine duration = 2 years) is also decreasing on a national basis. In total, the ecological area and the area in quarantine was 4,9% of the total area in 2015. The number of ecological livestock has however increased somewhat (Landbruksdirektoratet, 2015). When zooming in at the regional level, Hordaland County, only 2,3% of total agricultural area is ecological, including the area currently in quarantine (Debio, 2015). Much work remains before achieving the goal of 15% production.

Documents

Debio (2015)– 'Økoareal I present av samlet jordbruksareal, 1999-2015'.  
(<http://www.debio.no/section.cfm?path=1,9>)

Landbruksdirektoratet rapport 2015 om produksjon og omsetning av økologiske landbruksvarer

Landbruks- og matdepartementet (2009) – Handlingsplan: Økonomisk, agronomisk – økologisk!

*N°4 Financial support for the establishment of "farmers market"*

Policy level.

National

Policy actor.

Ministry of Agriculture and Food

Policy strategy.

This is a policy document that indicates the course Government promotes to be taken by the agricultural sector. Content and measures mainly apply to the agricultural sector and the production-side – however a couple of measures listed directly address the consumption-side.

Policy measures.

Economic support to establish local varieties of « farmers market »

Policy stage.

Implemented

Anticipated effect on household consumption.

Substitution

Actual effect on greenhouse gas emissions.

Mixed

Documents

Meld.St, 39 (2008-2009): Climate Challenges - Agriculture part of the solution

*N°5 Info campaign on organic food*

Policy level.

Regional.

Policy actor.

County Governor of Hordaland and Oikos (Organic Norway)

Policy strategy.

Information

Policy measures.

Ecological strategy – measures related to information: stimulate marketing of ecological products + collaborate with market actors on getting info to consumers; ads, internet tools for finding eco products

Policy stage.

Implemented

Anticipated effect on household consumption.

Substitution

Actual effect on greenhouse gas emissions.

Indirect

Documents

N°10 Action plan for ecological agriculture in Hordaland and Sogn og Fjordane 2010-2013.

*N°6 Regional environmental programme for agriculture in Hordaland 2013-16*

Policy level.

Regional

Policy actor.

County Governor of Hordaland

Policy strategy.

15% of land-use areas and 15% of live stock related production shall be ecological by 2020 – focus areas of this programme:

- Hordaland County to be leader on ecological fruits and berries – Fylkesmannen i Hordaland FMHO & FMSF, HB, HBS, KOM by 2013
- Eco-‘pesticides’ – Norsk Landbruksrådgivning Hordaland (NLRH), Fylkesmannens landbruksavdeling (FMLA) by 2013
- Ecological strategy to be made by the end of 2016 by FMLA, HB, HBS, KOM

Policy measures.

Planning

Policy stage.

Implemented

Anticipated effect on household consumption.

Substitution

Actual effect on greenhouse gas emissions.

Indirect

Documents

Regional environmental program for agriculture in Hordaland 2013-16

*N°7 Promote sustainable diets through better dissemination of Information about the carbon footprints of different Foods*

Policy level.

National

Policy actor.

Ministry of Agriculture and Food

Policy strategy.

Information

This is a policy document that indicates the course Government promotes to be taken by the agricultural sector. Content and measures mainly apply to the agricultural sector and the production-side – however a couple of measures listed directly address the consumption-side.

Policy measures.

Promote sustainable diets through better dissemination of information about the carbon footprints of different foods (however none are outlined)

Policy stage.

Proposed

Anticipated effect on household consumption.

Substitution

Actual effect on greenhouse gas emissions.

Mixed

Documents

Meld.St, 39 (2008-2009): Climate Challenges - Agriculture part of the solution

*N°8 Sales law allowing for introducing tax on imported Food and on specific Foods (e.g. meat)*

Policy level.

National

Policy actor.

Ministry of Agriculture and Food

Policy strategy.

Rugulation

Provides the framework for taxation of agricultural produce.

Policy measures.

The 'Sales Law' (omsetningsloven) regulates 'access' to taxation of certain agricultural produce (meats from cattle, veal, sheep, reindeer, poultry and swine; grains and oilseeds; milk, butter, cheese, eggs; fur-bearing animals and reindeer skins; horticultural and nursery products).

Taxation levels are determined by the council appointed in the legislative text for each budget year.

Policy stage.

Implemented.

Anticipated effect on household consumption.

Substitutuin

The taxation level of different goods can regulate the market in terms of making certain goods more economically favourable than others.

Actual effect on greenhouse gas emissions.

Mixed

Documents

<https://lovdata.no/dokument/NL/lov/1936-07-10-6/§5>

*N°9 Voluntary labelling schemes of organic food ("Debio")*

Policy level.

National

Policy actor.

Stiftinga Miljømerking/ forbrukerrådet (est. by Barne- og likestillingsdepartementet) – now politically independent.

Policy strategy.

Information.

Policy measures.

Voluntary scheme for environmental labelling;

- Debio – label referring to the eco-body having approved this product as ecological produce

Policy stage.

Implemented

Anticipated effect on household consumption.

Substitution

Actual effect on greenhouse gas emissions.

Indirect

Documents

<https://debio.no/>

## Housing

N°1 Ban on the use of oil furnaces as main Source of heating for buildings by 2020Policy level.

National/local

Policy actor.

Ministry of Climate and Environment, Ministry of Local Government and Modernisation, Bergen Municipality, Enova.

Policy strategy.

Regulation

Policy measures.

The climate political settlement from 2012 notified that there will be a ban on using fossil fuels for heating from 2020, and TEK10 bans installation of oil burners and kerosene furnaces in new constructions. While the national legislative document banning fossil fuels for heating has not yet been released, some local governments have still gone ahead and put forward bans. Bergen Municipality has not put forward a ban, but they support the information campaign 'Oljefri.no', and they have given up to 15 000 NOK in 'wrecking deposit' for those getting rid of the burners to a number of households since 2011. In the municipality's 2015 'Green Strategy' the municipality announces that it welcomes the phasing out of fossil fuel use for heating by 2020, and will develop measures in 2016 that can contribute to this goal. The Municipality also calls for more measures and funding to be put in place to this end nationally.

Policy stage.

Ban not officially implemented nationally, but both national level and local level economic incentive mechanisms are already in place.

Anticipated effect on household consumption.

## Substitution

The Norwegian Environment Agency (NEA) refers to numbers from SSB showing that residential buildings consumed 1,1 TWh from fuel oil and kerosene in 2012. The MEA estimates that there are around 60-80 000 active oil burners and around 75 000 kerosene furnaces in residential buildings in Norway, and Bergen municipality estimates that there are about 10 000 active oil burners in Bergen. It is expected that the national ban will remove emissions related from these by 2020. Even just the announced ban might lead to some reduction in addition to economic incentives already in place.

Actual effect on greenhouse gas emissions.

## Direct

Documents:

Climate political settlement from 2012: <https://www.stortinget.no/no/Saker-og-publikasjoner/Publikasjoner/Innstillinger/Stortinget/2011-2012/inns-201112-390/?lvl=0>

Bergen Municipality Green Strategy:

[https://www.bergen.kommune.no/bk/multimedia/archive/00271/Rapport\\_Gr\\_nn\\_Strat\\_271539a.pdf](https://www.bergen.kommune.no/bk/multimedia/archive/00271/Rapport_Gr_nn_Strat_271539a.pdf)

Norwegian Environment Agency report on oil burners:

<http://www.miljodirektoratet.no/Documents/Nyhetsdokumenter/oljefyring-konsekvensutredning2015.pdf>

*N<sup>o</sup>2 CO<sub>2</sub>-tax on mineral oil fuel for burners and furnaces*

Policy level.

National

Policy actor.

Ministry of Finance

Policy strategy.

Tax

Policy measures.

CO<sub>2</sub>-tax on mineral oil (fuel for burners and furnaces are included in this 'general' tax rate). This affects the cost of the fuel that goes into fossil fuel burners for heating in some buildings. The tax rate is set in the national budget, and is set to 0,92 NOK for 2016.

Policy stage.

Implemented in 1991.

Anticipated effect on household consumption.

## Substitution

The Norwegian Environment Agency (NEA) refers to numbers from SSB showing that residential buildings consumed 1,1 TWh from fuel oil and kerosene in 2012. The MEA estimates that there are around 60-80 000 active oil burners and around 75 000 kerosene furnaces in residential buildings in Norway, and Bergen municipality estimates that there are about 10 000 active oil burners in Bergen. The CO<sub>2</sub> tax on mineral oil should therefore disincentivise this. The measure should be seen in context with the announced ban to come on the use of fossil fuels in oil burners for heating buildings from 2020 and the economic incentives provided through Enova for replacing oil burners with renewable energy sources.

Actual effect on greenhouse gas emissions.

Direct

Documents:

Approved national budget for 2016 'Blå bok':

<https://www.stortinget.no/globalassets/pdf/statsbudsjettet-2016/blabok2016.pdf>

Lov om særavgifter (særavgiftsloven): LOV-1933-05-19-11. Source:

<https://lovdata.no/dokument/NL/lov/1933-05-19-11>

*N°3 Energy labelling of buildings*

Policy level.

National

Policy actor.

Ministry of Petroleum and Energy, NVE, now Enova

Policy strategy.

Information

The energy labelling scheme is a result of the directive on the energy performance of buildings (directive 2002/91/EC).

Policy measures.

Energy labeling ranging buildings on a colour coded scale from A – green (energy efficient) to G – red (little energy efficient). All buildings for rent or sale has to be energy labeled.

Policy stage.

Implemented.

Anticipated effect on household consumption.

Reduction

Actual effect on greenhouse gas emissions.

Mixed

Documents:

The directive on the energy performance of buildings (directive 2002/91/EC).

*N°4 Enova – educational program for children*

Policy level.

National

Policy actor.

Enova, primary schools

Policy strategy.

Information

Policy measures.

Enova's educational program targeting children aged 9-12 years called 'Energiutfordringen', or 'the energy challenge'. The program mainly targets pupils in year 7 in primary school, and is built around their teaching program. Enova has set up a website with course design and

learning materials (4x90 minutes of teaching, in addition to tasks and tests), so everything is easily accessible to teachers.

Policy stage.

Implemented in 2003 (Regnmakerene), updated in 2014 (Energiutfordringen).

Anticipated effect on household consumption.

Mixed

Educational awareness program for children about energy use and environmental impacts. The idea is to lay a knowledge foundation for the next generation to take good decisions on energy and climate issues.

Actual effect on greenhouse gas emissions.

Indirect

Documents:

<http://enovasenergiutfordring.no>

*N°5 Enova – Information campaigns (diverse activities)*

Policy level.

National

Policy actor.

Enova

Policy strategy.

Information.

Policy measures.

Information support for identifying available options for investments in energy measures in existing buildings. The result from the option identification can be used when applying for investment support.

Information help line called 'Enova Svarer'. Provides information and advice on energy and Enova's programs. The help line is accessible freely on phone, email, internet chat on Enova's website, Google+, Facebook and Twitter. The opening hours are 08.00-16.00 all weekdays, and has a response guarantee within 24 hours.

Policy stage.

Implemented.

Anticipated effect on household consumption.

Mixed

Provide guidance for households on which solutions might be good for them specifically.

Actual effect on greenhouse gas emissions.

Mixed

Documents:

<https://www.enova.no/radgivning/privat/28/0/>

*N°6 Enova - Public support for energy efficiency solutions*Policy level.

National

Policy actor.

Ministry of Finance, Enova

Policy strategy.

Economic support

Policy measures.

A 'right' to economic support for the measures listed below is available from 'Enova tilskuddet'. These are particularly aimed at private households. For all the measures, apart from the last one, you do not have to apply before going through with the listed measures, but you have a right to get refunded for the investments you have made as long certain conditions are met. For the last measure listed, you have to apply in advance.

- Hiring an **energy councillor**: you can reclaim 50% of total cost, or maximum between 5 000 and 7 500 NOK after completing energy counselling depending on whether or not you include thermography.
- **Air to water heat pump** (in combination with central heating system): you can reclaim 25% of total cost, or maximum between 10 000 and 20 000 NOK by supplying sufficient documentation depending on whether or not you also install an energy meter for electricity and heating.
- **Water to water heat pump** (in combination with central heating system): you can reclaim 25% of total cost, or maximum between 10 000 and 30 000 NOK by supplying sufficient documentation depending on whether or not you also install an energy meter for electricity and heating.
- **Exhaust heat pump** (in combination with central heating system): you can reclaim 25% of total cost, or maximum between 10 000 and 20 000 NOK by supplying sufficient documentation depending on whether or not you also install an energy meter for electricity and heating.
- **Removal of oil boiler and tank** in combination with substituting this with renewable heating source such as heat pump or bioheating, you can reclaim 25% of total cost, or maximum 10 000 NOK in addition to the sum you get for investing in the renewable heating source.
- **Removal of oil stove and tank** in combination with substituting this with renewable heating source such as heat pump or bioheating, you can reclaim 25% of total cost, or maximum 10 000 NOK upon documenting purchase of renewable source of heating.
- **Biomass boiler** (in combination with central heating system): you can reclaim 25% of total cost, or maximum 25 000 NOK
- **Biomass oven** with water warming attachment (in combination with central heating system): you can reclaim 25% of total cost, or maximum 10 000 NOK.
- **Smart heating systems and thermostats**; as long as the system can control 3 zones in the living area, you can reclaim 20% of total costs, or maximum 4 000 NOK.
- **Waste water heat recovery system**: you can reclaim 25% of total cost, or maximum 2 500 NOK.
- **Balanced ventilation system** where the heat from used air is transferred to fresh air in a heat recovery system: you can reclaim 25% of total cost, or maximum 20 000 NOK.
- **Central heating system** either in floors or radiators (rebuilding this into existing house so as to improving energy efficiency of an existing building): you can reclaim 25% of total cost, or maximum 10 000 NOK conditional on combining this with a renewable energy source.
- **Upgrading the building body** (includes improvement of the thermal insulation of the dwelling's exterior walls, roofs, windows, exterior doors and foundations) to:
  - o Energy level 1 (Passive house): you can reclaim 25% of total cost, or maximum 150 000 NOK.

- Energy level 2 (Low-energy house): you can reclaim 25% of total cost, or maximum 125 000 NOK.
- Energy level 1 (TEK 10): you can reclaim 25% of total cost, or maximum 100 000 NOK.
- **Energy efficient new constructions:** you can apply for support for energy efficient new constructions if the construction has high ambitions in terms of energy, that go further than regulative requirements and that have a potential for dissemination in the market. Note: must apply before the construction starts.

Enova also has support programmes for multiple unit dwellings like housing cooperatives and condominiums:

- **Investment support for measures in existing buildings** that reduces energy consumption and adopts renewable energy sources. The level of support can be calculated in an online calculator on Enova's home page. The level of support depend on the number of measures and the type of measures.
- **Investment support for energy efficient new constructions** (does not directly target households, but supports development of necessary infrastructure – in this case climate friendly buildings for apartments, offices etc.
- **Energy efficient new constructions:** you can apply for support for energy efficient new constructions if the construction has high ambitions in terms of energy, that go further than regulative requirements and that have a potential for dissemination in the market

#### Policy stage.

Implemented (2002, strengthened 2012)

#### Anticipated effect on household consumption.

Efficiency

#### Actual effect on greenhouse gas emissions.

Mixed

The most recent performance report from Enova (2015) shows that from 2012 to 2015 the fund has contributed to a reduction of 8 k tonnes CO<sub>2</sub>e from housing, and that they handed out 446 million NOK for energy efficiency measures in the housing sector. According to the SSB, GHG emissions from heating of 'housing and other industries' were 1,3 million tonnes CO<sub>2</sub>e in 2015 (SSB, 2015). In 2007 approximately 33% of emissions from 'housing and other industries' could be assigned to housing (Government of Norway, 2007). If this share still holds true, it means that GHG emissions from heating of housing in 2015 would have been around 420 k CO<sub>2</sub>e. If the calculations are correct, the Enova fund has reduced GHG emissions from housing by 2% between 2012 and 2015, compared to a counter-factual scenario where this funding didn't exist, and where households as a result of no available funding didn't go through with the measures included in Enova's estimates.

#### Documents:

List of measures available: <https://www.enova.no/finansiering/privat/898/0/>

Founding document for Enova: Innst. S. nr. 325 (2000-2001): Innstilling fra finanskomiteen om tilleggsbevilgninger og omprioriteringer i statsbudsjettet medregnet folketrygden 2001.

Source: [https://www.stortinget.no/no/Saker-og-](https://www.stortinget.no/no/Saker-og-publikasjoner/Publikasjoner/Innstillinger/Stortinget/2000-2001/inns-200001-325/?l=0)

[publikasjoner/Publikasjoner/Innstillinger/Stortinget/2000-2001/inns-200001-325/?l=0](https://www.stortinget.no/no/Saker-og-publikasjoner/Publikasjoner/Innstillinger/Stortinget/2000-2001/inns-200001-325/?l=0).

Enova (2015). Resultat- og aktivitetsrapport 2015.

<https://www.regjeringen.no/contentassets/d5d507856c72418e9f3aefc64544dcd3/enova-resultatrapport-2015.pdf>

Government of Norway (2007).

[https://www.regjeringen.no/globalassets/upload/KRD/Vedlegg/BOBY/handlingsplaner/H-2237\\_web.pdf](https://www.regjeringen.no/globalassets/upload/KRD/Vedlegg/BOBY/handlingsplaner/H-2237_web.pdf).

*N°7 Enova - Public support for solar energy in residential homes*Policy level.

National

Policy actor.

Ministry of Finance, Enova

Policy strategy.

Economic support

Policy measures.

- **Solar thermal power** for heating up water (can be combined with central heating system): you can reclaim 25% of total cost, or maximum 15 000 NOK depending on the area available.
- **Electricity production** from renewable sources such as wind or photovoltaic solar technology: you can reclaim 35% of total cost, or maximum 28 750 NOK conditional on setting up a so called 'plus-costumer' agreement where any electricity surplus is fed back into the grid (requires that the production system is connected to the electricity grid).

Policy stage.

Implemented (2002, strengthened 2012)

Anticipated effect on household consumption.

Substitution

Supports investment in renewable energy technologies, improvements made in energy efficiency of buildings. Economic support is available to private households directly, as well as unit dwellings.

Actual effect on greenhouse gas emissions.

Indirect

Documents:

List of measures available: <https://www.enova.no/finansiering/privat/898/0/>

Founding document for Enova: Innst. S. nr. 325 (2000-2001): Innstilling fra finanskomiteen om tilleggsbevilgninger og omprioriteringer i statsbudsjettet medregnet folketrygden 2001.

Source: <https://www.stortinget.no/no/Saker-og-publikasjoner/Publikasjoner/Innstillinger/Stortinget/2000-2001/inns-200001-325/?l=0>.

Enova (2015). Resultat- og aktivitetsrapport 2015.

<https://www.regjeringen.no/contentassets/d5d507856c72418e9f3aecf64544dcd3/enova-resultatrapport-2015.pdf>

Government of Norway (2007).

[https://www.regjeringen.no/globalassets/upload/KRD/Vedlegg/BOBY/handlingsplaner/H-2237\\_web.pdf](https://www.regjeringen.no/globalassets/upload/KRD/Vedlegg/BOBY/handlingsplaner/H-2237_web.pdf).

*N°8 State Housing Bank loans for building new residences with more stringent energy Enova*Policy level.

National

Policy actor.

Ministry of Local Government and Modernisation, The Norwegian State Housing Bank. This is the key agency for implementing Government's housing policy

Policy strategy.

Economic support

The bank was established to help rebuild the country after WW2, and started out as a bank for housing supply. Today the bank functions as a welfare agency with the objective to assist the **disadvantaged** in the housing market whilst also securing good housing quality.

Policy measures.

Grants basic loans for building new residences with more stringent energy requirements than current building regulations and provides grants for increasing competence & dissemination of knowledge on sustainable buildings. Available financial instruments are

- Housing allowance supporting those with low income and high living expenses.
- Start-up loan from the municipalities for obtaining or retaining a home.
- Basic loan from the Housing Bank for construction and renewal of homes
- Housing grant from the municipality to help buy a home, build a home or improve ones current home

Policy stage.

Implemented.

Anticipated effect on household consumption.

Reduction

Actual effect on greenhouse gas emissions.

Direct

Documents:

Lov om Husbanken (Husbankloven) - LOV-2009-05-29-30. Source:

<https://lovdata.no/dokument/NL/lov/2009-05-29-30>

<http://www.husbanken.no/english/housing-grant/>

*N°9 Tax on electricity consumption*

Policy level.

National

Policy actor.

Ministry of Finance

Policy strategy.

Tax.

Policy measures.

Tax on electricity consumption per kWh consumed. The tax rate is each year and announced in the national budget. The rate for 2016 is at 0,16 NOK per kWh.

Policy stage.

Implemented.

Anticipated effect on household consumption.

Reduction

Actual effect on greenhouse gas emissions.

Indirect

Difficult to estimate, but numbers from SSB indicate that household electricity consumption in Norway has decreased some what between 1993 and 2012 (which is the most recent year available). In 1993 each households consumed 18 064 kWh on average, whereas the number was 16 044 kWh in 2012. However, between 2009 and 2012 electricity consumption increased somewhat, in spite of the electricity consumption tax rate increasing in the same period from 0,108 to 0,113 NOK per kWh (Energi Norge, 2016).

#### Documents:

Approved national budget for 2016 'Blå bok':

<https://www.stortinget.no/globalassets/pdf/statsbudsjettet-2016/blabok2016.pdf>

Energi Norge (2016). 'Skattelegging av klimavennlig energibruk'. Source:

<https://www.energinorge.no/energi-norge-mener/skattelegging-av-klimavennlig-energibruk/>

Lov om særavgifter (særavgiftsloven): LOV-1933-05-19-11. Source:

<https://lovdata.no/dokument/NL/lov/1933-05-19-11>

SSB (2016). Tabell: 10572: Gjennomsnittlig energiforbruk per husholdning, etter energibærere. Source: <https://www.ssb.no/statistikkbanken/selectvarval/saveselections.asp>

*N°10 TEK10: New requirements on passive house standards by 2015 and further strengthened to almost zero-energy level by 2020*

#### Policy level.

National

#### Policy actor.

Ministry of Local Government and Modernisation

#### Policy strategy.

Regulation

#### Policy measures.

The energy requirements in TEK10 (regulations on technical requirements for buildings) to be up to passive house standards by 2015 and further strengthened to almost zero-energy level by 2020.

#### Policy stage.

Implemented.

#### Anticipated effect on household consumption.

Reduction

#### Actual effect on greenhouse gas emissions.

Indirect

#### Documents

Forskrift om tekniske krav til byggverk (Byggteknisk forskrift) - FOR-2010-03-26-489. Source: <https://lovdata.no/dokument/SF/forskrift/2010-03-26-489> (TEK10)

*N°11 TEK10: Regulations on technical requirements for residential homes: compulsory connection to district heating*

#### Policy level.

National

Policy actor.

Ministry of Local Government and Modernisation

Policy strategy.

Regulation

Policy measures.

TEK10 requires that if district heating is available near the building, the building has to be built in a way as to allow connection to the district heating infrastructure.

Policy stage.

Implemented.

Anticipated effect on household consumption.

Substitution

Actual effect on greenhouse gas emissions.

Indirect

Documents

Forskrift om tekniske krav til byggverk (Byggteknisk forskrift) - FOR-2010-03-26-489. Source: <https://lovdata.no/dokument/SF/forskrift/2010-03-26-489> (TEK10)

*N°12 TEK10: Regulations on technical requirements for residential homes: energy efficiency*

Policy level.

National

Policy actor.

Ministry of Local Government and Modernisation

Policy strategy.

Regulation

Policy measures.

TEK10 requires that all new buildings are built in an energy efficient fashion.

Policy stage.

Implemented.

Anticipated effect on household consumption.

Efficiency.

Actual effect on greenhouse gas emissions.

Indirect

Documents

Forskrift om tekniske krav til byggverk (Byggteknisk forskrift) - FOR-2010-03-26-489. Source: <https://lovdata.no/dokument/SF/forskrift/2010-03-26-489> (TEK10)

*N°13 The energy act on information billing*Policy level.

National

Policy actor.

Ministry of Petroleum and Energy

Policy strategy.

Regulation

Policy measures.

- Regulation for invoicing of grid services aimed to make the household aware of its electricity consumption
- Requires that the bill has to be easy to understand
- Every bill must contain a graphical comparison of the consumption in the settling period of this year compared to the corresponding period last year.
- Bills must be based on actual consumption instead of an estimated consumption
- The invoice must contain information about where to get advice concerning energy efficiency and the telephone number to a free of charge 'energy efficiency' telephone service

Policy stage.

Implemented in 1990.

Anticipated effect on household consumption.

Mixed

Actual effect on greenhouse gas emissions.

Indirect

Documents:

Lov om produksjon, omforming, overføring, omsetning, fordeling og bruk av energi m.m. (Energiloven) - LOV-1990-06-29-50. Source: <https://lovdata.no/dokument/NL/lov/1990-06-29-50>.

*N°14 Local economic support to get rid of fossil fuels for heating*Policy level.

Local

Policy actor.

Municipality of Bergen

Policy strategy.

Economic support

Policy measures.

Bergen Municipality has have given up to 15 000 NOK in 'wrecking deposit' for those getting rid of the burners to a number of households since 2011. In the municipality's 2015 'Green Strategy' the municipality announces that it welcomes the phasing out of fossil fuel use for heating by 2020, and will develop measures in 2016 that can contribute to this goal. The Municipality also calls for more measures and funding to be put in place to this end nationally.

Policy stage.

Implemented in 1990.

Anticipated effect on household consumption.

Direc

Actual effect on greenhouse gas emissions.

Indirect

Documents:

Lov om produksjon, omforming, overføring, omsetning, fordeling og bruk av energi m.m. (Energiloven) - LOV-1990-06-29-50. Source: <https://lovdata.no/dokument/NL/lov/1990-06-29-50>.

## Transportation

*N°1 Apps and other information systems that simplify the use of different means of Transportation*

Policy level.

Local

Policy actor.

Local authority

Policy strategy.

Information

Policy measures.

continued support for Apps and other information systems that simplify the use of different means of transportation in a good mix

Policy stage.

Implemented

Anticipated effect on household consumption.

Substitution

Actual effect on greenhouse gas emissions.

Direct

Documents

Klimaplan for Hordalan 2014-2030

Kommuneplanens Arealdel (2010 -> 2013)

Grønn strategi – Klima- og energihandlingsplan for Bergben 2015

*N°2 CO2 tax on fossiil fuel (exemption for international aviation and passenger boating)*

Policy level.

National

Policy actor.

Ministry of Climate and Environment; Ministry of Finance

Policy strategy.

Tax

Policy measures.

Implemented:

- CO2 tax on mineral oil and gasoline (1991?).

Goals:

- In the most recent climate political settlement from 2012, Government set a goal to contribute to the development of 2<sup>nd</sup> generation biofuels (Klimaforliket)

Policy stage.

Implemented

Anticipated effect on household consumption.

Efficiency

Actual effect on greenhouse gas emissions.

Direct

Some issues with biofuels; sustainability criteria not strong enough? Point to recent 'scandal' related to "sustainable" palm oil use and rainforest issues. Also food/fuel conflict with regard to 1st generation of biofuels.

Documents:

'Forskrift om begrensning i bruk av helse- og miljøfarlige kjemikalier og andre produkter (produktforskriften)'. FOR-2004-06-01-922. <https://lovdata.no/dokument/SF/forskrift/2004-06-01-922?q=klimate+miljoe+forbruk>. Has roots in EU Directive 2003/30/EC.

Klimaforliket – Innst. 390 S (2011-2012) 'Innstilling fra energy- og miljøkomiteen om norsk klimapolitikk' (Climate political settlement, 2012).

*N°3 CO2-dependent registration tax for new passenger cars*

Policy level.

National

Policy actor.

Ministry of Finance

Policy strategy.

Tax

Policy measures.

CO2-dependent registration tax for new passenger cars

Policy stage.

Implemented

Anticipated effect on household consumption.

Efficiency

Actual effect on greenhouse gas emissions.

Direct

Documents

Meld. St. 21 (11-12), Innst. 390 S (11-12) (klimameld + klimaforlik)  
National Transportation Plan (2014-2023)

*N°4 Differentiated toll rings according to rush hour, number of passengers, emissions*

Policy level.

Local

Policy actor.

Local authority

Policy strategy.

Tax

Policy measures.

Differentiated toll rings according to rush hour, number of passengers, emissions

Policy stage.

Implemented

Anticipated effect on household consumption.

Efficiency

Actual effect on greenhouse gas emissions.

Direct

Documents

Klimaplan for Hordalan 2014-2030  
Kommuneplanens Arealdel (2010 -> 2013)  
Grønn strategi – Klima- og energihandlingsplan for Bergben 2015

*N°5 Electric cars/zero-emission cars have access to bus lanes, free toll passage & free access to public parking and charging points*

Policy level.

National

Policy actor.

Ministry of Transportation

Policy strategy.

Regulation

Policy measures.

Electric cars/zero-emission cars have access to bus lanes, free toll passage & free access to public parking and charging points

Policy stage.

Implemented

Anticipated effect on household consumption.

Efficiency

Actual effect on greenhouse gas emissions.

Indirect

Documents

Meld. St. 21 (11-12), Innst. 390 S (11-12) (klimatemeld + klimaforlik)

National Transportation Plan (2014-2023)

*N°6 Establish a new light-rail system*

Policy level.

Local

Policy actor.

Local authority

Policy strategy.

Physical

Policy measures.

Implement environmental zones/low-emission zones (road sign authority)

Policy stage.

Implemented

Anticipated effect on household consumption.

Substitution

Actual effect on greenhouse gas emissions.

Mixed

Documents

Klimaplan for Hordalan 2014-2030

Kommuneplanens Arealdel (2010 -> 2013)

Grønn strategi – Klima- og energihandlingsplan for Bergben 2015

*N°7 Establish new infrastructure for cycling and walking*

Policy level.

Local

Policy actor.

Local authority

Policy strategy.

Physical

Policy measures.

Public transportation, cycling and walking to absorb growth in passenger transport in large urban areas by a modal shift from private cars to environmentally friendly means of transportation by facilitating pedestrians and cyclists (establishing new walking/biking roads)

Policy stage.

Implemented

Anticipated effect on household consumption.

Substitution

Actual effect on greenhouse gas emissions.

Direct

Documents

Klimaplan for Hordalan 2014-2030

Kommuneplanens Arealdel (2010 -> 2013)

Grønn strategi – Klima- og energihandlingsplan for Bergben 2015

*N°8 Establish new separate bus-lanes in existing roads*

Policy level.

Local

Policy actor.

Local authority

Policy strategy.

Physical

Policy measures.

Increase investments in establishing new separate bus-lanes in existing roads

Policy stage.

Implemented

Anticipated effect on household consumption.

Substitution

Actual effect on greenhouse gas emissions.

Direct

Documents

Klimaplan for Hordalan 2014-2030

Kommuneplanens Arealdel (2010 -> 2013)

Grønn strategi – Klima- og energihandlingsplan for Bergben 2015

*N°9 Establish low-emission zones*

Policy level.

Local

Policy actor.

Local authority

Policy strategy.

Regulation

Policy measures.

Implement environmental zones/low-emission zones (road sign authority)

Policy stage.

Implemented

Anticipated effect on household consumption.

Reduction

Actual effect on greenhouse gas emissions.

Direct

Documents

Klimaplan for Hordalan 2014-2030

Kommuneplanens Arealdel (2010 -> 2013)

Grønn strategi – Klima- og energihandlingsplan for Bergben 2015

*N°10 Exemption of CO2 tax on fuel for domestic aviation if re-fuelling with biofuel Mixed in Norway*

Policy level.

National

Policy actor.

Ministry of Finance, Avinor (Agency that is responsible for managing air travel)

Policy strategy.

Economic support

Policy measures.

Avinor has mixed a compulsory amount of biofuels into the aviation fuel mix that is provided at Gardermoen airport (OSL). All flights that are re-fueled at this airport will receive a bio-fuel mix. Currently SAS, Lufthansa and KLM has agreed to pay the increased cost of this fuel mix. In return, they are exempt from paying for emission quotas and CO2 taxes on domestic flights. The idea is to eventually expand this to other airports in Norway.

Policy stage.

Implemented.

Anticipated effect on household consumption.

Efficiency

Actual effect on greenhouse gas emissions.

Direct

Some issues with biofuels; Avinor has struggled to get a hold of large enough amounts of biofuels for mixing into the fuel mix. The mix is thus currently less than 1%. Besides, there are controversies around the production of biofuels and the actual GHG emission benefit of such schemes – i.e. food/fuel conflict with regard to 1st generation of biofuels. Currently there is not enough 'waste' cooking oil and crop/food waste to meet the increasing demand for biofuel input () and there are controversies as to the sustainability of meeting the increased demand with forestry.

Documents

Blå Bok: Statsbudsjettet for 2016 (National Budget 2016)

<http://www.skatteetaten.no/no/Radgiver/Rettskilder/rundskriv-retningslinjer-og-andre-rettskilder/rundskriv/rundskriv-om-innforing-av-flypassasjeravgift/>  
Vedtak om særavgifter, 2016 (FOR-2015-12-14-1570)  
<https://lovdata.no/dokument/STV/forskrift/2015-12-14-1570>  
<https://www.regjeringen.no/no/tema/transport-og-kommunikasjon/luftfart/tiltak-for-a-redusere-klimagassutslipp/id2076453/>  
<http://www.aftenposten.no/okonomi/lkke-en-drape-miljoennlig-drivstoff-i-flytankene-19616b.html>  
<https://avinor.no/konsern/miljo-og-samfunn/biodrivstoff/>  
<http://www.tu.no/artikler/na-far-alle-fly-som-tanker-pa-gardermoen-frityrolje-pa-tanken/276399>

*N°11 Increase capacity of train transportation (e.g. double lanes etc)*

Policy level.

National

Policy actor.

Ministry of transportation

Policy strategy.

Physical

Policy measures.

High priority to developing a competitive railway transport system for passengers & freight – esp. improving the passenger rail network around the big cities. Increased funding will be available for this in the annual national budgets, according to the Government White Paper on climate policy.

Policy stage.

Implemented

Anticipated effect on household consumption.

Substitution

Actual effect on greenhouse gas emissions.

Direct

Documents

National Transportation Plan (2014-2023)

St.meld.nr. 26 (2001-2002) Bedre kollektivtransport og St.prp.nr.1 (2002-2003)

*N°12 Increase investments in bicycle lanes*

Policy level.

National

Policy actor.

Local authority

Policy strategy.

Economic support

Policy measures.

A substantial increase in investment funds for local authorities to build new walking and biking lanes

Policy stage.

Implemented

Anticipated effect on household consumption.

Substitution

Actual effect on greenhouse gas emissions.

Direct

Documents

National Transportation Plan (2014-2023)

St.meld.nr. 26 (2001-2002) Bedre kollektivtransport og St.prp.nr.1 (2002-2003)

*N°13 National grants for municipalities supporting an increased share of public transport & reduction in private car use*

Policy level.

National

Policy actor.

Ministry of transportation

Policy strategy.

Economic support

Policy measures.

Decided in the political settlement on climate in 2008 to increase funds for the reward scheme for measures that improve the use of public transportation. The aim is to encourage & stimulate improved traction, environment & health by reducing growth in motorized transportation and substitute private car journeys with public transportation → grants for municipalities that manage to increase shares of public transport & manage traffic by private cars by introducing goal of zero growth during the period. The grant is to be spent on increased level of service for public transport & municipalities are encouraged to restrict automobile use via congestion charges, local fuel taxes, reduced parking availability and building regulations etc. In 2012, 411 million NOK were earmarked this reward scheme.

Policy stage.

Implemented

Anticipated effect on household consumption.

Substitution

Actual effect on greenhouse gas emissions.

Direct

Documents

National Transportation Plan (2014-2023)

St.meld.nr. 26 (2001-2002) Bedre kollektivtransport og St.prp.nr.1 (2002-2003)

*N°14 Passenger tax on aviation*Policy level.

National

Policy actor.

Ministry of Finance, Ministry of Transport and Communications

Policy strategy.

Economic

Policy measures.

All departures from Norwegian airports are taxed 80 NOK per passenger. However does not apply to transit or transfer passengers – but in these cases the tax is paid on the first departure if one of the departure-airport is Norwegian (Domestic and International) (Implemented – see National Budget 2016).

Has been included in the EU ETS (Implemented) - however: flights to and from Europe are not covered by the ETS – they were intended to be included, but the EU decided in 2012 that these will be exempted until the ICAO agrees on an international/global scheme due to the logic 'global problem, global solutions'.

Policy stage.

Unequally applied. See status in brackets behind the measures listed above.

Anticipated effect on household consumption.

Reduction

Actual effect on greenhouse gas emissions.

Mixed (if reduction in aviation abroad, that is indirect reduction)

« At the end of 2014, 30 of the 64 European ACCs had implemented various steps of Free Route Operations. They represent more than 25% of the NM area. Savings from these projects amount to approximately 2,5000 NMs per day. Flying distances are reduced by approximately 7.5 million NMs, representing the equivalent of 45,000 tons of fuel saved, or reduced emissions of 150,000 tons, or €37 million. ». Source: Eurocontrol: <http://www.eurocontrol.int/articles/free-route-airspace>.

Theoretical estimates show that the introduction of FRA could lead to annual savings of around 10 000 tonnes fuels. This is equivalent to a cost reduction of around 7 millioner euro. Source: Government: <https://www.regjeringen.no/no/aktuelt/ny-lufttrossorganisering-apner-opp-for-reduserte-kostnader-og-mindre-klimagassutslipp-i-luftfarten/id2461468/>.

Documents

Direktiv 2008/101/EC – EU ETS, kvoteplikt for lufthavner

Vedtak om særavgifter, 2016 (FOR-2015-12-14-1570)

<https://lovdata.no/dokument/STV/forskrift/2015-12-14-1570>

<https://www.regjeringen.no/no/aktuelt/ny-lufttrossorganisering-apner-opp-for-reduserte-kostnader-og-mindre-klimagassutslipp-i-luftfarten/id2461468/>

<http://www.eurocontrol.int/articles/free-route-airspace>

<https://www.regjeringen.no/no/tema/transport-og-kommunikasjon/luftfart/tiltak-for-a-redusere-klimagassutslipp/id2076453/>

*N°15 Providing charging points and parking for EVs*Policy level.

Local

Policy actor.

Local authority

Policy strategy.

Physical

Policy measures.

Increase share of low- or zero emission transportation means by providing charging points and parking for EVs

Policy stage.

Implemented

Anticipated effect on household consumption.

Efficiency

Actual effect on greenhouse gas emissions.

Indirect

Documents

Klimaplan for Hordalan 2014-2030

Kommuneplanens Arealdel (2010 -> 2013)

Grønn strategi – Klima- og energihandlingsplan for Bergben 2015

*N°16 Reduce availability of parking*Policy level.

Local

Policy actor.

Local authority

Policy strategy.

Regulation

Policy measures.

Reduce availability of parking by means of detailed land-use planning

Policy stage.

Implemented

Anticipated effect on household consumption.

Substitution

Actual effect on greenhouse gas emissions.

Direct

Documents

Klimaplan for Hordalan 2014-2030

Kommuneplanens Arealdel (2010 -> 2013)

Grønn strategi – Klima- og energihandlingsplan for Bergben 2015

*N°17 Reduce speed-limit in situations of high emissions*

Policy level.

Local

Policy actor.

Ministry of Transportation

Policy strategy.

Regulation

Policy measures.

Environmental speed limits; make environmental concerns a point to be universally considered in the law + facilitate mandate to introduce when necessary environmental speed limits. Test project implemented in Oslo area 2004 – which lead to a legislation change in 2013 that mandates local government to introduce environmental speed limits when they deem it necessary.

Policy stage.

Implemented

Anticipated effect on household consumption.

Efficiency

Actual effect on greenhouse gas emissions.

Direct

Documents

Meld. St. 21 (11-12), Innst. 390 S (11-12) (klimatemeld + klimaforlik)

National Transportation Plan (2014-2023)

*N°18 Regulations obliging co-ordination of local land-use and transport planning*

Policy level.

National

Policy actor.

Ministry of environment

Policy strategy.

Regulation

Policy measures.

Regulations obliging co-ordination of local land-use and transport planning, in which national authorities (the Ministry of Environment) can refuse to approve local land-use plans if such considerations are not taken.

Policy stage.

Implemented

Anticipated effect on household consumption.

Reduction

Actual effect on greenhouse gas emissions.

Direct

Documents

Planning and building act.

*N°19 Requirement of 3,5 % biofuels of fuel consumption in road-transport .*

Policy level.

National

Policy actor.

Ministry of Climate and Environment; Ministry of Finance

Policy strategy.

Regulation

Policy measures.

'Sales orders' on biofuels; Requirement of 3,5 % biofuels of fuel consumption in road transport. Sustainability criteria must be met by all biofuels and bioliquids included in the renewable energy targets of gov't support schemes (EU criteria impl. In the Fuel Quality Directive & the Renewable Energy Directive). (Produktforskriften).

Policy stage

Implemented.

Anticipated effect on household consumption.

Efficiency

Actual effect on greenhouse gas emissions.

Direct

Some issues with biofuels; sustainability criteria not strong enough? Point to recent 'scandal' related to "sustainable" palm oil use and rainforest issues. Also food/fuel conflict with regard to 1st generation of biofuels.

Documents:

'Forskrift om begrensning i bruk av helse- og miljøfarlige kjemikalier og andre produkter (produktforskriften)'. FOR-2004-06-01-922. <https://lovdata.no/dokument/SF/forskrift/2004-06-01-922?q=klima+miljøl+forbruk>. Has roots in EU Directive 2003/30/EC.

Klimaforliket – Innst. 390 S (2011-2012) 'Innstilling fra energy- og miljøkomiteen om norsk klimapolitikk' (Climate political settlement, 2012).

*N°20 Road-tax exemption on biodiesel (-50% for biodiesel meeting the sustainability criteria) and bioethanol (-100% for blends containing <50% bioethanol)*

Policy level.

National

Policy actor.

Ministry of Climate and Environment; Ministry of Finance

Policy strategy.

Economic support

Policy measures.

- Biodiesel meeting the sustainability criteria get a 50% reduction in road usage tax compared to auto diesel vehicles. Bioethanol blends containing <50% bioethanol are completely exempt from road usage tax. Both tax exemptions are maintained until 2020
- Road-tax exemption on biofuels and other alternative fuels until 2020 (Government's political platform agreement, 201x).

Policy stage

Implemented.

Anticipated effect on household consumption.

Efficiency

Actual effect on greenhouse gas emissions.

Direct

Some issues with biofuels; sustainability criteria not strong enough? Point to recent 'scandal' related to 'sustainable' palm oil use and rainforest issues. Also food/fuel conflict with regard to 1st generation of biofuels.

Documents:

'Forskrift om begrensning i bruk av helse- og miljøfarlige kjemikalier og andre produkter (produktforskriften)'. FOR-2004-06-01-922. <https://lovdata.no/dokument/SF/forskrift/2004-06-01-922?q=klima+milj%C3%B8+forbruk>. Has roots in EU Directive 2003/30/EC.

Klimaforliket – Innst. 390 S (2011-2012) 'Innstilling fra energy- og miljøkomiteen om norsk klimapolitikk' (Climate political settlement, 2012).

*N°21 Stimulate to carpooling*

Policy level.

Regional

Policy actor.

Hordaland county

Policy strategy.

Economic support

Policy measures.

Stimulate to carpooling in the whole county (initial project: 'spontaneous carpooling' with some companies in Bergen)

Policy stage.

Implemented

Anticipated effect on household consumption.

Efficiency

Actual effect on greenhouse gas emissions.

Direct

Documents

Meld. St. 21 (11-12), Innst. 390 S (11-12) (klimameld + klimaforlik)  
National Transportation Plan (2014-2023)

*3.22 Support for zero/low-emission infrastructure development*Policy level.

National

Policy actor.

Ministry of Transportation

Policy strategy.

Economic support

Policy measures.

Support for infrastructure development – e.g. establishment of charging points for electrical vehicles

Policy stage.

Implemented

Anticipated effect on household consumption.

Efficiency

Actual effect on greenhouse gas emissions.

Mixed

Documents

Meld. St. 21 (11-12), Innst. 390 S (11-12) (klimameld + klimaforlik)  
National Transportation Plan (2014-2023)

*N°23 Tax-exemptions for small, zero- and low-emission cars*Policy level.

National

Policy actor.

Ministry of Finance

Policy strategy.

Economic support

Policy measures.

Tax-exemptions (from road usage tax & motor registration tax) for electric (also reduced rate in annual tax on motor vehicles) and hybrid cars (partly exempt from motor vehicle reg tax (weight of electric engine + battery + power of electric motor = deducted from calculation basis – approx. 10% for hybrids, 20% for plug-in hybrids)& partly exempt from the road usage tax since electricity is exempt from this tax), exempt from MOMS, low årsavgift & EU emission standards for passenger cars

Policy stage.

Implemented

Anticipated effect on household consumption.

Efficiency

Actual effect on greenhouse gas emissions.

Mixed

Documents

Meld. St. 21 (11-12), Innst. 390 S (11-12) (klimatemeld + klimaforlik)  
National Transportation Plan (2014-2023)

*N°24 Economic incentive for scrapping cars*

Policy level.

National

Policy actor.

Ministry of Finance

Policy strategy.

Economic support

Policy measures.

Economic incentive for scrapping cars.

Policy stage.

Implemented.

Anticipated effect on household consumption.

Efficiency

Facilitate more material recycling and provide information for supporting environmentally responsible waste management.

Actual effect on greenhouse gas emissions.

Mixed

Documents:

Avfallsforskriften (FOR-2004-06-01-930) 'Forskrift om gjenvinning og behandling av avfall'  
Produktforskriften (FOR-2004-06-01-922) 'Forskrift om begrensning i bruk av helse- og miljøfarlige kjemikalier og andre produkter'. <https://lovdata.no/dokument/SF/forskrift/2004-06-01-922?q=klima+milj%C3%B8+forbruk>

## Other

*N°1 Compulsory Information available on all electronic/electric products regarding how to dispose of waste*

Policy level.

National

Policy actor.

Ministry of Climate and Environment

Policy strategy.

Regulative

Policy measures.

Compulsory information available on all electronic/electric products regarding how to dispose of waste (as according to 'produktforskriften').

Policy stage.

Implemented.

Anticipated effect on household consumption.

Efficiency

Facilitate more material recycling and provide information for supporting environmentally responsible waste management.

Actual effect on greenhouse gas emissions.

Indirect (because of 100% renewable electricity production in Norway)

Documents:

Avfallsforskriften (FOR-2004-06-01-930) 'Forskrift om gjenvinning og behandling av avfall'  
Produktforskriften (FOR-2004-06-01-922) 'Forskrift om begrensning i bruk av helse- og miljøfarlige kjemikalier og andre produkter'. <https://lovdata.no/dokument/SF/forskrift/2004-06-01-922?q=klima+milj%C3%B8+forbruk>

*N°2 Distributors are obliged to accept battery waste free of charge and to inform that waste-batteries are to be managed as special waste*

Policy level.

National

Policy actor.

Ministry of Climate and Environment

Policy strategy.

Regulative

Policy measures.

Distributors of household e-products and municipalities are obliged to accept household e-waste (similar products to those they turnover or have turned over in the past) free of charge at the shop premises or similar place nearby.

Policy stage.

Implemented.

Anticipated effect on household consumption.

Efficiency

Facilitate more material recycling and provide information for supporting environmentally responsible waste management.

Actual effect on greenhouse gas emissions.

Mixed

Documents:

Avfallsforskriften (FOR-2004-06-01-930) 'Forskrift om gjenvinning og behandling av avfall'  
Produktforskriften (FOR-2004-06-01-922) 'Forskrift om begrensning i bruk av helse- og miljøfarlige kjemikalier og andre produkter'. <https://lovdata.no/dokument/SF/forskrift/2004-06-01-922?q=klimate+miljoe+forbruk>

*N°3 Distributors of household e-products and municipalities are obliged to accept cost-free*

Policy level.

National

Policy actor.

Ministry of Climate and Environment

Policy strategy.

Regulative

Policy measures.

Distributors of household e-products and municipalities are obliged to accept cost-free

Policy stage.

Implemented.

Anticipated effect on household consumption.

Efficiency

Facilitate more material recycling and provide information for supporting environmentally responsible waste management.

Actual effect on greenhouse gas emissions.

Mixed

Documents:

Avfallsforskriften (FOR-2004-06-01-930) 'Forskrift om gjenvinning og behandling av avfall'  
Produktforskriften (FOR-2004-06-01-922) 'Forskrift om begrensning i bruk av helse- og miljøfarlige kjemikalier og andre produkter'. <https://lovdata.no/dokument/SF/forskrift/2004-06-01-922?q=klimate+miljoe+forbruk>

*N°4 Distributors of tires are obliged to accept waste-tires free of charge and see to that these are recycled.*

Policy level.

National

Policy actor.

Ministry of Climate and Environment

Policy strategy.

Regulative

Policy measures.

Distributors of tires are obliged to accept waste-tires free of charge and see to that these are recycled.

Policy stage.

Implemented.

Anticipated effect on household consumption.

Efficiency

Facilitate more material recycling and provide information for supporting environmentally responsible waste management.

Actual effect on greenhouse gas emissions.

Mixed

Documents:

Avfallsforskriften (FOR-2004-06-01-930) 'Forskrift om gjenvinning og behandling av avfall'  
Produktforskriften (FOR-2004-06-01-922) 'Forskrift om begrensning i bruk av helse- og miljøfarlige kjemikalier og andre produkter'. <https://lovdata.no/dokument/SF/forskrift/2004-06-01-922?q=klimate+miljoe+forbruk>

*N°5 Eco-labelling (svanemerket)*

Policy level.

National

Policy actor.

Ministry of Children and Equality, Stiftinga Miljømerking (svanemerket.no).

Policy strategy.

Largely information dissemination, regulated process.

Policy measures.

Establishment of 'Stiftinga Miljømerking i Norge' in 1989 – now operates as an independent foundation that receives funding from Government, and is mandated to preserve environmental- and consumer interests by governing official environmental labels. 'Svanemerket' adheres to ISO 14024 standards. The foundation governs the use of the voluntary positive environmental labels 'Svanen' (nordic label) and the 'Flower' (EU ecolabel) on products and services.

Legislation on environmental labels on consumer goods – which covers goods and services. Encourages use of *voluntary* labels – incl. the EU ecolabel.

Policy stage.

Implemented/active.

Anticipated effect on household consumption.

Information

Provide the consumer with necessary information for choosing environmentally sound and informed products.

The labeling scheme is supposed to guide and make it easier for consumers and purchasers to choose products and services that are less environmentally damaging than similar products.

Actual effect on greenhouse gas emissions.

Mixed

Documents

<https://www.regjeringen.no/no/dep/bld/org/etater-og-virksomheter-under-barne--likestillings--og-inkluderingsdepartementet/stiftelsen-miljomerking-/id426153/>

Prop. 112 L (2012–2013) – draft resolution/bill

'Lov om merking av forbruksvarer mv.' (forbrukermerkeloven) LOV-2014-12-12-67. BIR (2015). Avfalls- og ressursstrategi 2016-2020. Høringsutkast november 2015

*N°6 Facilitate and support arenas for second hand and exchange economies*

Policy level.

Local

Policy actor.

Bergen Municipality.

Policy strategy.

Economic support.

Policy measures.

Facilitating role for local measures;

- Facilitate and support arenas for second hand and exchange economies

Policy stage.

Implemented.

Anticipated effect on household consumption.

Reduction

Actual effect on greenhouse gas emissions.

Indirect

Documents

Green strategy – action plan for Bergen Municipality

*N°7 Flexible fee on waste (less if less volume)*

Policy level.

Local

Policy actor.

Bergenområdet Interkommunale Renovasjonsselskap (BIR) – company owned by municipalities in the Bergen-area responsible for managing waste.

Policy strategy.

Tax

Policy measures.

Fee relative to waste volume when delivering waste at the disposal/recycling stations.

Policy stage.

Implemented.

Anticipated effect on household consumption.

Reduction

BIR's strategy is to secure that at least 82% of material or energy is recycled/recovered/utilized from waste and waste processes. This exceeds national waste policy ambitions by 2%. Applying flexible taxes on waste collection (and requiring that all HHs are using BIR for waste collection (BIR has monopoly on this)) is expected to result in HHs reducing their waste volume and increasing the share of recycling.

Actual effect on greenhouse gas emissions.

Indirect

Documents.

BIR (2015). Avfalls- og ressursstrategi 2016-2020. Høringsutkast november 2015

Forskrift om håndtering av avfall fra husholdning (2014).

<http://www.bir.no/Documents/Forskrifter/070515NyAvfallsForskriftBokmal.pdf>

*N°8 Flexible fee on waste (less if recycled)*

Policy level.

Local

Policy actor.

Bergenområdet Interkommunale Renovasjonsselskap (BIR) – company owned by municipalities in the Bergen-area responsible for managing waste.

Policy strategy.

Tax

Policy measures.

Flexible fee on waste; customers that are good at recycling waste (plastic, paper, other containers) deliver less municipal solid waste (or rubbish/refuse), and are thus rewarded by paying a smaller fee for BIR's waste collection and management services (a trial arrangement from 2016-2018 in Bergen municipality (it already applies in the other BIR-municipalities). Main challenge is to develop a good system for those living in building blocks with shared waste collection points).

Policy stage.

Implemented.

Anticipated effect on household consumption.

Efficiency

BIR's strategy is to secure that at least 82% of material or energy is recycled/recovered/utilized from waste and waste processes. This exceeds national waste policy ambitions by 2%. Applying flexible taxes on waste collection (and requiring that all HHs are using BIR for waste collection (BIR has monopoly on this)) is expected to result in HHs reducing their waste volume and increasing the share of recycling.

Actual effect on greenhouse gas emissions.

Indirect

Documents.

BIR (2015). Avfalls- og ressursstrategi 2016-2020. Høringsutkast november 2015  
Forskrift om håndtering av avfall fra husholdning (2014).  
<http://www.bir.no/Documents/Forskrifter/070515NyAvfallsForskriftBokmal.pdf>

N°9 Further develop national-central to a reSource centre for re-use and repairsPolicy level.

Local

Policy actor.

Bergen Municipality.

Policy strategy.

Economic support.

Policy measures.

Facilitating role for local measures;

- Further develop reuse-central to a resource centre for re-use and repairs

Policy stage.

Implemented.

Anticipated effect on household consumption.

Reduction

Actual effect on greenhouse gas emissions.

Indirect

Documents

Green strategy – action plan for Bergen Municipality

*N°10 Improve availability of infrastructure for delivering waste*Policy level.

Local

Policy actor.

Bergenområdet Interkommunale Renovasjonsselskap (BIR) – company owned by municipalities in the Bergen-area responsible for managing waste.

Policy strategy.

Physical

Policy measures.

Improve availability of infrastructure for recycling glass, metal and other materials – establish more return points around Bergen city center and the city districts (some are already available, but BIR wants to expand availability).

Policy stage.

Unequally applied. Implementation-status in brackets behind each measure.

Anticipated effect on household consumption.

## Efficiency

BIR's strategy is to secure that at least 82% of material or energy is recycled/recovered/utilized from waste and waste processes. This exceeds national waste policy ambitions by 2%. Applying flexible taxes on waste collection (and requiring that all HHs are using BIR for waste collection (BIR has monopoly on this)) is expected to result in HHs reducing their waste volume and increasing the share of recycling.

Actual effect on greenhouse gas emissions.

## Indirect

Documents.

BIR (2015). Avfalls- og ressursstrategi 2016-2020. Høringsutkast november 2015

Forskrift om håndtering av avfall fra husholdning (2014).

<http://www.bir.no/Documents/Forskrifter/070515NyAvfallsForskriftBokmal.pdf>

*N°11 Provide Information to users regarding recycling opportunities and the different waste solutions available*

Policy level.

Local

Policy actor.

Bergenområdet Interkommunale Renovasjonsselskap (BIR) – company owned by municipalities in the Bergen-area responsible for managing waste.

Policy strategy.

Information

Policy measures.

Provide information to users regarding recycling opportunities and the different waste solutions available.

Policy stage.

Unequally applied. Implementation-status in brackets behind each measure.

Anticipated effect on household consumption.

## Efficiency

BIR's strategy is to secure that at least 82% of material or energy is recycled/recovered/utilized from waste and waste processes. This exceeds national waste policy ambitions by 2%. Applying flexible taxes on waste collection (and requiring that all HHs are using BIR for waste collection (BIR has monopoly on this)) is expected to result in HHs reducing their waste volume and increasing the share of recycling.

Actual effect on greenhouse gas emissions.

## Indirect

Documents.

BIR (2015). Avfalls- og ressursstrategi 2016-2020. Høringsutkast november 2015

Forskrift om håndtering av avfall fra husholdning (2014).

<http://www.bir.no/Documents/Forskrifter/070515NyAvfallsForskriftBokmal.pdf>

*N°12 Support local 'sharing-arrangements' for material and equipment*Policy level.

Local

Policy actor.

Bergen Municipality.

Policy strategy.

Economic support.

Policy measures.

Facilitating role for local measures;

- support local 'deleordninger' for material and equipment (2016 start-up)

Policy stage.

Implemented

Anticipated effect on household consumption.

Reduction

Actual effect on greenhouse gas emissions.

Indirect

Documents

Green strategy – action plan for Bergen Municipality

*N°13 Support local initiatives for repair-workshops*Policy level.

Local

Policy actor.

Bergen Municipality.

Policy strategy.

Economic support.

Policy measures.

Facilitating role for local measures;

- support local initiatives for repair-workshops

Policy stage.

Implemented

Anticipated effect on household consumption.

Reduction

Actual effect on greenhouse gas emissions.

Indirect

Documents

Green strategy – action plan for Bergen Municipality

N°14 [www.klimaloftet.no](http://www.klimaloftet.no) (online information campaign)

Policy level.

National, local

Policy actor.

Ministry of Climate and Environment, Bergen Municipality and other actors

Policy strategy.

Information.

Part of Government's commitment to distribute climate information to the population and advice on how individual people can easily contribute to climate change mitigation through more climate friendly lifestyles.

Policy measures.

Online information campaign; event: Redesign – action-day: work shops, utstilling, stands where one can repair, buy second hand, competition to redesign something old to something 'new' etc. Aim to spread awareness and inspiration focusing on consumption, reuse and redesign

Policy stage.

Portal launch 2007, as described above arranged in 2011 and 2012. The project as a whole was concluded in 2014.

Anticipated effect on household consumption.

Mixed

Guide people on how individual action on climate change mitigation by leading more climate friendly lifestyles.

Actual effect on greenhouse gas emissions.

Mixed

Documents

(<http://scrapbook.klimaloftet.no/om-oss/>)

## Attachment 2: Identified policies in Sweden

### Food

*N°1. National Food Agency recommendations for an environmentally friendly diet*

#### Policy area

1. Food
2. Diet change

#### Policy level

National

#### Policy sector

Ministry of Enterprise and Innovation

#### Policy actor

National Food Agency

#### Policy strategy

Information

#### Policy measures

Recommendations for an environmentally friendly diet include:

- Reduce meat consumption to 500 grams/week or less
- Increase proportion of vegetable-based food stuffs in diet
- Consider climate impact of type of meat consumed
- Consider environmental impact of fruits and vegetables consumed (e.g. transportation, crop-spraying)
- Choose vegetable-based food stuffs that are in season
- Choose sustainably produced fish products

#### Policy stage

Implemented

#### Anticipated effect on household consumption

Substitute consumption

#### Actual effect on greenhouse gas emissions

Mixed direct and indirect emissions

#### Documents

<http://www.livsmedelsverket.se/matvanor-halsa--miljo/>

*N°2. Food waste reduction (national)*

#### Policy area.

1. Food
2. Waste

Policy level

National

Policy sector

Ministry of Enterprise and Innovation, Ministry of Environment and Energy

Policy actor

National Food Agency; Swedish Environmental Protection Agency

Policy strategy

Information-based/normative

Policy measures

Recommendations for food waste reduction.

As part of the Environmental Quality Objectives, one "milestone target" concerns better resource management in the food chain. Measures are to be taken so that, by 2018, resource management in the food chain is improved through separation and biological treatment of at least 50 per cent of food waste from households, catering services, shops and restaurants, with the aim of recovering plant nutrients, with at least 40 per cent treated in such a way that energy is also recovered.

Policy stage

Implemented

Anticipated effect on household consumption

Improve efficiency

Actual effect on greenhouse gas emissions

Mostly direct emissions

Documents

NFA: <http://www.livsmedelsverket.se/matvanor-halsa--miljo/miljo/ta-hand-om-maten-minska-svinnet/>

SEPA: <https://www.naturvardsverket.se/Stod-i-miljoarbetet/Vagledning/Avfall/Matavfall-minska-svinnet/>, <https://www.naturvardsverket.se/Miljoarbete-i-samhallet/Miljoarbete-i-Sverige/Uppdelat-efter-omrade/Avfall/Avfallsforebyggande-program/Matsvinn/>

<http://www.swedishepa.se/Environmental-objectives-and-cooperation/Swedens-environmental-objectives/Milestone-targets/>

*N°3. Food waste reduction (Umeå)*

Policy area.

Food

Policy level

Local-local

Policy sector

Umeå Municipality

Policy actor

Bostaden AB (municipal housing company, Umeå)

Policy strategy

Information

Policy measures

Recommendations for food waste reduction aimed at residents in apartments owned by municipal housing company, including instructions for separation of waste and recipes to use up leftover food.

Policy stage

Implemented

Anticipated effect on household consumption

Improve efficiency

Actual effect on greenhouse gas emissions

Mostly direct emissions

Documents

Information brochures: <http://www.bostaden.umea.se/hyresgast/sa-fungerar-det/sopor-kallsortering>

*N°4. Climate friendly school meals Umeå*

Policy area.

1. Food
2. Diverse

Policy level

Local

Policy sector

Umeå Municipality

Policy actor

Umeå Municipality Meal Service Unit (provides lunches in preschools and primary schools)

Policy strategy

Information

Policy measures

- At least one vegetarian meal option per day
- One day of the week, only vegetarian food is served
- 30% of food purchases to be certified organic
- Subject to availability, purchased food should be locally produced

Policy stage

Implemented

Anticipated effect on household consumption

Substitution

Actual effect on greenhouse gas emissions

Mixed

Documents

Meal Service Unit Quality Declaration:

<http://umea.se/download/18.41c23e415115c50873a339/1448364393198/Kvalitetsdeklaration+2016+++M%C3%A5ltidsservice.pdf>

*N°5. Promotion of organic food production and consumption*

Policy area

1. Food
2. Organic food

Policy level

National

Policy sector

Ministry of Enterprise and Innovation

Policy actor

Ministry of Enterprise and Innovation, Minister for Rural Affairs

Policy strategy

Subsidies

Policy measures

The Government proposes to appropriate SEK 25 million annually 2018-2020 to promote the development of the organic food market and to increase the production, consumption and export of organic foods.

Policy stage

Proposed

Anticipated effect on household consumption

Substitute consumption

Actual effect on greenhouse gas emissions

Mostly direct emissions (mainly aimed at Swedish agriculture)

Documents

Government Budget Bill for 2017:

<http://www.regeringen.se/contentassets/e926a751d9eb4c978c4d892c659ebc8e/utgiftsomrade-23-areella-naringar-landsbygd-och-livsmedel>

*N°6. Container deposit for consumption-ready beverages*

Policy area

3. Food
4. Waste

Policy level

National

Policy sector

Ministry of the Environment and Energy

Policy actor

- Ministry of the Environment and Energy
- [Returpack](#) (privately-owned company, owned by representatives from trading and brewery sector companies)
  - Supervisory authority: the Swedish Board of Agriculture
  - Official statistics provided by the Swedish Environmental Protection Agency
- Company producers and retailers of consumption-ready beverages

Policy strategy

Regulation by law

Policy measures

Container deposits for plastic and metal beverage containers. The consumer pays a fee when purchasing the beverage, which is then return if and when the container is deposited for recycling.

Illegal to sell consumption-ready beverages in containers that are not part of an authorized Swedish container deposit system, with the exception of beverages that mainly consist of dairy products or vegetable, fruit, or berry juice.

Policy stage

Implemented

Anticipated effect on household consumption

Increase efficiency

Actual effect on greenhouse gas emissions

Not able to assess

Documents

Ordinance (2005:220) on return systems for plastic bottles and metal cans:

[http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-2005220-om-retursystem-for\\_sfs-2005-220](http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-2005220-om-retursystem-for_sfs-2005-220)

## Housing

*N°1. Carbon tax on fuel oil*

Policy area

1. Housing
2. Energy use

Policy level

National

Policy sector

Ministry of Finance

Policy actor

Ministry of Finance; Swedish Tax Agency

Policy strategy

Tax

Policy measures

The energy tax legislation specifies excise energy and carbon taxes on electricity, fuels used for motorized vehicles, and some fuels used for heating.

Chapter 2 regulates energy tax and carbon tax on gasoline, oil, liquefied petroleum gas, natural gas, and aviation fuel. Any other energy products intended for use, sale, or consumption as fuel for motorized vehicle are also subject to energy and carbon tax.

Tax levels are calculated by the Government yearly and regulated through Government Ordinances.

Current carbon taxes:

- Fuel oil: SEK 3204 per m3

Energy tax is differentiated according to environmental classification.

Policy stage

Implemented

Anticipated effect on household consumption

Efficiency

Actual effect on greenhouse gas emissions

Mostly direct emissions

Documents

Lag (1994:1776) om skatt på energi: [http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/lag-19941776-om-skatt-pa-energi\\_sfs-1994-1776](http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/lag-19941776-om-skatt-pa-energi_sfs-1994-1776)

Förordning (2015:595) om fastställande av omräknade belopp för energiskatt och koldioxidskatt för år 2016: [http://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-2015595-om-faststallande-av\\_sfs-2015-595](http://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-2015595-om-faststallande-av_sfs-2015-595)

N°2. *Building Regulations; National Board of Housing, Building and Planning* (Boverkets Byggregler, BBR)

Policy area

1. Housing
2. Building

Policy level

National

Policy sector

Ministry of Health and Social Affairs

Policy actor

National Board of Housing, Building and Planning

Policy strategy

Regulation by law

### Policy measures.

Provisions regulating emissions in new development (Ch. 6:7)

- Buildings shall be designed in such a way that pollutants, which may occur as a result of the activities in the building, can be removed without any adverse effects with respect to the health and hygiene of people in the building or in the surroundings of the building. The discharge must not have an adverse effect on the ground, water or air in the surroundings of the building.
- Specification of maximum permitted values for the emission of organically bound carbon (OBC) in solid fuel and oil heating.

Provisions regulating emissions during alterations (Ch. 6:97)

Provisions regulating energy management and energy efficiency (Ch. 9)

- Buildings shall be designed in such a way that energy use is limited by low heat losses, low cooling demands, efficient use of heat and cooling and efficient use of electricity.
- Different acceptable levels of energy use for different parts of the country depending on climate and temperature.
- Technical specifications.
- Measuring and classification systems.

Provisions regulating energy management and efficiency requirements for alterations to buildings (Ch. 9:9)

- Alterations to buildings must not result in deteriorating energy efficiency, unless there are exceptional circumstances.

### Policy stage

Implemented

### Anticipated effect on household consumption

Improve efficiency

### Actual effect on greenhouse gas emissions

Mostly direct emissions

### Documents

Report analyzing how the implementation of the planning and building legislation can promote climate adaptation (in Swedish):

<http://www.boverket.se/globalassets/publikationer/dokument/2011/klimatanpassning-i-planering-och-byggande-webb.pdf>

Boverkets Byggregler:

<http://www.boverket.se/contentassets/a9a584aa0e564c8998d079d752f6b76d/konsoliderad-bbr-2011-6-tom-2016-6.pdf>

English translation of Boverkets (National Board of Housing, Building and Planning) Building Regulations (earlier version): <http://www.boverket.se/en/start-in-english/publications/2012/building-regulations-bbr/>

### *N°3. Electricity certificates*

(Act on Electricity Certificates (2011:1200), Ordinance on Electricity certificates (2011:1480))

### Policy area

1. Housing
2. Energy use

Policy level

National

Policy sector

Ministry of the Environment and Energy

Policy actor

Ministry of the Environment and Energy; Swedish Energy Agency; Svenska Kraftnät (Swedish Energy Grid)

Policy strategy

Regulation by law

Policy measures

Legislation to promote the production of renewable energy.

[Summary from the Global Climate Legislation Database:](#)

Electricity producers whose electricity production meets the requirements of the Electricity Certificates Act receive one electricity certificate unit for each MWh of electricity that they produce. Demand for certificates is created by the fact that all electricity suppliers, and also certain electricity end users, are required to purchase certificates corresponding to a certain proportion (quota) of their electricity sales or electricity use.

Electricity from the following energy sources entitles its producers to certificates in Sweden: wind power, solar energy, wave energy, geothermal energy, biofuels, peat, and hydropower. The act applies to

- Companies that supply electricity to consumers
- Consumers of electricity using self-produced electricity, while the consumption must exceed 60MWh/ year and must have been produced in a plant that has a capacity of more than 50kW
- Registered energy-intensive companies
- Electricity consumers that purchased/imported electricity from the Nordic electricity market

Policy stage

Implemented

Anticipated effect on household consumption

Improve efficiency

Actual effect on greenhouse gas emissions

Mostly direct emissions

Documents

Lag (2011:1200) om elcertifikat: [http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/lag-20111200-om-elcertifikat\\_sfs-2011-1200](http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/lag-20111200-om-elcertifikat_sfs-2011-1200)

Förordning (2011:1480) om elcertifikat: [http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-20111480-om-elcertifikat\\_sfs-2011-1480](http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-20111480-om-elcertifikat_sfs-2011-1480)

*N°4. Energy performance certificates*

Policy area

1. Housing

## 2. Energy use

### Policy level

National

### Policy sector

Ministry of the Environment and Energy

### Policy actor

National Board of Housing, Building and Planning

### Policy strategy

Regulation by law

### Policy measures

Legislation to promote efficient use of energy in buildings.

Anyone who constructs or appoints someone to construct a building or who sells a building shall ensure that an energy performance certificate exists or is established for that building (Sections 4-6), and that the energy performance certificate is made by an independent expert (Section 12).

The energy performance certificate shall contain information about, inter alia, energy performance, recommendations to increase energy performance, and reference values that allow for consumers to assess and compare the energy performance of the building (Section 9).

### Policy stage

Implemented

### Anticipated effect on household consumption

Improve efficiency

### Actual effect on greenhouse gas emissions

Mostly direct emissions

### Documents

Act (2006:985) on energy declarations for buildings: [http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/lag-2006985-om-energideklaration-for\\_sfs-2006-985](http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/lag-2006985-om-energideklaration-for_sfs-2006-985)

Information from the National Board of Housing, Building and Planning:

<http://www.boverket.se/sv/byggande/energideklaration/> (Swedish),

[http://www.boverket.se/globalassets/publikationer/dokument/2010/tresteg\\_eng\\_a4\\_ny.pdf](http://www.boverket.se/globalassets/publikationer/dokument/2010/tresteg_eng_a4_ny.pdf) (English)

Evaluation report by the National Board of Housing, Building and Planning ([in Swedish: 2009](#)).

### *N°5. State subsidies for solar panels*

(Ordinance (2006:689) on state subsidies for solar panels; Förordning (2009:689) om statligt stöd till solceller)

### Policy area

1. Housing
2. Energy use

Policy level

National

Policy sector

Ministry of the Environment and Energy

Policy actor

Ministry of the Environment and Energy; County Administrative Boards; National Board of Housing, Building and Planning; Swedish Energy Agency

Policy strategy

Subsidies

Policy measures

Legislation to contribute to the adaptation of the energy system and promote the use of solar panels. Forms the basis of grants for all types of solar panel installations. Aimed at households/individuals, municipalities, and companies.

Policy stage

Implemented

Anticipated effect on household consumption

Substitute consumption

Actual effect on greenhouse gas emissions

Mostly direct emissions

Documents

Ordinance (2006:689) on state subsidies for solar panels: [http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-2009689-om-statligt-stod-till\\_sfs-2009-689](http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-2009689-om-statligt-stod-till_sfs-2009-689)

Information from the Swedish Energy Agency:

<http://www.energimyndigheten.se/fornybart/solenergi/stod-till-solceller/>

*N°6. Tax reduction for microgeneration of renewable electricity*  
(Skattereduktion för mikroproduktion av förnybar el)

Policy area

1. Housing
2. Energy use

Policy level

National

Policy sector

Ministry of the Environment and Energy

Policy actor

Ministry of the Environment and Energy; Swedish Tax Agency

Policy strategy

Tax

### Policy measures

Reform aimed at facilitating and promoting private individuals' investments in small-scale generation of electric power from renewable energy sources for personal use.

Micro-producers receive financial compensation for the excess electricity they feed into the grid (the Income Tax Act (1999:1229), Chapter 67, Sections 27-33; as amended by the Act (2014:1468) on Changes to the Income Tax Act).

Changes to the Electricity Act (1997:857), the Income Tax Act (1999:1229), the Tax Procedure Act (2011:1244), and the Tax Procedure Ordinance (2011:1261) following the Government's Budget Bill for 2015 (Prop. 2014/15:1).

In the Budget Bill for 2017, the Government proposes additional measures to encourage microgeneration including exemption from the VAT registration system for low volume businesses.

### Policy stage

Implemented – additional measures planned

### Anticipated effect on household consumption

Substitute consumption

### Actual effect on greenhouse gas emissions

Mostly direct emissions

### Documents

Tax Income Act (1999:1229): [http://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/inkomstskattelag-19991229\\_sfs-1999-1229](http://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/inkomstskattelag-19991229_sfs-1999-1229)

Budget Bill for 2017:

<http://www.regeringen.se/contentassets/6bf145c90c5d4429abd6fcc9488585c0/fakta-pm-bp17--sveriges-storsta-klimat-och-miljobudget-nagonsin.pdf>

*N°7. Energy and climate counselling*

### Policy area

1. Housing
2. Energy use

### Policy level

Local-national

### Policy sector

Ministry of the Environment and Energy

### Policy actor

Swedish Energy Agency; Municipalities

### Policy strategy

Subsidies (Information)

### Policy measures

Funding for municipalities to deliver energy and climate counseling according to the following requirements (Sections 3-9):

- Aimed at households, businesses, and organizations
- Organized to guarantee impartiality and freedom from commercial interests

- Promoting efficient and environmentally friendly energy use; diminished climatic effects from energy use; and the fulfilment of Parliament's goals for energy and climate policy
- Disseminating locally and regionally adapted knowledge about climatic effects; energy efficiency; energy use; and prerequisites for changed energy use in public and private buildings

Individual or cooperating municipalities can receive funding to establish local energy and climate counseling agencies.

**Umeå Municipality** offers energy and climate counseling to individuals and companies, including:

- Individual counseling
- Lectures and seminars
- Tools and templates for calculations of e.g. energy and electricity use, carbon footprint
- Newsletters and other resources

#### Policy stage

Implemented

#### Anticipated effect on household consumption

Reduce consumption

Report by the Swedish Energy Agency ([in Swedish; 2015](#)) includes survey of small house owners. A majority state that they have found counseling useful. Counseling has resulted in reduced costs, reduced energy use, and increased level of comfort. A majority are pleased with the counseling they have received.

#### Actual effect on greenhouse gas emissions

Mostly direct emissions

#### Documents

Förordning (2016:385) om bidrag till kommunal energi- och klimatrådgivning:

[https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-2016385-om-bidrag-till-kommunal\\_sfs-2016-385](https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-2016385-om-bidrag-till-kommunal_sfs-2016-385)

Umeå Municipality Energy and climate counseling:

<http://www.umea.se/umeakommun/byggaboochmiljo/energiochuppvarmning/energiochklimatradgivning.4.1a7771bd119f219c89980005589.html>

*N°8. Household energy use monitoring (national)*

(Timmättningsreformen)

#### Policy area

1. Housing
2. Energy use

#### Policy level

National

#### Policy sector

Ministry of the Environment and Energy

#### Policy actor

Ministry of the Environment and Energy; electricity companies

Policy strategy

Information

Policy measures

Option for households to enter into agreements with electricity providers based on hourly monitoring of electricity used, without having to pay any additional costs.

Policy stage

Implemented

Anticipated effect on household consumption

Reduce consumption

An evaluation by the Swedish Energy Markets Inspectorate (2014) shows limited household utilization of individual monitoring under the policy. The evaluation did not assess environmental effects.

Actual effect on greenhouse gas emissions

Mostly direct emissions

Documents

Govt. Bill 2011/12:98:

<http://www.regeringen.se/contentassets/05d1e497a6154cb19eb7cca284ceb393/timmatning-for-aktiva-elkonsumenter-prop-20111298>

The Electricity Act 1997:857 (Ch. 3, Section 11):

<http://www.notisum.se/rnp/sls/lag/19970857.htm>

Swedish Energy Markets Inspectorate evaluation (2014):

[http://www.ei.se/Documents/Publikationer/rapporter\\_och\\_pm/Rapporter%202014/Ei\\_R2014\\_05.pdf](http://www.ei.se/Documents/Publikationer/rapporter_och_pm/Rapporter%202014/Ei_R2014_05.pdf)

*N°9. Municipal planning city center*

(Detailed comprehensive plan<sup>3</sup> for Umeå city center)

Policy area

1. Housing
2. Building

Policy level

Local-local

Policy sector

Umeå Municipality

Policy actor

Umeå Municipality Community Planning Committee; Community Planning Office

Policy strategy

Regulation by law

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<sup>3</sup> Municipal comprehensive plans (required under the Planning and Building Act) outline guidelines for municipal planning and constitute the basis for development plans. Detailed comprehensive plans are used when there is a need for more detailed consideration of a limited part of the municipal's area. See e.g. [http://commin.org/upload/Glossaries/National\\_Glossaries/COMMIN\\_Swedish\\_Glossary.pdf](http://commin.org/upload/Glossaries/National_Glossaries/COMMIN_Swedish_Glossary.pdf)

Policy measures

Aims and measures targeting or affecting GHG-related consumption include:

- Increase urban density and promote mix-used development
- Prioritize residential over commercial development where possible
- Ensure accessibility and ease of transport to the city center, prioritizing pedestrian, bicycle, and public transport

Policy stage

Implemented

Anticipated effect on household consumption

Substitute consumption

Actual effect on greenhouse gas emissions.

Mostly direct emissions

Documents

Detailed comprehensive plan for Umeå city center (2011):

[http://www.umea.se/download/18.1a5fea8a1437b3e6e528806/1390481539173/Fop\\_centrala\\_stadsdelarna\\_lagupplost.pdf](http://www.umea.se/download/18.1a5fea8a1437b3e6e528806/1390481539173/Fop_centrala_stadsdelarna_lagupplost.pdf)

*N°10. Offer to rent or buy solar panels*

Policy area

1. Housing
2. Energy use

Policy level

Local-local

Policy sector

Umeå Municipality

Policy actor

Umeå Energi (municipal energy company)

Policy strategy

Information; Subsidies

Policy measures

Offer to households to rent or buy solar panels.

- Offer to rent solar panels includes installation and full service (fixed monthly fee).
- Offer to buy includes installation (lump-sum payment).
- Surplus electricity may be sold back to Umeå Energi's grid.

Policy stage

Implemented

Anticipated effect on household consumption

Substitute consumption

Actual effect on greenhouse gas emissions.

Mostly direct emissions

Documents

<http://www.umeaenergi.se/el/solceller/hyra-eller-kopa>

*N°11. Household energy use monitoring (local)*

Policy area

1. Housing
2. Energy use

Policy level

Local-local

Policy sector

Umeå Municipality

Policy actor

Bostaden AB (municipal housing company); Umeå Energi (municipal energy company); Umeå Municipality

Policy strategy

Information

Policy measures

Individual monitoring of household consumption of electricity and water, installed in almost 700 apartments.

Policy stage

Implemented

Anticipated effect on household consumption

Reduce consumption

Actual effect on greenhouse gas emissions

Mostly direct emissions

Documents

Brochure about individual monitoring:

[http://www.bostaden.umea.se/Sve/PDF/Broschyror/Echolog\\_flyer\\_HR.pdf](http://www.bostaden.umea.se/Sve/PDF/Broschyror/Echolog_flyer_HR.pdf)

*N°12. Sustainable renovation and development of municipally-owned housing*

Policy area

1. Housing
2. Building

Policy level

Local-local

Policy sector

Umeå Municipality

Policy actor

Bostaden AB (municipal housing company); Umeå Energi (municipal energy company); Umeå Municipality

Policy strategy

Physical measures

Policy measures

Pilot project<sup>4</sup> 2010-2014 for sustainable urban development. Large-scale sustainable renovation of housing built in the 1970s and development of new low-energy buildings in the residential area Ålidhem<sup>5</sup>.

Implemented measures;

- Renovation of 405 apartments, decreasing their energy consumption by 40-50%
- Development of 137 new apartments with an energy consumption of 65 kWh/sqm per year (50% less than building standards requirements)
- Solar cell installation, aiming to supply the area with a third of the electricity used in housing
- Winter garden, powered by solar cells during the lighter months of the year
- Installation of washing machines connected to the district heating system, which reduces electricity consumption

Policy stage

Implemented

Anticipated effect on household consumption

Reduce consumption

Reported results:

- Reduction of energy use for the area: 26% (2GWh/400 ton CO2 equivalent)
- Reduction of household waste: 32%
- Increase of recycled waste: 54%
- Reduction of purchased electricity after completed installation of solar panel system: 27%
- Reduction of use of hot water: 16%

Actual effect on greenhouse gas emissions

Mostly direct emissions

Documents

Appendix to Umeå's application for the European Green Capital Award, 2015:

<http://www.umea.se/download/18.65c1214d14f38ac155364e41/1446109860348/Good+practices.pdf>

Bostaden AB « Hållbara Ålidhem » final report:

<http://www.bostaden.umea.se/Sve/PDF/Rapporter/H%C3%A5llbara%20%C3%85lidhem%20slutrapport%20till%20Boverket.pdf>

Bostaden AB website: <http://www.bostaden.umea.se/hallbara-alidhem>,

<http://www.bostaden.umea.se/miljofokus>

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<sup>4</sup> Much of the housing developed in the 1960s and 1970s as part of the so-called "Million Programme" is due or overdue for renovation. Bostaden AB's housing stock includes about 5000 such buildings.

<sup>5</sup> 3 km from Umeå city center. Area developed in 1960s and 1970s, mostly 2-4 story rental apartment blocks. Pop. ~6000; large proportion students, young people, and immigrants.

*N°13. Guarantees of origin of electricity*Policy area

3. Housing
4. Energy use

Policy level

National

Policy sector

Ministry of the Environment and Energy

Policy actor

Swedish Energy Agency and Svenska Kraftnät

Policy strategy

Information

Policy measures

Legislation regulating the right of energy producers to be issued a guarantee of origin of electricity. The aim is to ensure that final customers are provided with clear information on the origins of the electricity they purchase.

Policy stage

Implemented

Anticipated effect on household consumption

Substitute consumption

Actual effect on greenhouse gas emissions

Mixed

Documents

Guarantees of Origin of Electricity Act (2010:601): [http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/lag-2010601-om-ursprungsgarantier-for-el\\_sfs-2010-601](http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/lag-2010601-om-ursprungsgarantier-for-el_sfs-2010-601)

*N°14. Tax reduction for domestic services*Policy area

5. Housing
6. Energy use

Policy level

National

Policy sector

Ministry of the Environment and Energy

Policy actor

Swedish Tax Agency

Policy strategy

Subsidies

Policy measures

Tax reduction for domestic services including repairs, maintenance, conversions, and extensions. Labor costs for these services are tax deductible for owners of housing units, cooperative flats, or freehold apartments who purchase them.

Not specifically aimed at energy efficiency or emissions reduction but does include a number of measures that improve energy efficiency, e.g. insulation, replacing windows, replacing heating systems, etc. (see e.g. [Stockholm Climate and Energy Counseling website](#))

Policy stage

Implemented

Anticipated effect on household consumption

Improve efficiency

Actual effect on greenhouse gas emissions

Not able to assess

Documents

Swedish Tax Agency website:

<https://www.skatteverket.se/servicelankar/otherlanguages/inenglish/businessesandemployers/declaringtaxesbusinesses/rotandrutwork.4.8dcbbe4142d38302d793f.html>

*N°15. Mandatory energy labelling of household appliances*

Policy area

7. Other
8. Energy use

Policy level

EU

Policy sector

Ministry of the Environment and Energy

Policy actor

Swedish Energy Agency

Policy strategy

Information

Policy measures

Mandatory energy labelling of certain household appliances.

Policy stage

Implemented

Anticipated effect on household consumption

Improve efficiency

### Actual effect on greenhouse gas emissions

Mixed

### Documents

Energy Labelling Directive (2010/30/EU): <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010L0030&from=en>

Energy Labelling Act (2011:721): [http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/lag-2011721-om-markning-av-energirelaterade\\_sfs-2011-721](http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/lag-2011721-om-markning-av-energirelaterade_sfs-2011-721)

Swedish Energy Agency website:

<http://www.energimyndigheten.se/en/sustainability/households/other-energy-consumption-in-your-home/energy-labelling/>

## Transportation

*N°1. Carbon tax on gasoline and diesel*

### Policy area

3. Transportation
4. Private cars

### Policy level

National

### Policy sector

Ministry of Finance

### Policy actor

Ministry of Finance; Swedish Tax Agency

### Policy strategy

Tax

### Policy measures

The energy tax legislation specifies excise energy and carbon taxes on electricity, fuels used for motorized vehicles, and some fuels used for heating.

Chapter 2 regulates energy tax and carbon tax on gasoline, oil, liquefied petroleum gas, natural gas, and aviation fuel. Any other energy products intended for use, sale, or consumption as fuel for motorized vehicle are also subject to energy and carbon tax.

Tax levels are calculated by the Government yearly and regulated through Government Ordinances.

Current carbon taxes:

- Gasoline: SEK 2.59 per liter
- Diesel: SEK 3204 per m3

Energy tax is differentiated according to environmental classification.

### Policy stage

Implemented

### Anticipated effect on household consumption

Efficiency

### Actual effect on greenhouse gas emissions

Mostly direct emissions

### Documents

Lag (1994:1776) om skatt på energi: [http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/lag-19941776-om-skatt-pa-energi\\_sfs-1994-1776](http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/lag-19941776-om-skatt-pa-energi_sfs-1994-1776)

Förordning (2015:595) om fastställande av omräknade belopp för energiskatt och koldioxidskatt för år 2016: [http://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-2015595-om-faststallande-av\\_sfs-2015-595](http://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-2015595-om-faststallande-av_sfs-2015-595)

### *N°2. Fossile-fuel independent vehicle fleet*

### Policy area

1. Transportation
2. Diverse

### Policy level

National

### Policy sector

Ministry of the Environment and Energy

### Policy actor

Ministry of the Environment and Energy; Parliament

### Policy strategy

Planning

### Policy measures.

Adoption of target for Sweden to have a fossil-fuel independent vehicle fleet by 2030.

Suggested policy measures included:

- Tax credits for new "green cars"
- Increased carbon dioxide factor in vehicle tax
- Increased energy tax on diesel
- Extending subsidies to filling stations for renewable fuels

### Policy stage

Proposed

Followed up by Committee commissioned by the Government to investigate possible courses of action to reach the target ([SOU 2013:84](#)). The Committee's final report proposes, inter alia, measures aimed at:

- Societal change towards fewer and more efficient transports (Chapter 6)
  - Urban planning to prioritize and encourage walking, cycling, and public transport
  - Increased use of car pools, e-commerce, distance education, telecommuting, etc.
- Increasing energy efficiency in driving (Chapter 9)
- Replacing fossil fuels with renewable fuels (Chapters 10 and 11)

### Anticipated effect on household consumption

Substitute consumption (but also improve efficiency and reduce consumption)

Actual effect on greenhouse gas emissions

Mostly direct emissions

Documents

Government Bills [2008/09:162](#) and [2008/09:163](#) (*An integrated climate and energy policy*, english summary [here](#))

Reports by the Committee on Environment and Agriculture [2008/09:MJU28](#) and the Committee on Industry and Trade [2008/09:NU25](#)

*N°3. Tax credit for biofuels*Policy area.

1. Transportation
2. Diverse

Policy level

National

Policy sector

Ministry of Finance

Policy actor

Ministry of Finance; Swedish Tax Agency

Policy strategy

Subsidies

Policy measures

Increased exemption from energy tax for certain biofuels.

Policy stage

Proposed

Proposal to amend Act (1994:1776) on Energy tax, pending Parliamentary approval.

Anticipated effect on household consumption

Substitution

Actual effect on greenhouse gas emissions

Mostly direct emissions

Documents

Government Memorandum:

<http://www.regeringen.se/contentassets/f49674eb7e574a6e92712bb0e1eba739/sankt-skatt-pa-biodrivmedel>

*N°4. Bonus-malus system for new light vehicles*Policy area

1. Transportation
2. Private car

Policy level

National

Policy sector

Ministry of Finance

Policy actor

Ministry of Finance; Swedish Tax Agency; Swedish Transport Administration

Policy strategy

Tax (and subsidies)

Policy measures

Proposal to implement a new bonus-malus system for new light vehicles (passenger cars, light trucks and light buses) through amendments of The Road Traffic Tax Act (2006:227) and The Super-Green Car Premium Ordinance (2011:1590).

Bonus: Higher premium/bonus for new super-green cars.

- Natural persons who acquire an eligible vehicle shall receive a bonus of SEK 60 000 for a vehicle that emits 0 grams CO<sub>2</sub>/km (combined fuel consumption); SEK 45 000 for a vehicle that emits more than 0 but no more than 35 grams CO<sub>2</sub>/km; and SEK 35 000 for a vehicle that emits more than 35 but no more than 50 grams CO<sub>2</sub>/km. The bonus cannot exceed 25 % or less of the new vehicle's purchase price.

Malus: Higher vehicle tax for new vehicles.

- For gas- and diesel-powered vehicles: SEK 80/gram CO<sub>2</sub> for emissions (combined fuel consumption) over 95 grams/km for the first three years; thereafter SEK 22/gram CO<sub>2</sub>.
- For vehicles than can use alternative fuels: SEK 11/gram CO<sub>2</sub> for emissions over 95 grams/km.

Policy stage

Proposed

Anticipated effect on household consumption

Substitute consumption

Actual effect on greenhouse gas emissions.

Mostly direct emissions

Documents

SOU 2016:33:

[http://www.regeringen.se/contentassets/e38bb79787714469bc0a1a519669cf7a/sou-2016\\_33-webb.pdf](http://www.regeringen.se/contentassets/e38bb79787714469bc0a1a519669cf7a/sou-2016_33-webb.pdf)

*N°5. Super-Green Car Premium Ordinance*

Policy area

1. Transportation
2. Private car

Policy level

National

Policy sector

Ministry of the Environment and Energy

Policy actor

Ministry of the Environment and Energy; Swedish Transport Administration

Policy strategy

Subsidies

Policy measures

Ordinance aimed at promoting the use and sales of highly fuel-efficient cars with low climate impact. A super-green car is a passenger car that complies with the EU's latest exhaust emissions limits and that emits no more than 50 grams of carbon dioxide per kilometer.

Applies to both natural and legal persons. Premiums for natural persons:

- SEK 40 000 per car, for super-green cars emitting 0 grams of carbon dioxide (combined fuel consumption);
- SEK 20 000 per car for other super-green cars

Subject to sufficient funds, the premium shall be disbursed to all natural and legal persons who have acquired a super-green car during the period 1 January 2012 to 31 December 2016. In order to be granted the premium, the applicant cannot have received other public funding for the purchase of the same car.

Policy stage

Implemented

Anticipated effect on household consumption

Substitute consumption

Actual effect on greenhouse gas emissions

Mostly direct emissions

Documents

Super-Green Car Premium Ordinance (2011:1590): [http://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-20111590-om-supermiljobilspremie\\_sfs-2011-1590](http://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-20111590-om-supermiljobilspremie_sfs-2011-1590)

*N°6. CO2-differentiated vehicle tax*

Policy area

1. Transportation
2. Private car

Policy level

National

Policy sector

Ministry of Finance

Policy actor

Ministry of Finance; Swedish Tax Agency; Swedish Transport Administration

Policy strategy

Tax

Policy measures

Excise tax on CO<sub>2</sub> emissions in fuel.

- *Chapter 2, Sections 7-9:* The CO<sub>2</sub> tax (added to the basic amount of SEK 360/year per vehicle) is SEK 22/gram CO<sub>2</sub> emitted (combined fuel consumption) over 111 grams/km. For diesel-fueled vehicles, multiply b) with 2.37 and add environmental fee of SEK 250 (for vehicles registered in or after 2008) or SEK 500 (for vehicles registered before 2008).

Tax exemptions for new, low-emitting vehicles.

- *Chapter 2, Section 11a:* Low-emitting or low-energy consuming vehicles are exempt from vehicle tax during its first five years liable to tax.

Policy stage

Implemented

Anticipated effect on household consumption

Increase efficiency

Actual effect on greenhouse gas emissions

Mostly direct emissions

Documents

Road Traffic Tax Act (SFS 2006: 227): [http://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/vagtrafikskattelag-2006227\\_sfs-2006-227](http://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/vagtrafikskattelag-2006227_sfs-2006-227)

*N°7. Support to public transport in urban areas ("Urban Environment Agreements")*

Policy area

1. Transportation
2. Public transportation

Policy level

National

Policy sector

Ministry of Enterprise and Innovation

Policy actor

Ministry of Enterprise and Innovation; Swedish Transport Administration

Policy strategy

Economic support

Policy measures

Through "Urban Environment Agreements" (Stadsmiljöavtal), the Swedish Transport Administration (Trafikverket) may allocate governmental funding to municipalities and county councils for measures resulting in a higher proportion of carriage of passengers by public transport.

Measures shall lead to energy efficient solutions with low GHG emissions. The funding should especially promote innovative, high capacity, and resource efficient public transport solutions. Funding is dependent on recipients' implementation of measures contributing to sustainable transports or increased building of housing.

Part of the "climate packages" of budget bills for 2016 and 2017 (funding increased yearly).

#### Policy stage

Implemented

#### Anticipated effect on household consumption

Substitute consumption

#### Actual effect on greenhouse gas emissions

Mostly direct emissions

#### Documents

Ordinance (2015:579) on support to the promotion of sustainable urban environments (Förordning (2015:579) om stöd för att främja hållbara stadsmiljöer):

[http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-2015579-om-stod-for-att-framja\\_sfs-2015-579](http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-2015579-om-stod-for-att-framja_sfs-2015-579)

Swedish Transport Administration: <http://www.trafikverket.se/for-dig-i-branschen/Planera-och-utreda/Planerings--och-analysmetoder/Finansieringsmetoder/statligt-stod-for-hallbara-stadsmiljoer---stadsmiljoavtal/>

Budget bill for 2016 summary:

<http://www.regeringen.se/contentassets/7cd7362c2b6046b0b458f98311d1cef1/fakta-pm-klimatpaketet.docx.pdf>

Budget bill for 2017 summary:

<http://www.regeringen.se/contentassets/6bf145c90c5d4429abd6fcc9488585c0/fakta-pm-bp17--sveriges-storsta-klimat-och-miljobudget-nagonsin.pdf>

*N°8. Enhanced railroad maintenance*

#### Policy area

1. Transportation
2. Public transportation

#### Policy level

National

#### Policy sector

Ministry of Enterprise and Innovation, Minister for Infrastructure

#### Policy actor

Swedish Transport Administration

#### Policy strategy

Physical measures

#### Policy measures

The Government's Budget Bills for 2016 and 2017 include increased funding for enhanced railroad maintenance on highly frequented lines and in rural areas.

In the Budget Bill for 2017, the Government proposes a new campaign to increase the capacity of the railroad system in order to improve the capacity and robustness of the

transport system, including measures both in and outside of the metropolitan regions. The Government proposes to allocate SEK 200 million for the campaign in the 2017 budget.

Policy stage

Planned

Anticipated effect on household consumption

Substitute consumption

Actual effect on greenhouse gas emissions

Mostly direct emissions

Documents

Budget Bill for 2016:

<http://www.regeringen.se/contentassets/7cd7362c2b6046b0b458f98311d1cef1/fakta-pm-klimatpaketet.docx.pdf>

Budget Bill for 2017:

<http://www.regeringen.se/contentassets/6bf145c90c5d4429abd6fcc9488585c0/fakta-pm-bp17--sveriges-storsta-klimat-och-miljobudget-nagonsin.pdf>

*N°9. Bicycle strategy*

Policy area

1. Transportation
2. Biking

Policy level

National

Policy sector

Ministry of Enterprise and Innovation, Minister for Infrastructure

Policy actor

The Government Offices; The Swedish Transport Administration; The National Board of Housing, Building and Planning; Transport Analysis; Municipalities

Policy strategy

Planning

Policy measures

Development of strategy to promote and increase safe bicycling.

The Budget Bill for 2016 includes funding for a two-year campaign to promote bicycling.

Policy stage

Proposed

Anticipated effect on household consumption

Substitute consumption

Actual effect on greenhouse gas emissions

Mostly direct emissions

Documents

<http://www.regeringen.se/artiklar/2015/12/gemensamt-mote-om-en-nationell-cykelstrategi/>  
<http://www.regeringen.se/regeringens-politik/transporter-och-infrastruktur/mal-for-transporter-och-infrastruktur/>

<http://www.regeringen.se/contentassets/7cd7362c2b6046b0b458f98311d1cef1/fakta-pm-klimatpaketet.docx.pdf>

*N°10. Funding for local climate initiatives (“the Climate Leap”)*

Policy area

1. Transportation
2. Diverse

Policy level

National

Policy sector

Ministry of the Environment and Energy

Policy actor

Swedish Environmental Protection Agency

Policy strategy

Economic support

Policy measures

Funding for local climate investments. Municipalities, county councils, companies, organizations, and foundations may apply for funding of concrete climate initiatives in areas including transports, industries, housing, urban planning, and energy.

Activities may include, but are not limited to:

- Charging infrastructure for electric vehicles
- Biogas plants
- Bicycle paths and other bicycle infrastructure

The Budget Bill for 2017 proposes an extension of the program and additional funding.

Policy stage

Implemented

Anticipated effect on household consumption

Substitute consumption

Private individuals cannot apply for funding, but many of the supported activities attempt to facilitate climate-friendly lifestyles.

Actual effect on greenhouse gas emissions

Mostly direct emissions

Documents

Ordinance (2015:517) on support for local climate investments:

[http://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-2015517-om-stod-till-lokala\\_sfs-2015-517](http://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-2015517-om-stod-till-lokala_sfs-2015-517)

Govt. Budget Bill for 2017:

<http://www.regeringen.se/contentassets/6bf145c90c5d4429abd6fcc9488585c0/fakta-pm-bp17--sveriges-storsta-klimat-och-miljobudget-nagonsin.pdf>

*N°11. Bicycle Traffic Program*

(Adopted by Municipal Executive Board's Industry and Planning Committee 2009)

#### Policy area

1. Transportation
2. Biking

#### Policy level

Local-local

#### Policy sector

Umeå Municipality

#### Policy actor

Umeå Municipality

#### Policy strategy

Physical measures

#### Policy measures

#### **Goals:**

- **Increase proportion of carriage of passengers by bicycle.**
- Bicycle and pedestrian traffic combined shall be the most common means of weekday travel for residents in the town of Umeå.
- By 2014, public transport, bicycle, and pedestrian traffic combined shall account for least 55 % of trips for residents in the town of Umeå. By 2022, the proportion shall be at least 65 %.

#### **Proposed measures**

- Municipal planning/comprehensive plans
  - Strive for high urban density
  - Prioritize public transport, bicycle and pedestrian traffic
  - Locate places of work and housing in close proximity to public transport stations
- Promote bicycle commuting
  - Ensure cohesion and accessibility of cycling infrastructure
  - Provide bicycle parking in close proximity to bicycle paths and places of work
  - Consider specific demands for different types of bicycle parking
- High maintenance standard of cycling infrastructure
  - Snow-free ground maintenance including annual inspections, repairs, resetting after construction, clearance of brushwood, control of lighting, and sweeping
  - Winter maintenance including snow/ice removal, sanding, and sand removal
    - Most heavily used bicycle and pedestrian paths prioritized; [priority-ranking system](#) reviewed yearly; maps available and users encouraged to choose prioritized paths

#### **Reported measures 2015**

- Infrastructure
  - 4 new cycling paths 2015, an additional 6 planned for 2016
  - Maintenance of cycling paths, including new coating on 3.3% of cycling paths
  - Measures for increased safety and security, including traffic separation, new lighting, improved signposting
  - Bicycle parking areas, parking racks, weatherproof parking racks
- Information
  - Information campaigns and events aimed at schools, university students, and the general public
  - Information campaigns on traffic co-existence, bicycle parking
  - Participation in [European Cycling Challenge](#) and [Cykelfrämjandets Kommunvelometer](#); joined the “Swedish Bicycle Cities” network ([Svenska cykelstäder](#))
  - Organization of “cycling forum” for information, discussions, and suggestions; arranged twice yearly for organizations, politicians, and municipality officials
  - Production of updated cycling map, distribution to households

#### Policy stage

Implemented

#### Anticipated effect on household consumption

Substitute consumption

#### Actual effect on greenhouse gas emissions

Mostly direct emissions

#### Documents

Bicycle traffic program:

<http://www.umea.se/download/18.a979c45130c4b8f4e3800018818/1361888645666/Cykeltrafikprogram+slutrapport+2011-07-07.pdf>

Bicycle report 2015:

[http://www.umea.se/download/18.1748d19a1537eec874e3987/1458288844713/UK\\_Cykelbokslut\\_2015-LR.pdf](http://www.umea.se/download/18.1748d19a1537eec874e3987/1458288844713/UK_Cykelbokslut_2015-LR.pdf)

Municipality website pages on bicycling:

<http://www.umea.se/umeakommun/trafikochinfrastruktur/trafikochgator/cyklingochcykelvagar.4.6afa3d411ffd91fba800019566.html>

*N°12. Test travelers*

#### Policy area

1. Transportation
2. Public transportation

#### Policy level

Local-local

#### Policy sector

Umeå municipality

#### Policy actor

Umeå Municipality Public Transport Administration; Ultra (local bus service operator)

Policy strategy

Information

Policy measures

Free bus passes to selected car commuters promising to commute by public transport (“test travelers”).

Policy stage

Implemented

Anticipated effect on household consumption

Substitute consumption

Actual effect on greenhouse gas emissions

Mostly direct emissions

Documents

<http://www.tabussen.nu/ultra/kundservice/testresenarer/>

*N°13. Green Parking Payoff*

Policy area

1. Transportation
2. Private car

Policy level

Local-local

Policy sector

Umeå Municipality

Policy actor

Umeå Municipality; UPAB (municipal parking company)

Policy strategy

Economic incentive; Information-based/normative

Policy measures

Parking payoffs allow property developers and owners to purchase parking from the municipal parking company to fulfil parking standards (= requirements under municipal regulation to provide a certain number of parking spaces per building) rather than having to build parking spaces themselves.

Under the Green Parking Payoff system, the municipality reduces the parking standard (= gives discount on parking purchase) for commercial property developers and owners in exchange for a commitment to increase opportunities for tenants to use other means of transportation than cars for journeys to and from work.

Through a Green Parking Payoff agreement, the municipality commits to:

- Reduce the required number of employee parking spaces for a commercial property
- Through the municipal parking company UPAB, provide for parking facilities in proximity to the city center
- Manage public transport fund

The property owner commits to:

- Purchase the (reduced) number of required parking spaces from the municipality
- Contribute to a public transport fund that will enable incentives for employees to use public transport
- Provision of bicycle facilities including dressing rooms, service stations, and heated bicycle garages
- Facilitation for carpooling
- Develop a communication plan to promote the new forms of sustainable urban mobility

#### Policy stage

Implemented (pilot project)

#### Anticipated effect on household consumption

Substitute consumption

#### Actual effect on greenhouse gas emissions

Mostly direct emissions

#### Documents

English description: <http://www.eltis.org/discover/case-studies/umeas-green-parking-purchase-model-sweden>

Umeå Municipality website:

<http://www.umea.se/download/18.6cb02deb13d3f84af7a19f3/1362756657363/Om+gr%C3%B6nt+parkeringsk%C3%B6p.pdf>

Umeå Municipality Parking Strategy (2013):

[http://www.umea.se/download/18.4b297d5c1558de07ab010527/1468224182865/Parkeringsprogram\\_201311-12.pdf](http://www.umea.se/download/18.4b297d5c1558de07ab010527/1468224182865/Parkeringsprogram_201311-12.pdf)

#### *N°14. Facilitation of multimodal transport*

(Park & Ride, Park & Bike, Bike & Ride, Bike & Fly)

#### Policy area

1. Transportation
2. Diverse

#### Policy level

Local-local

#### Policy sector

Umeå Municipality

#### Policy actor

Umeå Municipality; UPAB (municipal parking company); Umeå Airport

#### Policy strategy

Physical measures

#### Policy measures

Measures to facilitate multimodal transports and reduce car traffic in city center.

#### **Park & Bike**

- Parking spaces outside of the city center including access to bicycle parking facilities.

- A total of 18 spaces in 2 locations currently available. Additional potential locations suggested in municipal parking strategy from 2013.

### **Bike & Fly**

- Bicycle garage, service facilities, and storage lockers for e.g. helmets and clothes at Umeå Airport (5 km from city center)
- Free of charge (up to 1 month)
- Around 140 spaces available, of which 40 are heated

### **Bike & Ride**

- Increased number of bicycle parking spaces in proximity to railway stations.

### **Park & Ride**

- Proposal to build parking spaces close to public transportation outside of the city center, to facilitate combined car/public transportation commute.

### Policy stage

Partly implemented

### Anticipated effect on household consumption

Substitute consumption

### Actual effect on greenhouse gas emissions

Mostly direct emissions

### Documents

UPAB Park & Bike:

<http://www.upab.umea.se/tjanster/parkbike.4.20c92392148f96bd89f3e59.html>

Umeå Airport: <http://www.swedavia.se/umea/till-fran/cykel/#gref>

Umeå Municipality Parking Strategy (2013):

[http://www.umea.se/download/18.4b297d5c1558de07ab010527/1468224182865/Parkeringsprogram\\_201311-12.pdf](http://www.umea.se/download/18.4b297d5c1558de07ab010527/1468224182865/Parkeringsprogram_201311-12.pdf)

### *N°15. Sustainable Urban Transport Plan*

(Transport strategy as part of detailed comprehensive plan<sup>6</sup> for Umeå city center)

### Policy area

1. Transportation
2. Diverse

### Policy level

Local-local

### Policy sector

Umeå Municipality

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<sup>6</sup> Municipal comprehensive plans (required under the Planning and Building Act) outline guidelines for municipal planning and constitute the basis for development plans. Detailed comprehensive plans are used when there is a need for more detailed consideration of a limited part of the municipal's area. See e.g.

[http://commin.org/upload/Glossaries/National\\_Glossaries/COMMIN\\_Swedish\\_Glossary.pdf](http://commin.org/upload/Glossaries/National_Glossaries/COMMIN_Swedish_Glossary.pdf)

Policy actor

Umeå Municipality

Policy strategy

Physical measures

Policy measures

Measures targeting or affecting consumption include:

- Planning should favor urban density, short transports, and pedestrian and bicycle traffic
- The traffic network should favor pedestrians and bicyclists. Pedestrian and bicycle paths should be well maintained and safe. Expansion of pedestrian and bicycle traffic network should follow principle of separation of recreational and commercial traffic.
- Housing, businesses, and service should primarily be located within area covered by main public transport lines
- Buses to be prioritized over cars within area covered by main public transport lines
- Facilitate sustainable multimodal transport including trains by offering functional infrastructure for pedestrians, bicyclists, bus travelers and car-sharing in connection to railway stations
- Continue work on Mobility Management. Identified possible activities:
  - Campaigns and measures to promote walking, bicycling, and use of public transport
  - Individual counsel on decreasing use of car
  - Car-pooling opportunities
- Develop Intelligent Transportations System (ITS) platform

Policy stage

Implemented

Anticipated effect on household consumption

Substitute consumption

Actual effect on greenhouse gas emissions

Mostly direct emissions

Documents

Detailed comprehensive plan for Umeå city center (2011):

[http://www.umea.se/download/18.1a5fea8a1437b3e6e528806/1390481539173/Fop\\_centrala\\_stadsdelarna\\_lagupplost.pdf](http://www.umea.se/download/18.1a5fea8a1437b3e6e528806/1390481539173/Fop_centrala_stadsdelarna_lagupplost.pdf)

*N°16. Parking strategy*

(Parking strategy as part of detailed comprehensive plan<sup>7</sup> for Umeå city center)

Policy area

1. Transportation
2. Diverse

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<sup>7</sup> Municipal comprehensive plans (required under the Planning and Building Act) outline guidelines for municipal planning and constitute the basis for development plans. Detailed comprehensive plans are used when there is a need for more detailed consideration of a limited part of the municipal's area. See e.g.

[http://commin.org/upload/Glossaries/National\\_Glossaries/COMMIN\\_Swedish\\_Glossary.pdf](http://commin.org/upload/Glossaries/National_Glossaries/COMMIN_Swedish_Glossary.pdf)

Policy level

Local-local

Policy sector

Umeå Municipality

Policy actor

Umeå Municipality

Policy strategy

Physical measures

Policy measures

Strategic aims targeting or affecting consumption include:

- Decrease number of journeys to and from work by car; locate employee parking outside of city center
- Facilitate multimodal transport (see *Transportation No. 17*)

Measures targeting or affecting consumption include:

- Differentiating parking fees to prioritize visitors and residents over commuters
- Gradually adjust parking fees to exceed cost of alternative modes of transport
- Green Parking Payoffs (see *Transportation No. 16*)
- Parking areas outside the city center should include bicycle parking facilities (see *Transportation No. 17*)
- Adjust parking standards (required number of parking spaces per building) in accordance with goal to prioritize pedestrian, bicycle, and public transport over cars
- Parking standards for bicycle parking

Policy stage

Implemented

Anticipated effect on household consumption

Substitute consumption

Actual effect on greenhouse gas emissions

Mostly direct emissions

Documents

Detailed comprehensive plan for Umeå city center (2011):

[http://www.umea.se/download/18.1a5fea8a1437b3e6e528806/1390481539173/Fop\\_centrala\\_stadsdelarna\\_lagupplost.pdf](http://www.umea.se/download/18.1a5fea8a1437b3e6e528806/1390481539173/Fop_centrala_stadsdelarna_lagupplost.pdf)

*N°17. Public transport strategy*

Policy area

1. Transportation
2. Public transportation

Policy level

Local-local

Policy sector

Umeå Municipality

Policy actor

Umeå Municipality; Ultra (local bus service operator)

Policy strategy

Physical measures; Information

Policy measures

Proposed measures include:

- Introduce GPS-based system providing real-time information about location of buses
- Measures to facilitate quicker boarding on buses, including ticket machines at bus stops and allowing boarding from all doors on buses
- Coordinate public transport timetables and ticketing systems to facilitate transfer between local buses, regional buses, and trains.

Policy stage

Proposed

Anticipated effect on household consumption

Substitute consumption

Actual effect on greenhouse gas emissions

Mostly direct emissions

Documents

Cannot find document. Referrals to the public transport strategy made in:

Detailed comprehensive plan (2011):

[http://www.umea.se/download/18.1a5fea8a1437b3e6e528806/1390481539173/Fop\\_centrala\\_stadsdelarna\\_lagupplost.pdf](http://www.umea.se/download/18.1a5fea8a1437b3e6e528806/1390481539173/Fop_centrala_stadsdelarna_lagupplost.pdf)

Air quality management plan Umeå (2015):

[http://www.umea.se/download/18.6e56e1f514f42fbe66749e3e/1444743793664/%C3%85tg%C3%A4rdsprogram+f%C3%B6r+luft\\_2015-10-13.pdf](http://www.umea.se/download/18.6e56e1f514f42fbe66749e3e/1444743793664/%C3%85tg%C3%A4rdsprogram+f%C3%B6r+luft_2015-10-13.pdf)

*N°18. Air Quality Demonstrator*Policy area

1. Transportation
2. Diverse

Policy level

Local-local

Policy sector

Umeå Municipality

Policy actor

Umeå Municipality Environment and Health Administration

Policy strategy

Information

Policy measures

Visualization/demonstration of air quality in Umeå in order to keep the public informed and stress responsibility of all residents to lower emissions.

Information about the air quality is continuously updated at the municipality's website, where the air quality can be observed at any given moment. All measurement data is available for the public, businesses and universities as open data.

An Air Quality Demonstrator placed in Umeå city center informs about current air quality. It also functions as an interactive screen, where people can play a video game that teaches them about how sustainable transportation can improve the air quality.

Policy stage

Implemented

Anticipated effect on household consumption

Substitute consumption

Actual effect on greenhouse gas emissions

Mostly direct emissions

Documents

<http://www.umea.se/umeakommun/byggaboochmiljo/bullerochluftkvalitet/luftenutomhus/luftmatningar.4.232bb3eb132b9e0c2ca800060604.html>

*N°19. Congestion tax (Stockholm and Gothenburg)*

Policy area

3. Transportation
4. Diverse

Policy level

Local-National

Policy sector

Ministry of Finance

Policy actor

Swedish Tax Agency; Swedish Transport Administration; Stockholm Municipality; Gothenburg Municipality

Policy strategy

Tax

Policy measures

Tax levied on most vehicles entering and exiting central Stockholm and Gothenburg.

Policy stage

Implemented (in Stockholm and Gothenburg)

Anticipated effect on household consumption

Reduce consumption

Actual effect on greenhouse gas emissions

Mostly direct emissions

Documents

Act (2004:629) on congestion tax: [http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/lag-2004629-om-trangselskatt\\_sfs-2004-629](http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/lag-2004629-om-trangselskatt_sfs-2004-629)

*N°20. Ring road Umeå*

Policy area

5. Transportation
6. Diverse

Policy level

Local-local

Policy sector

Umeå Municipality

Policy actor

Umeå Municipal Committee on Industry and Planning and Technical Committee; Swedish Transport Administration

Policy strategy

Physical measure

Policy measures

Construction of ring road, diverting European routes E4 and E12 from the city center.

When the ring road construction is completed, the former E4 and E12 roads in the city center will be converted to city streets. The municipality considers this to provide new opportunities to prioritize pedestrian, bike and public transportation traffic in the city center.

Policy stage

Partly implemented

Anticipated effect on household consumption

Reduce consumption

Actual effect on greenhouse gas emissions

Mostly direct emissions

Documents

Umeå Municipality website:

<http://www.umea.se/umeakommun/trafikochinfrastruktur/trafikochgator/gator/gatuarbeten/umeprojektete4e12.4.bbd1b101a585d7048000168124.html>

Swedish Transport Administration website: <http://www.trafikverket.se/umeprojektet>

Swedish Transport Administration information brochure:

[http://www.umea.se/download/18.6cb02deb13d3f84af7a1a62/1362758445364/Infoblad\\_Ume%C3%A5projektet\\_130118\\_WEBB.pdf](http://www.umea.se/download/18.6cb02deb13d3f84af7a1a62/1362758445364/Infoblad_Ume%C3%A5projektet_130118_WEBB.pdf)

*N°21. New bicycle bridge over the Umeå River*Policy area

7. Transportation
8. Biking

Policy level

Local-local

Policy sector

Umeå Municipality

Policy actor

Umeå Municipality Technical Committee

Policy strategy

Physical measure

Policy measures

Construction of new bicycle bridge over the Umeå River, connecting the bicycle traffic networks south and west of the river, improve accessibility for bicycle traffic, and thus offer alternatives to commuting by car.

Policy stage

Proposed

Anticipated effect on household consumption

Substitute consumption

Actual effect on greenhouse gas emissions

Mostly direct emissions

Documents

Umeå Municipality website:

<http://www.umea.se/umeakommun/trafikochinfrastruktur/trafikochgator/gator/gatuarbeten/lundabron.4.57b91f50142c25734345f91.html>

*N°22. Electric buses*Policy area

9. Transportation
10. Public transportation

Policy level

Local-local

Policy sector

Umeå Municipality

Policy actor

Umeå Municipal Companies; Ultra (local bus service operator)

Policy strategy

Physical measure

Policy measures

The municipality has purchased a number of electric buses to replace diesel buses in the city center public transportation system. It has also built two new charging stations. Electric buses now operate all airport bus traffic and two of the main bus routes, and account for around 20% of the bus fleet.

The municipality's ambition is to replace all diesel buses on major bus routes with electric buses by 2019. This would mean that electric buses operate 80% of the bus traffic within the city of Umeå. It would require the purchase of an additional 24 electric buses.

Policy stage

Implemented

Anticipated effect on household consumption

Substitute consumption

Actual effect on greenhouse gas emissions

Mostly direct emissions

Documents

Umeå Municipality website:

[http://www.umea.se/arkiv/pressmeddelanden/pressmeddelanden/umeakommunstorsatsarpa\\_elbussar.5.1a5fea8a1437b3e6e52134fb.html](http://www.umea.se/arkiv/pressmeddelanden/pressmeddelanden/umeakommunstorsatsarpa_elbussar.5.1a5fea8a1437b3e6e52134fb.html)

Ultra website: <http://www.tabussen.nu/ultra/bra-att-veta/hybridbussar/>

*N°23. The Fossil Free Sweden Initiative*

Policy area

1. Transportation
2. Diverse

Policy level

National

Policy sector

Ministry of the Environment and Energy

Policy actor

Ministry of the Environment and Energy; government-appointed national coordinator

Policy strategy

Planning; Inquiry; Information

Policy measures

Appointment of national coordinator to support the Government's work with the [Fossil Free Sweden initiative](#), which "brings together actors from the business sector, municipalities, regions and organisations from across the country". The coordinator is to make visible and promote these actors' work towards a fossil free Sweden, provide a platform for dialogue and cooperation between the actors and between the actors and the Government, and communicate the work of the actors nationally and internationally to inspire more actors to

contribute to emission reductions. Participating actors may choose to register their commitments in the [NAZCA database](#) (UNFCCC).

Policy stage

Partly implemented

Anticipated effect on household consumption

Actual effect on greenhouse gas emissions

Not able to assess

Documents

Committee Directive Dir. 2016:66:

<http://www.regeringen.se/contentassets/6958bb4359014725ac7caca09584ea6f/kommittedirektiv-initiativet-fossilfritt-sverige.pdf>

*N°24. Regional transport strategy*

Policy area

3. Transportation
4. Diverse

Policy level

Regional

Policy sector

Västerbotten County

Policy actor

Region Västerbotten<sup>8</sup>

Policy strategy

Physical measures

Policy measures

Investments in/co-financing of pedestrian and bicycle road networks and regional public transportation aiming to increase proportion of private travels done by foot, bike, or public transport rather than car.

Examples:

- Co-financing of the reconstruction and development of Umeå central train/bus station
- Co-financing of the reconstruction and development of Skellefteå central train/bus station
- Railroad maintenance in inland Västerbotten
- Development of bicycle paths between Umeå and surrounding peri-urban areas

Policy stage

Partly implemented

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<sup>8</sup> Co-operative body responsible for regional development issues and regional growth. Established by Västerbotten County Council and the county's 15 municipalities in 2008. See <http://regionvasterbotten.se/toppmeny/om-oss/in-english/>.

Anticipated effect on household consumption

Substitute consumption

Actual effect on greenhouse gas emissions

Not able to assess

Documents

Västerbotten County Transport Plan 2010-2021:

<https://drive.google.com/file/d/0B98FVpVozkhmU200b3pKck5nRlk/view>

Västerbotten County Transport Plan 2014-2025: <http://regionvasterbotten.se/wp-content/uploads/2014/10/L%C3%A4nstransportplan-2014-2025-h%C3%B6guppl%C3%B6st.pdf>

*N°25. Environmental zone city center*

Policy area

1. Transportation
2. Road transportation

Policy level

Local

Policy sector

Umeå Municipality

Policy actor

Umeå Municipality

Policy strategy

Regulation

Policy measures

Implement environmental zones for heavy trucks and buses, based on EU vehicle categorizations.

Policy stage

Implemented

Anticipated effect on household consumption

Reduce emissions

Actual effect on greenhouse gas emissions

Direct

Documents

Bestämmelser: Miljözoner i Sverige. Gäller tunga lastbilar och bussar.

<http://www.umea.se/download/18.616272f115a38e1541fe8d/1487083497430/Milj%C3%B6zoner%20i%20Sverige.pdf>

Umeå kommun: Miljözon, miljöbudskap och genomfartsbudskap är ytterligare insatser

<http://www.umea.se/umeakommun/byggaboochmiljo/bullerochluftkvalitet/luftenutomhus/miljozonmiljobudskapochgenomfartsforbud.4.616272f115a38e1541fe65.html>

*N°26. Idling regulations*Policy area

1. Transportation
2. Diverse

Policy level

Local

Policy sector

Umeå Municipality

Policy actor

Umeå Municipality

Policy strategy

Regulation

Policy measures

Idling for longer than 1 minute prohibited throughout Umeå municipality.

Policy stage

Implemented

Anticipated effect on household consumption

Reduce emissions

Actual effect on greenhouse gas emissions

Direct

Documents

Umeå kommun: Tomgångskörning

<http://www.umea.se/umeakommun/byggaboochmiljo/bullerochluftkvalitet/luftenutomhus/tomgangskorning.4.4b297d5c1558de07ab08633.html>

*N°27. Electric vehicle charging infrastructure*Policy area

1. Transportation
2. Private cars

Policy level

Local

Policy sector

Umeå Municipality

Policy actor

Umeå Municipality

Policy strategy

Physical

Policy measures

Several new electric vehicle charging stations built around Umeå.

Policy stage

Implemented

Anticipated effect on household consumption

Reduce emissions

Actual effect on greenhouse gas emissions

Direct

Documents

Umeå kommun: Utredning och utbyggnad av laddinfrastruktur för elfordon

<http://www.umea.se/umeakommun/byggaboochmiljo/bullerochluftkvalitet/luftenutomhus/utredningochutbyggnadavavladdinfrastrukturforelfordon.4.50066d59159c01236ea18ba3.html>

*N°28. Information on driving speed and environment*Policy area

1. Transportation
2. Private cars

Policy level

National

Policy sector

Ministry of Enterprise and Innovation

Policy actor

Swedish Transport Administration

Policy strategy

Information

Policy measures

Information material on driving speed and emissions/environmental concerns.

Policy stage

Implemented

Anticipated effect on household consumption

Efficiency

Actual effect on greenhouse gas emissions

Direct

## Documents

Trafikverket Informationsblad: Hastighet och miljö

[http://www.trafikverket.se/contentassets/262b460bf29f48c7917a9c80a0eccf92/infomaterial/informationsblad\\_hastighet\\_miljo.pdf](http://www.trafikverket.se/contentassets/262b460bf29f48c7917a9c80a0eccf92/infomaterial/informationsblad_hastighet_miljo.pdf)

## Other

*N°1. Textile waste management*

### Policy area

1. Other
2. Waste

### Policy level

National

### Policy sector

Environment and Energy

### Policy actor

Swedish Environmental Protection Agency

### Policy strategy

Regulation; Information

### Policy measures

Proposed policy measures include:

- Legislation to require separation of textile waste, either under municipal responsibility or through a new regulation of producer responsibility system for textile waste
- Inquiry to assess the removal of legal obstacles to public actors' contribution to increased reuse and recycling of textiles
- Information campaign aimed at consumers on the environmental and health impacts of textile consumption

The SEPA refers to the GHG emissions caused by textile production. The consumption of clothes and shoes accounts for 5% of Swedish citizens' consumption-related GHG emissions. The emission-related benefits of textile waste recycling vary between materials. For fossil-based materials such as polyester, avoiding incineration has considerable climate benefits.

### Policy stage

Proposed

### Anticipated effect on household consumption

Reduce consumption

### Actual effect on greenhouse gas emissions

Mostly indirect emissions (textile consumed in Sweden is mainly produced in other countries)

Documents

SEPA Report: <http://www.naturvardsverket.se/upload/miljoarbete-i-samhallet/miljoarbete-i-sverige/regeringsuppdrag/2016/redovisade/redovisning-regeringsuppdrag-hantering-textilier-2016-09-26.pdf>

SEPA website: <http://www.naturvardsverket.se/Miljoarbete-i-samhallet/Miljoarbete-i-Sverige/Regeringsuppdrag/Hantering-av-textilier/>

*N°2. Differentiated waste collection fees for household waste*Policy area

1. Other
2. Waste

Policy level

Local-local

Policy sector

Umeå Municipality

Policy actor

Umeå Municipality; Vakin (municipal water and waste company)

Policy strategy

Subsidies

Policy measures

Differentiated collection fees for household waste

- Basic fee to fund e.g. waste retrieval and processing facilities
- Fixed fee for compostable waste (currently SEK 245/year)
- Pay-by-weight fees for residual waste (currently SEK 1,35 – 2,05 depending on type of building and size of container)

Policy stage

Implemented

Anticipated effect on household consumption

Improve efficiency

Actual effect on greenhouse gas emissions

Mostly direct emissions

Documents

Umeå Municipality Waste Treatment Plan 2010-2020:

[http://www.umea.se/download/18.4b297d5c1558de07ab01089a/1468239887242/Avfallsplan+2020\\_2010-05-31.pdf](http://www.umea.se/download/18.4b297d5c1558de07ab01089a/1468239887242/Avfallsplan+2020_2010-05-31.pdf)

Information brochure on compost:

<http://www.umeva.se/download/18.bbd155013df57aabee35fa/1366102378031/Kompostera+och+din+lycka+%C3%A4r+jord.pdf>

Information pages on waste, Vakin website:

<http://www.umeva.se/avfallatervinning.4.24173df212e17ac04f080002471.html>

*N°3. Environmental focus in schools*Policy area

- 5. Other
- 6. Education

Policy level

National

Policy sector

Ministry of Finance

Policy actor

Ministry of Finance; Minister for Financial Markets and Consumer Affairs; Swedish Consumer Agency

Policy strategy

Information

Policy measures

Swedish Consumer Agency commissioned to facilitate teaching on the environmental impact of consumption, e.g. by ensuring that school materials and lesson plan suggestions are easily accessible.

Part of "Strategy for sustainable consumption", presented in the Government's budget bill for 2017.

Policy stage

Proposed

Anticipated effect on household consumption

Diverse

Actual effect on greenhouse gas emissions

Not able to assess

Documents

Strategy for sustainable consumption:

<http://www.regeringen.se/globalassets/regeringen/dokument/finansdepartementet/pdf/2016/strategi-for-hallbar-konsumtion/strategi-for-hallbar-konsumtion.pdf>

Budget Bill for 2017:

<http://www.regeringen.se/contentassets/e926a751d9eb4c978c4d892c659ebc8e/utgiftsomrade-18-samhallsplanering-bostadsforsorjning-och-byggande-samt-konsumentpolitik>

*N°4. Stimulate eco-smart behavior patterns*Policy area

- 7. Other
- 8. Diverse

Policy level

National

Policy sector

Ministry of Finance

Policy actor

Ministry of Finance; Minister for Financial Markets and Consumer Affairs; Swedish Consumer Agency

Policy strategy

Information

Policy measures

Swedish Consumer Agency to be tasked with a special assignment to actively promote more eco-smart consumption and lifestyles. The assignment would include various ways of 'nudging' consumers by encouraging and making it easier for them to choose the best alternatives from an environmental perspective. The work should be linked to the *Forum for environmentally smart consumption* and coordinated with the Agency's efforts to improve environmental information in its Hallå konsument (Hello consumer) information service.

Increased appropriations to the Swedish Consumer Agency (SEK 11 million for 2017, SEK 14 million for 2018, and SEK million annually from 2019) to facilitate this and related commissions.

Part of "Strategy for sustainable consumption", presented in the Government's budget bill for 2017.

Policy stage

Proposed

Anticipated effect on household consumption

Diverse

Actual effect on greenhouse gas emissions

Not able to assess

Documents

Strategy for sustainable consumption:

<http://www.regeringen.se/globalassets/regeringen/dokument/finansdepartementet/pdf/2016/strategi-for-hallbar-konsumtion/strategi-for-hallbar-konsumtion.pdf>

Budget Bill for 2017:

<http://www.regeringen.se/contentassets/e926a751d9eb4c978c4d892c659ebc8e/utgiftsomrade-18-samhallsplanering-bostadsforsorjning-och-byggande-samt-konsumentpolitik>

*N°5. Tax reduction to encourage repairs and recycling*

Policy area

9. Other

10. Waste

Policy level

National

Policy sector

Ministry of Finance

Policy actor

Ministry of Finance; Minister for Financial Markets and Consumer Affairs

Policy strategy

Tax

Policy measures

Reduction in the VAT rate from 25 per cent to 12 per cent for repairing bicycles, shoes, leather goods, clothing and household linen. Tax reduction for the repair and maintenance of white goods carried out in the home.

The Government is also working to ensure that, based on the EU Ecodesign Directive, sustainability requirements are introduced for more product groups and for providing information about opportunities for repairs

Part of "Strategy for sustainable consumption", presented in the Government's budget bill for 2017.

Policy stage

Proposed

Anticipated effect on household consumption

Reduce consumption

Actual effect on greenhouse gas emissions

Mostly indirect emissions (assuming that most products are manufactured outside of Sweden?)

Documents

Strategy for sustainable consumption:

<http://www.regeringen.se/globalassets/regeringen/dokument/finansdepartementet/pdf/2016/sstrategi-for-hallbar-konsumtion/strategi-for-hallbar-konsumtion.pdf>

Budget Bill for 2017:

<http://www.regeringen.se/contentassets/e926a751d9eb4c978c4d892c659ebc8e/utgiftsomrade-18-samhallsplanering-bostadsforsorjning-och-byggande-samt-konsumentpolitik>

*N°6. Tougher measures against false green claims*

Policy area

11. Other
12. Diverse

Policy level

EU

Policy sector

Ministry of Finance

Policy actor

Ministry of Finance; Minister for Financial Markets and Consumer Affairs; Swedish Consumer Agency

Policy strategy

Regulation by law

### Policy measures

Environmental claims are increasingly being used in marketing. Nevertheless, consumers can sometimes be misled regarding which environmental considerations companies have actually taken. The European Commission has produced special guidelines on making environmental claims in marketing. The Swedish Consumer Agency has commissioned a study on how environmental arguments are being used and on which markets. The study will form the basis of the Agency's supervision of the area. The Agency is also entitled to immediately stop companies engaging in unlawful marketing practices, such as false environmental claims.

Part of "Strategy for sustainable consumption", presented in the Government's budget bill for 2017.

### Policy stage

Proposed

### Anticipated effect on household consumption

Diverse

### Actual effect on greenhouse gas emissions

Not able to assess

### Documents

Strategy for sustainable consumption:

<http://www.regeringen.se/globalassets/regeringen/dokument/finansdepartementet/pdf/2016/sstrategi-for-hallbar-konsumtion/strategi-for-hallbar-konsumtion.pdf>

Budget Bill for 2017:

<http://www.regeringen.se/contentassets/e926a751d9eb4c978c4d892c659ebc8e/utgiftsomrade-18-samhallsplanering-bostadsforsorjning-och-byggande-samt-konsumentpolitik>

## *N°7. Businesses to report on sustainability efforts*

### Policy area

13. Other

14. Diverse

### Policy level

EU

### Policy sector

Ministry of Justice

### Policy actor

Ministry of Justice

### Policy strategy

Regulation by law

### Policy measures

The Government proposes regulations that require all bigger companies to report on sustainability efforts, including current and anticipated GHG emissions of business activities. The regulation is introduced as a means to facilitate consumers' ability to influence companies in a more sustainable direction through demand and engagement.

Policy stage

Proposed

Anticipated effect on household consumption

Diverse

Actual effect on greenhouse gas emissions

Not able to assess

Documents

Directive 2014/95/EU of the European Parliament and of the Council: <http://eur-lex.europa.eu/eli/dir/2014/95/oj>

Government Bill 2015/16:193: <https://data.riksdagen.se/fil/D719F903-297D-4B7A-A7B4-71C80C5B63A9>

*N°8. Producer responsibility for packaging waste*

Policy area

3. Other
4. Waste

Policy level

National

Policy sector

Ministry of the Environment and Energy

Policy actor

Producers of articles sold with packaging

Policy strategy

Regulation by law

Policy measures

Producers, importers and retailers of consumption articles sold with packaging are responsible for the packaging waste. Producers shall provide systems for collecting packaging waste.

Packaging waste and newspaper recycling is managed through a nationwide system funded by affiliated companies, see <http://www.ftiab.se/257.html>.

Policy stage

Implemented

Anticipated effect on household consumption

Improve efficiency

Actual effect on greenhouse gas emissions

Not able to assess

Documents

Ordinance (2014:1073) on producer responsibility for packaging:

[https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-20141073-om-producentansvar-for\\_sfs-2014-1073](https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-20141073-om-producentansvar-for_sfs-2014-1073)

*N°9. Producer responsibility for electronic waste*Policy area

- 5. Other
- 6. Waste

Policy level

EU

Policy sector

Ministry of the Environment and Energy

Policy actor

Producers of electronic equipment

Policy strategy

Regulation by law

Policy measures

Producers/importers of electronic equipment for household use are responsible for any resulting electronic waste. Producers are required to be affiliated to an authorized waste collection system; to provide information about products (including consumer labelling); and to design products in ways that promote recycling and reuse.

Policy stage

Implemented

Anticipated effect on household consumption

Improve efficiency

Actual effect on greenhouse gas emissions

Not able to assess

Documents

Ordinance (2014:1075) on producer responsibility for electronic waste:

[http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-20141075-om-producentansvar-for\\_sfs-2014-1075](http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-20141075-om-producentansvar-for_sfs-2014-1075)

Directive 2012/19/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 on waste electrical and electronic equipment (WEEE): <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32012L0019&from=EN>

SEPA website information: <http://www.naturvardsverket.se/producentansvar-elutrustning>

*N°10. Climate Ambassadors Västerbotten*Policy area

- 3. Other
- 4. Diverse

Policy level

Regional

Policy sector

Västerbotten County

Policy actor

Västerbotten County Administrative Board

Policy strategy

Information

Policy measures

Appointment of three regional "Climate Ambassadors" – regionally famous individuals who have in some way contributed to advancing climate issues. The Climate Ambassadors are expected to lead by example and work to increase knowledge of and attention to climate issues among county citizens.

Policy stage

Implemented

Anticipated effect on household consumption

Diverse

Actual effect on greenhouse gas emissions

Not able to assess

Documents

CAB Västerbotten "New Climate Ambassadors for Västerbotten county" (June 2016):  
<http://www.lansstyrelsen.se/Vasterbotten/Sv/nyheter/2016/Pages/nya-klimatambassadorer-for-vasterbottens-lan.aspx>

*N°11. Ecolabelling (EU Flower and Nordic Swan)*

Policy area

5. Other
6. Diverse

Policy level

EU

Policy sector

Ministry of Finance

Policy actor

Ecolabelling Sweden (non-profit state-owned company; part of Nordic Swan Ecolabel Organisation)

Policy strategy

Information

Policy measures

Voluntary environmental labelling system (EU Flower and Nordic Swan ecolabels).

Policy stage

Implemented

Anticipated effect on household consumption

Substitute consumption

Actual effect on greenhouse gas emissions

Not able to assess

Documents

Regulation (EC) No 66/2010 of the European Parliament and of the Council of 25 November 2009 on the EU Ecolabel: <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV:co0012>

Act (2013:849) on the EU Ecolabel: [http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/lag-2013849-om-eu-miljomarket\\_sfs-2013-849](http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/lag-2013849-om-eu-miljomarket_sfs-2013-849)

Ordinance (2013:850) on the EU Ecolabel: [http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-2013850-om-eu-miljomarket\\_sfs-2013-850](http://riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/forordning-2013850-om-eu-miljomarket_sfs-2013-850)

Ecolabelling Sweden: <http://www.svanen.se/en/About-us/About/>

Nordic Ecolabelling: <http://www.nordic-ecolabel.org/>

## Attachment 3: Identified policies in Germany

### Food

*N°1 Federal Programme for Sustainable Consumption 2016*

Policy area.

Food

Policy level.

National

Policy sector.

Food

Policy actor.

Federal Ministry of Food and Agriculture

Policy strategy.

Information campaign on sustainable food consumption and production

Policy measures.

Information campaigns.

Policy stage.

In implementation

Anticipated effect on household consumption.

Reducing GHG emissions by increasing rates of bio food produced and consumed.

Actual effect on greenhouse gas emissions.

Not assessed

Source

[http://www.bmel.de/DE/Landwirtschaft/Nachhaltige-Landnutzung/Klimawandel/\\_Texte/Nationales\\_Pogramm\\_Nachhaltiger\\_Konsum.html?nn=310028](http://www.bmel.de/DE/Landwirtschaft/Nachhaltige-Landnutzung/Klimawandel/_Texte/Nationales_Pogramm_Nachhaltiger_Konsum.html?nn=310028)

*N°2 Federal Programme for Ecological Agriculture and Other Forms of Sustainable Agriculture 2001 (BÖLN)*

Policy area.

Food

Policy level.

National, state

Policy sector.

Agriculture

Policy actor.

Federal Ministry of Food and Agriculture, state agencies for agriculture

Policy strategy.

Information, subsidy

Policy measures.

BÖLN identifies research needs and funds research programmes to support sustainable production, processing, and marketing of agricultural products. It also offers education information and programmes as well as promotional services for exhibitions with a current annual budget of 17 million Euros.

Policy stage.

Implementation

Anticipated effect on household consumption.

Reducing GHG emissions by increasing rates of bio food produced and consumed.

Actual effect on greenhouse gas emissions.

In 2015, around 6.5% of Germany's agricultural area was managed according to ecological standards.

Source

<https://www.bundesprogramm.de/>

*N°3 Organic Farming Website*

Policy area.

Food

Policy level.

National

Policy sector.

Agriculture

Policy actor.

Federal Ministry of Food and Agriculture

Policy strategy.

Information

Policy measures.

Ökolandbau is intended as an information platform for schools as well as consumers and farmers. It also is in charge of determining whether a product can receive organic farming labeling according to federal or EU regulations.

Policy stage.

Implemented

Anticipated effect on household consumption.

Increase the amount of organic food consumed should lead to lower GHG-emissions.

Actual effect on greenhouse gas emissions.

4,794 companies are currently using the organic farming certificate in Germany based on federal and/or EU-standards.

Source

<https://www.oekolandbau.de/>

*N°4 Subsidy Programme 'Environmental and Consumer Protection'*

Policy area.

Food

Policy level.

National

Policy sector.

Agriculture

Policy actor.

Rentenbank

Policy strategy.

Subsidy

Policy measures.

The Rentenbank provides subsidies to small and medium sized agricultural businesses to help them promote organic farming products with a range of up to 10 million Euros per year per business.

Policy stage.

Implemented

Anticipated effect on household consumption.

Increase the amount of organic food consumed should lead to lower GHG-emissions.

Actual effect on greenhouse gas emissions.

Organic food still only makes up 6.5% of Germany's market, so the impact is limited.

Source

<https://www.rentenbank.de/foerderangebote/agrar-ernaehrungswirtschaft/umwelt-u.-verbraucherschutz/>

## Housing

*N°1 Energy Saving Law 2013/2005/1976 (EnEG) and Energy Saving Ordinance 2013 (EnEV)*

Policy area.

Housing

Policy level.

National

Policy sector.

Buildings

Policy actor.

National

Policy strategy.

Regulatory

Policy measures.

Whenever a new building is constructed that will be heated or cooled, it has to be designed in a energy-saving way. Additionally, new heating/cooling systems have to fulfill the same requirement and they have to be used in an energy efficient manner. Older buildings are only required to use energy efficient heating/cooling systems if they renew/renovate. Buildings erected after 2020 have to be constructed as low-energy house. Furthermore, this law enables the federal government to decide on how the energy efficiency certificates are designed, what information they contain, and how they are monitored.

Policy stage.

Implemented

Anticipated effect on household consumption.

Reduced GHG-emissions due to higher energy efficiency standards for new and old buildings and heating/cooling systems

Actual effect on greenhouse gas emissions.

Slow progress due to many exceptions for older buildings.

Source

<https://www.gesetze-im-internet.de/eneg/index.html>

[https://www.gesetze-im-internet.de/enev\\_2007/BJNR151900007.html](https://www.gesetze-im-internet.de/enev_2007/BJNR151900007.html)

*N°2 Energy Taxation Act 2006/2015 (EnergieStG)*

Policy area.

Housing/Transportation

Policy level.

National

Policy sector.

Fossil fuels/heating

Policy actor.

Government, customs offices

Policy strategy.

Fiscal

Policy measures.

Create an incentive for consumers and enterprises to switch to fossil saving or renewable technologies in their heating systems/cars, basically everything that runs on fossil fuel at this point. Very detailed list of the amount in excise tax of per litre per type of fossil fuel.

Policy stage.

implemented

Anticipated effect on household consumption.

Reduced consumption of fossil fuels

Actual effect on greenhouse gas emissions.

General improvements in the fuel efficiency of newer motors, partly offset by the trend towards SUVs, but it does have an effect on heating/cooling in houses.

Source

<https://www.gesetze-im-internet.de/energiestg/BJNR153410006.html>

*N°3 Ordinance on small and medium furnaces 1974/2010 (3. BImSchV); Federal Immission Control Act 1974 (BImSchG)*

Policy area.

Housing

Policy level.

National/State

Policy sector.

Environmental policy

Policy actor.

States' Environmental Agency, Federal Environmental Agency

Policy strategy.

Regulatory

Policy measures.

The purpose is to protect the environment and people from harmful influences through particulates and to prevent particulates from occurring. Households are compelled to have chimney sweepers check their heating systems and adjust their system if it exceeds specific values for particulates.

Policy stage.

Implemented with deficiencies

Anticipated effect on household consumption.

Increasing use of better filters in chimneys.

Actual effect on greenhouse gas emissions.

Implementation deficiencies because of long transition periods

Source

[http://bundesrecht.juris.de/bimschv\\_1\\_2010/index.html](http://bundesrecht.juris.de/bimschv_1_2010/index.html)

<http://bundesrecht.juris.de/bundesrecht/bimschg/index.html>

*N°4 Renewable Energy Sources Act 2016/2014 (EEG)*

Policy area.

Housing

Policy level.

National

Policy sector.

Renewable energy/resources

Policy actor.

Bundesnetzagentur

Policy strategy.

Regulatory

Policy measures.

Increase the portion of energy that is created through the use of renewable resources up to 80% of national energy consumption by 2050 with intermediate goals of 40-45% by 2025 and 55-60% by 2035. Force energy suppliers to invest in renewable energies, and improve the distribution network. Private households receive a fixed payment of 11/12 cents per kilowatt hour they feed into the grid. This law is financed through the EEG reallocation charge that is mainly financed by private households who pay an extra 30(2014)-35(2016)-40%(2017) on their energy bill.

Policy stage.

Implementation phase

Anticipated effect on household consumption.

Improve % of renewable energy used in Germany to up to 80% by 2050.

Actual effect on greenhouse gas emissions.

Does decrease GHG-emissions by a substantial amount through an increase of energy from renewable sources provided to consumers. The share of renewable energy was 31.6% in 2015.

Source

[http://www.gesetze-im-internet.de/bundesrecht/eeg\\_2014/gesamt.pdf](http://www.gesetze-im-internet.de/bundesrecht/eeg_2014/gesamt.pdf)

*N°5 Renewable energy heat act 2008 (EEWärmeG)*

Policy area.

Housing

Policy level.

Regional

Policy sector.

Renewable resources

Policy actor.

State administrations,

Policy strategy.

Regulatory

Policy measures.

Increase amount of renewable energy used to create heat/cooling to 14% by 2020. When constructing new buildings, owners are forced by law to use renewable resources for heating, power supply, cooling. This is promoted through funding.

Policy stage.

Implemented, partially integrated into the EEG/REA of 2014

Anticipated effect on household consumption.

Reducing the consumption of fossil fuels for heating/cooling systems.

Actual effect on greenhouse gas emissions.

Marginally reduced GHG-emissions, due to lax regulation at the state level, improved later on in the EEG of 2014

Source

[http://www.gesetze-im-internet.de/bundesrecht/eew\\_rmeg/gesamt.pdf](http://www.gesetze-im-internet.de/bundesrecht/eew_rmeg/gesamt.pdf)

*N°6 Directive for funding of measures for the use of renewable energy sources in the heating market 2015 based on N°5 EEWärmeG 2008*

Policy area.

Housing

Policy level.

National

Policy sector.

Electricity

Policy actor.

Federal Office for Economic Affairs and Export Control, KfW

Policy strategy.

Subsidy

Policy measures.

Funding for new solar systems and heat pumps based on age or innovation, dependent on case.

Policy stage.

In implementation

Anticipated effect on household consumption.

More efficient energy consumption

Actual effect on greenhouse gas emissions.

Not yet clear, however, the recycling of heat pumps poses a major threat to the ozone layer.

Source

[http://www.bmwi.de/BMWi/Redaktion/PDF/P-R/richtlinien-zur-foerderung-von-ma\\_C3\\_9Fnahmen-zur-nutzung-erneuerbarer-energien-im-waermemarkt,property=pdf,bereich=bmwi2012,sprache=de,rwb=true.pdf](http://www.bmwi.de/BMWi/Redaktion/PDF/P-R/richtlinien-zur-foerderung-von-ma_C3_9Fnahmen-zur-nutzung-erneuerbarer-energien-im-waermemarkt,property=pdf,bereich=bmwi2012,sprache=de,rwb=true.pdf)

*N°7 Proof of Origin Ordinance 2011 (HkNV)*

Policy area.

Housing

Policy level.

National

Policy sector.

Renewable energy

Policy actor.

Public-private partnership

Policy strategy.

Regulatory

Policy measures.

Provide information on the origin of renewable energy supplied by energy providers. Labels based on different environmental standards.

Policy stage.

Implemented

Anticipated effect on household consumption.

Increase share of households who are willing to switch to renewable energies.

Actual effect on greenhouse gas emissions.

Not clear, since most newer contracts cannot be directly traced to this information system.

Source

<http://www.gesetze-im-internet.de/bundesrecht/hknv/gesamt.pdf>

*N°8 Energy-Efficient Refurbishment Programme 2016/ Energy-Efficient Construction Programme*

Policy area.

Housing

Policy level.

National

Policy sector.

Construction

Policy actor.

Kreditanstalt für Wiederaufbau (KfW)

Policy strategy.

Regulatory, subsidy

Policy measures.

Create climate neutral housing in Germany by 2050. Promotes refurbishment to meet efficiency standards with up to 30,000 Euros. Grants for integrated neighbourhood concepts and refurbishment managers programme and energy-efficient urban refurbishment.

Policy stage.

In implementation

Anticipated effect on household consumption.

Reducing GHG emissions through lower power usage/smarter power usage and increasingly own power production through renewable resources.

Actual effect on greenhouse gas emissions.

Depends on the area that you look into, since this is a frequently updated

Source

<https://www.gesetze-im-internet.de/eneg/BJNR018730976.html>

[https://www.kfw.de/inlandsfoerderung/Privatpersonen/Bestandsimmobilien/Finanzierungsangebote/Energieeffizient-Sanieren-Zuschuss-\(430\)/#1](https://www.kfw.de/inlandsfoerderung/Privatpersonen/Bestandsimmobilien/Finanzierungsangebote/Energieeffizient-Sanieren-Zuschuss-(430)/#1)

*N°9 Energy performance certificate 2013*

Policy area.

Housing

Policy level.

National, local

Policy sector.

Housing

Policy actor.

Deutsche Energie-Agentur GmbH (dena), surveillance local

Policy strategy.

Regulatory, information

Policy measures.

Potential tenants or buyers have to be presented with the energy performance certificate to allow them an estimate of the environmental impact/financial costs a house/apartment has

Policy stage.

Implemented

Anticipated effect on household consumption.

Reducing GHG emissions through CO<sub>2</sub>-efficient housing.

Actual effect on greenhouse gas emissions.

Not assessed

Source

[https://www.kfw.de/inlandsfoerderung/Privatpersonen/Bestandsimmobilien/Finanzierungsangebote/Energieeffizient-Sanieren-Zuschuss-\(430\)/#1](https://www.kfw.de/inlandsfoerderung/Privatpersonen/Bestandsimmobilien/Finanzierungsangebote/Energieeffizient-Sanieren-Zuschuss-(430)/#1)

*N°10 On-Site Energy Advice*

Policy area.

Housing

Policy level.

local

Policy sector.

Housing

Policy actor.

Kreditanstalt für Wiederaufbau (KfW), Bundesamt für Wirtschaft und Ausfuhrkontrolle (BAFA)

Policy strategy.

Information, subsidy

Policy measures.

Provide buyers/builders with information on energy efficiency through financial support for on-site energy advice from certified experts financed through BAFA (800 Euros for houses/semi-detacheds, 1,100 Euros for buildings with 3+ units) Additionally, energy efficient planning and construction oversight are financially supported through the KfW.

Policy stage.

Implemented

Anticipated effect on household consumption.

Reducing GHG emissions through CO<sub>2</sub>-efficient housing.

Actual effect on greenhouse gas emissions.

Potential benefits are limited by budgets of private owners since the cost of experts may still exceed their budgets despite substantial subsidies.

Source

<https://www.kfw.de/inlandsfoerderung/Privatpersonen/Bestandsimmobilien/Energetische-Sanierung/Der-Weg-zu-Ihrem-KfW-Effizienzhaus/Sachverst%C3%A4ndige-f%C3%BCr-Energieeffizienz/>

*N°11 Energy-Efficiency Advice Portal*

Policy area.

Housing

Policy level.

National

Policy sector.

Construction

Policy actor.

KfW, BAMA

Policy strategy.

Information

Policy measures.

Create climate neutral housing in Germany by 2050. Provides a list of experts for the Energy Efficiency Certificate audits and how an energy efficient house should be designed.

Policy stage.

In implementation

Anticipated effect on household consumption.

Reducing GHG emissions through lower power usage/smarter power usage and increasingly own power production through renewable resources.

Actual effect on greenhouse gas emissions.

Used frequently for new buildings, however, difficult to assess if the information leads to major improvements.

Source

<https://www.energie-effizienz-experten.de/die-energieeffizienz-experten-fuer-foerderprogramme-des-bundes/>

*N°12 Special "Energy and Climate Fund" Act 2014/2010 (EKFG)*

Policy area.

Housing

Policy level.

National

Policy sector.

Construction/energy supply

Policy actor.

KfW, BAMA

Policy strategy.

Subsidy

Policy measures.

Covers additional spending for energy efficiency, renewable energies, e-mobility and more.

Policy stage.

Implemented

Anticipated effect on household consumption.

Higher energy efficiency standards in buildings, better power supply network, and climate protection.

Actual effect on greenhouse gas emissions.

May have contributed to increasing use of renewable energy resources by private households.

Source

<https://www.gesetze-im-internet.de/ekfg/BJNR180700010.html>

*N°13 Energy Labelling Act 2016 (EnVKG)*

Policy area.

Housing

Policy level.

National, State

Policy sector.

Housing

Policy actor.

Deutsche Energie-Agentur GmbH (dena), surveillance on state level

Policy strategy.

Regulatory

Policy measures.

Even older heating systems have to be equipped with energy efficiency labels after 2016 in an iterative process starting with systems from 1986 onwards.

Policy stage.

In implementation

Anticipated effect on household consumption.

Reducing GHG emissions through CO<sub>2</sub>-efficient heating systems.

Actual effect on greenhouse gas emissions.

Too new to have an effect

Source

[https://www.gesetze-im-internet.de/envkg\\_2012/BJNR107010012.html](https://www.gesetze-im-internet.de/envkg_2012/BJNR107010012.html)

*N°14 Directive to Fund Heating Systems Optimisation 2016*

Policy area.

Housing

Policy level.

National

Policy sector.

Construction

Policy actor.

Kreditanstalt für Wiederaufbau (KfW)

Policy strategy.

Subsidy

Policy measures.

Increase the number of highly efficient energy pumps can lead to 70-80% energy savings for heating systems. The subsidy is capped at 25,000 Euros.

Policy stage.

In implementation

Anticipated effect on household consumption.

Reducing GHG emissions through lower power usage in heating systems.

Actual effect on greenhouse gas emissions.Source

[https://www.bundesanzeiger.de/ebanzwww/wexsservlet?page.navid=to\\_bookmark\\_official&bookmark\\_id=pBVitkBug5Q1Ju56jXR](https://www.bundesanzeiger.de/ebanzwww/wexsservlet?page.navid=to_bookmark_official&bookmark_id=pBVitkBug5Q1Ju56jXR)

*N°15 Energy-Efficient Refurbishment Programme*

Policy area.

Housing

Policy level.

National

Policy sector.

Construction

Policy actor.

Kreditanstalt für Wiederaufbau (KfW)

Policy strategy.

Subsidy

Policy measures.

Provides grants of up to 30,000 Euros to home owners who invest in refurbishing their house in an energy efficient way or buy energy efficient housing. Is capped at 30% of the costs. Depends on the classification under the KfW-Energy-Efficient House label.

Policy stage.

Implemented

Anticipated effect on household consumption.

Reducing GHG emissions through lower power usage/smarter power usage.

Actual effect on greenhouse gas emissions.

Encourages house/apartment owners to invest in climate friendly measures if they buy/refurbish objects, thus leading to lower GHG-emissions.

Source

[https://www.kfw.de/inlandsfoerderung/Privatpersonen/Bestandsimmobilien/Finanzierungsangebote/Energieeffizient-Sanieren-Zuschuss-\(430\)/#1](https://www.kfw.de/inlandsfoerderung/Privatpersonen/Bestandsimmobilien/Finanzierungsangebote/Energieeffizient-Sanieren-Zuschuss-(430)/#1)

*N°16 Energy-Efficient Refurbishment and Construction Credit Programme Baden-Wuerttemberg*

Policy area.

Housing

Policy level.

Regional

Policy sector.

Construction

Policy actor.

Landesbank Baden-Württemberg (L-BW), Kreditanstalt für Wiederaufbau (KfW)

Policy strategy.

Subsidy

Policy measures.

Provides cheap credits to households refurbishing their apartment/house with special conditions.

Policy stage.

Implemented

Anticipated effect on household consumption.

Reducing GHG emissions through lower power usage/smarter power usage.

Actual effect on greenhouse gas emissions.

Encourages house/apartment owners to invest in climate friendly measures if they buy/refurbish objects, thus leading to lower GHG-emissions.

Source

<https://www.l-bank.de/lbank/inhalt/nav/foerderungen-und-finanzierungen/energieeffizienz-und-umweltschutz/privatpersonen.xml?ceid=125080&uebersicht2=true>

*N°17 Credit to Fund Heating Systems Optimisation Baden-Wuerttemberg*

Policy area.

Housing

Policy level.

Regional

Policy sector.

Heating

Policy actor.

Landesbank-Baden-Württemberg (L-BW), Kreditanstalt für Wiederaufbau (KfW)

Policy strategy.

Credit

Policy measures.

Preferential credit conditions for investing in heating systems that use at least 15% renewable energy. Capped at 50,000 Euros and up to a 30 year period.

Policy stage.

Implemented

Anticipated effect on household consumption.

Reducing GHG emissions through lower power usage in heating systems.

Actual effect on greenhouse gas emissions.

Does encourage the use of newer heating systems in combination with renewable resources.

Source

<https://www.l-bank.de/lbank/inhalt/nav/foerderungen-und-finanzierungen/alle-foerderangebote/wf-wirtschaftsfoerderung/wohnen-mit-zukunft-erneuerbare-energien.xml?ceid=101170>

*N°4. Ban on incandescent lightbulbs.*

Policy area.

Housing

Policy level.

national

Policy sector.

Regulation

Policy actor.

Government

Policy strategy.

Slowly curb sales and later on prohibit them of incandescent lightbulbs in the European Union member countries

Policy measures.

A ban on incandescent light bulbs has been implemented. The provisions apply more broadly to appliances in order to limit consumption caused by standby mode.

Policy stage.

Implemented

Anticipated effect on household consumption.

Better energy and greenhouse gases emissions efficiency of the consumption process

Actual effect on greenhouse gas emissions.Source:

<http://eur-lex.europa.eu/legal-content/DE/ALL/?uri=CELEX:32009R0244>

*N°19 Old-Building Refurbishment Portal Baden-Wurtemberg*

Policy area.

Housing

Policy level.

Regional

Policy sector.

Construction

Policy actor

Klimaschutz- und Energieagentur Baden-Württemberg GmbH (KEA)

Policy strategy

Information

Policy measures.

Offers advice on how to refurbish old houses in a climate friendly manner. Detailed information on cladding, facility engineering, renewable energies, and a calculator to get an estimate of the economic costs and benefits. This programme is especially important since large parts of Baden-Wurtembergs older city centres are under heritage conservation.

Policy stage.

Implemented

Anticipated effect on household consumption.

Reducing GHG emissions through lower power usage/smarter power usage.

Actual effect on greenhouse gas emissions.

Depends heavily on the speed of renovation because most refurbishments are very costly and require large investments from owners.

Source

<http://www.zukunftaltbau.de/home/index.php>

*N°20 Climate Friendly Housing Information Portal*

Policy area.

Housing

Policy level.

National

Policy sector.

Housing

Policy actor.

Deutsche Energie-Agentur (DENA), Die Allianz für Gebäude-Energie-Effizienz (geea)

Policy strategy.

Information

Policy measures.

Simply a summary of all funding programmes already mentioned here on one website. Also summarises most information in one portal.

Policy stage.

Implemented

Anticipated effect on household consumption.

Reducing GHG emissions through CO<sub>2</sub>-efficient housing.

Actual effect on greenhouse gas emissions.

Same as with all information measures on housing in Germany

Source

<http://www.die-hauswende.de/>

*N°21 Energy-Efficient Refurbishment Programme Mannheim*

Policy area.

Housing

Policy level.

Local

Policy sector.

Construction

Policy actor.

City of Mannheim, Klimaschutzagentur

Policy strategy.

Subsidy

Policy measures.

Grants up to 7,000 Euros for KfW-Energy-efficiency buildings and up to 6.400 Euros for climate friendly renovation. The programme is tied to mandatory energy consulting service and capped at 50% of costs for measures.

Policy stage.

Implemented

Anticipated effect on household consumption.

Reducing GHG emissions through lower power usage/smarter power usage.

Actual effect on greenhouse gas emissions.

Encourages house/apartment owners to invest in climate friendly measures if they buy/refurbish objects, thus leading to lower GHG-emissions.

Source

<http://www.klima-ma.de/eigentuemer-mieter/foerderprogramme.html>

*N°22 Funding for Hydraulic-Heating Systems Mannheim*

Policy area.

Housing

Policy level.

Local

Policy sector.

Construction

Policy actor.

City of Mannheim, Klimaschutzagentur

Policy strategy.

Subsidy

Policy measures.

Very small subsidy to help owners improve their heating systems.

Policy stage.

Implemented

Anticipated effect on household consumption.

Lower GHG-emissions through lower power usage.

Actual effect on greenhouse gas emissions.

Encourages house/apartment owners to invest in climate friendly heating systems.

Source

<http://www.klima-ma.de/eigentuemer-mieter/foerderprogramme.html>

*N°23 CHP-Funding Programme Mannheim*Policy area.

Housing

Policy level.

Local

Policy sector.

Construction

Policy actor.

City of Mannheim, Klimaschutzagentur

Policy strategy.

Subsidy

Policy measures.

Combined heat and power systems are subsidised with an amount between 4,500 Euros and 10,000 Euros depending on the electric capacity and full utilisation time.

Policy stage.

Implemented

Anticipated effect on household consumption.

Lower GHG-emissions through combination of heating and power generation.

Actual effect on greenhouse gas emissions.

Encourages house/apartment owners to invest in CHP-systems that are considered very climate friendly.

Source

<http://www.klima-ma.de/eigentuemmer-mieter/foerderprogramme.html>

*N°24 Climate Protection and Energy Agency Baden-Wuerttemberg*Policy area.

Housing

Policy level.

Regional

Policy sector.

Construction

Policy actor

Klimaschutz- und Energieagentur Baden-Württemberg GmbH (KEA)

Policy strategy

Information

Policy measures.

Offers expert advice to owners on low-energy housing, energy saving check for low-income households, personal CO<sub>2</sub>-balance sheets.

Policy stage.

Implemented

Anticipated effect on household consumption.

Reducing GHG emissions through lower power usage/smarter power usage.

Actual effect on greenhouse gas emissions.

Used frequently for new buildings, however, difficult to assess if the information leads to major improvements.

Source

<http://www.kea-bw.de/unser-angebot/angebot-fuer-privatpersonen/>

*N°25 Power Grid Expansion Act 2009 (EnLAG)*

Policy area.

Housing

Policy level.

National

Policy sector.

Construction

Policy actor

Bundesnetzagentur

Policy strategy

Infrastructure

Policy measures.

Is intended to accelerate the expansion of the power grid in Germany in order to transport energy from renewable sources to places in the country where supply of renewables is low.

Policy stage.

Ongoing

Anticipated effect on household consumption.

Reducing GHG emissions through renewable energy sources.

Actual effect on greenhouse gas emissions.

Depends on the speed of power grid expansion and the supply of renewables

Source

<https://www.gesetze-im-internet.de/enlag/BJNR287010009.html>

## Transportation

*N°1 Ordinance on the quality and labeling of fuels and combustibles 1993/2010 (10. BImSchV); Federal Immission Control Act 1974 (BImSchG)*

Policy area.

Transportation/Housing

Policy level.

National

Policy sector.

fuels

Policy actor.

State Environmental Agencies

Policy strategy.

Regulatory

Policy measures.

Information provided by petrol stations and car manufacturers to consumers as well as controlled through State Environmental Agencies. Labels on petrol pumps and car manufacturers are controlled through testing

Policy stage.

Implemented

Anticipated effect on household consumption.

Reduction of GHG-emissions of cars with combustion motors and heating systems using fuels.

Actual effect on greenhouse gas emissions.

Reduction of GHG-emissions, partly offset by more cars on the streets and the fact that we recently saw that car manufacturers can circumvent it by illegal means.

Source

[http://www.gesetze-im-internet.de/bimschv\\_10\\_2010/index.html](http://www.gesetze-im-internet.de/bimschv_10_2010/index.html)

<http://bundesrecht.juris.de/bundesrecht/bimschg/index.html>

*N°2 Bio fuel quota act 2007*

Policy area.

Mobility

Policy level.

National

Policy sector.

Fossil fuels

Policy actor.

Bundeskraftfahrtamt

Policy strategy.

Increasing use of bio fuels in combustion engines

Policy measures.

Information campaigns and testing of new appliances through the BAM.

Policy stage.

Implemented

Anticipated effect on household consumption.

Reduce GHG-emissions through lower emissions during the production process of fuels.

Actual effect on greenhouse gas emissions.

Depends on the percentage added to petrol, since E10 is not very popular in Germany.

Source

<http://www.gesetze-im-internet.de/ebpg/index.html>

*N°3 Motor vehicle taxation act 1927/2015 (kraftstg)*

Policy area.

Mobility

Policy level.

National

Policy sector.

Motor vehicles

Policy actor.

Bundeskraftfahranstalt

Policy strategy.

Regulatory

Policy measures.

Create incentives to drive smaller or electric vehicles to lower tax burden on user. Tax exemptions for electric vehicles, higher taxes based on fuel used.

Policy stage.

Implemented

Anticipated effect on household consumption.

Providing an incentive for climate friendly driving, purchase of smaller cars with lower tax burdens, more electric vehicles on the streets.

Actual effect on greenhouse gas emissions.

Little progress because of Germany's auto manufacturing structure as well as a trend towards larger SUVs overall.

Source

<https://www.gesetze-im-internet.de/kraftstg/BJNR005090927.html>

*N°4 Air transportation tax 2011*Policy area.

Mobility

Policy level.

National

Policy sector.

Aviation

Policy actor.

German Federal Ministry of Finance

Policy strategy.

Fiscal

Policy measures.

Increase taxation on aviation for fiscal purposes. Higher taxes per passenger or per kilo transported.

Policy stage.

Implemented

Anticipated effect on household consumption.

No direct effect anticipated.

Actual effect on greenhouse gas emissions.

Not assessed

Source

[http://www.bundesfinanzministerium.de/Content/DE/Monatsberichte/2011/04/Artikel/analysen-und-berichte/b04-Luftverkehrsteuer/Luftverkehrsteuer.html?\\_act=renderPdf&\\_iDocId=216914](http://www.bundesfinanzministerium.de/Content/DE/Monatsberichte/2011/04/Artikel/analysen-und-berichte/b04-Luftverkehrsteuer/Luftverkehrsteuer.html?_act=renderPdf&_iDocId=216914)

*N°5 E-Mobility Act 2016 (EmoG)*Policy area.

Mobility

Policy level.

National

Policy sector.

Transportation

Policy actor.

German Federal Ministry of Finance, BAMA

Policy strategy.

Subsidy

Policy measures.

E-vehicles and hybrid purchases are subsidised with up to 4,000 Euroes depending on the type. Number of subsidised vehicles capped at 300,000 at the moment.

Policy stage.

In implementation

Anticipated effect on household consumption.

Substantially increase the number of e-vehicles in Germany may reduce GHG-emissions if the energy used by them comes from renewable sources.

Actual effect on greenhouse gas emissions.

Too early to be judged, was passed in June

Source

<https://www.gesetze-im-internet.de/emog/BJNR089800015.html>

*N°6 Federal Bicycle-Traffic Plan 2016*

Policy area.

Mobility

Policy level.

National

Policy sector.

Transportation

Policy actor.

Federal Ministry of Transport and Digital Infrastructure

Policy strategy.

Information, subsidy

Policy measures.

Improve Germany's infrastructure for bicycles and inform consumers about pilot projects. It also includes advice for communes on how much they should spend on bicycle roads per capita (up to 15 Euros).

Policy stage.

Implemented

Anticipated effect on household consumption.

Advocate mobility with bicycles and improve the infrastructure in place for it.

Actual effect on greenhouse gas emissions.

Very recent, so hard to judge

Source

<https://nationaler-radverkehrsplan.de/en>

*N°7 Information Portal on Sustainable Transportation*Policy area.

Mobility

Policy level.

National

Policy sector.

Transportation

Policy actor.

Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety

Policy strategy.

Information

Policy measures.

Provides consumers and local authorities with information on funding opportunities, pilot projects, and general advice on how to change their way of getting from A to B. Also runs a Twitter campaign under #MOBILWANDEL

Policy stage.

In implementation

Anticipated effect on household consumption.

Reduce GHG-emissions due to transportation and traffic jams inside and outside cities.

Actual effect on greenhouse gas emissions.

Started recently, other campaigns more impactful.

Source

<http://www.mobil-wandel.de/>

*N°8 Federal Contest on Climate Protection through Bicycling*Policy area.

Mobility

Policy level.

National

Policy sector.

Transportation

Policy actor.

Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety,  
Projektträger Jülich

Policy strategy.

Subsidy

Policy measures.

Provides funding for pilot projects on how to improve bicycle mobility in Germany. Funding starts at 200,000 Euros for private initiatives and is capped at 200,000 Euros for companies.

Policy stage.

In implementation

Anticipated effect on household consumption.

Reduce GHG-emissions due to transportation and traffic jams inside and outside cities.

Actual effect on greenhouse gas emissions.

Not assessed

Source

<https://www.ptj.de/klimaschutzinitiative/radverkehr>

*N°9 Funding for E-Busses and Hybrid-Busses*

Policy area.

Mobility

Policy level.

National

Policy sector.

Transportation

Policy actor.

Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety

Policy strategy.

Subsidy

Policy measures.

Communities are encouraged to purchase hybrid busses or e-busses for public transportation, thus indirectly leading to more sustainable and clean cities.

Policy stage.

In implementation

Anticipated effect on household consumption.

Substantially increase the number of e-mobility in public transportation in communities.

Actual effect on greenhouse gas emissions.

Has been running for some time, however renewal of public transport flotillas is slow due to budget constraints.

Source

<http://erneuerbar-mobil.de/foerderprogramme/foerderprogramm-fuer-hybridbusse-aus-der-bmub-klimaschutzinitiative>

<http://www.klimaschutz.de/de/programm/foerderprogramm-fuer-hybridbusse>

*N°10 Working Group of Bicycle-Friendly Communities in Baden-Wurttemberg*Policy area.

Mobility

Policy level.

State

Policy sector.

Transportation

Policy actor.

50 cities in Baden-Wurttemberg (agfk)

Policy strategy.

Information

Policy measures.

Provides information material and education programmes for cities and educators. It also funds a few pilot projects and helps communities with the planning, implementation, and communication of new bicycle programmes.

Policy stage.

Implemented

Anticipated effect on household consumption.

Advocate mobility with bicycles and improve the infrastructure for it. Reduce GHG-emissions through more mobility without motorised vehicles.

Actual effect on greenhouse gas emissions.

Probably has a larger impact than national information campaigns

Source

<https://www.agfk-bw.de/startseite/>

*N°11 State Funding for the Improvement of Transportation in Communities 2010*Policy area.

Mobility

Policy level.

State

Policy sector.

Transportation

Policy actor.

State Ministry Baden-Wurttemberg

Policy strategy.

Subsidy

Policy measures.

Provides funding of up to 50 million Euros for projects that are intended to improve mobility in general in communities. It covers up to 50% of the costs of such projects.

Policy stage.

In implementation

Anticipated effect on household consumption.

Since this programme can be used for very different projects, encompassing everything from street construction in residential areas to funding for new railway tracks, this is difficult to judge.

Actual effect on greenhouse gas emissions.

Because of the size of funding provided, this can have a substantial positive impact on public transportation in communities.

Source

<http://www.landesrecht-bw.de/jportal/?quelle=jlink&query=GVFG+BW&psml=bsbawueprod.psml&max=true&aiz=true>

*N°12 Federal Funding for the Improvement of Transportation in Communities Act 2010 (GFVG)*

Policy area.

Mobility

Policy level.

National

Policy sector.

Transportation

Policy actor.

Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety

Policy strategy.

Subsidy

Policy measures.

Provides funding for all kinds of programmes starting at 50 million. Since this is designed in the same manner as N°11, it's benefits may be questionable.

Policy stage.

In implementation

Anticipated effect on household consumption.

Since this programme can be used for very different projects, encompassing everything from street construction in residential areas to funding for new railway tracks, this is difficult to judge.

Actual effect on greenhouse gas emissions.

Because of the size of funding provided, this can have a substantial positive impact on public transportation in communities.

Source

<http://www.gesetze-im-internet.de/gvfg/BJNR002390971.html>

*N°13 Funding for Citizen Busses*

Policy area.

Mobility

Policy level.

State

Policy sector.

Transportation

Policy actor.

State Ministry Baden-Wurttemberg, Nahverkehrsgesellschaft Baden-Württemberg (NVBW)

Policy strategy.

Subsidy, information

Policy measures.

Provides funding for so called Citizen Busses. These are busses purchased by private associations to fill holes in the public transportation system. The programme offers up to 100,000 Euros a year. Only vehicles that satisfy the newest environmental standards are supported.

Policy stage.

Implemented

Anticipated effect on household consumption.

Limited but positive effect on GHG-emissions especially through economisation of transportation of the elderly.

Actual effect on greenhouse gas emissions.

These programmes are fairly effective to reduce GHG-emissions, especially from cabs. Most of the customers using these busses are older people who would usually call a cab to do their groceries.

Source

<http://www.buergerbus-bw.de/>

*N°14 Bicycle Strategy Baden-Wurttemberg 2016*

Policy area.

Mobility

Policy level.

State

Policy sector.

Transportation

Policy actor.

Ministry for Transport Baden-Wurttemberg

Policy strategy.

Information, subsidy

Policy measures.

Includes information and education campaigns, culture tours, a website to plan bicycle tours throughout Baden-Wurttemberg. The programme also entails special funding for new bicycle networks connecting communities.

Policy stage.

Implemented

Anticipated effect on household consumption.

Advocate mobility with bicycles and improve the infrastructure in place for it.

Actual effect on greenhouse gas emissions.

Information material is always difficult to judge

Source

<http://www.fahrradland-bw.de/startseite/>

<https://www.radkultur-bw.de/>

*N°15 Get rid of Your Car Mannheim*

Policy area.

Mobility

Policy level.

Local

Policy sector.

Transportation

Policy actor.

Klimaschutzagentur Mannheim, Klimaschutzleitstelle Mannheim

Policy strategy.

Information, subsidy

Policy measures.

Encourages households to replace their car with public transport or bicycling. Includes an information campaign and will fund pilot projects. This means that the costs for around 10 households to leave their car at home will be covered by the city of Mannheim.

Policy stage.

In implementation

Anticipated effect on household consumption.

The promotion of public transport and non-motorised mobility will lead to lower GHG-emissions.

Actual effect on greenhouse gas emissions.

Still being implemented, so hard to say.

Source

<http://www.klima-ma.de/projekte/spardirdeinauto.html>

*N°16 Environmental Badge for Cars*

Policy area.

Mobility

Policy level.

Local

Policy sector.

Transportation

Policy actor.

DEKRA

Policy strategy.

Standards

Policy measures.

Cars with high emission factors are theoretically no longer allowed into urban centres with high incidents of particulate matter alarms.

Policy stage.

Implemented

Anticipated effect on household consumption.

Uptake of more environmental friendly combustion engines or electric cars.

Actual effect on greenhouse gas emissions.

Still being implemented, so hard to say.

Source

<https://www.umwelt-plakette.de/>

*N°17 Monnem-Bike*

Policy area.

Mobility

Policy level.

local

Policy sector.

Transportation

Policy actor.

City of Mannheim

Policy strategy.

Information

Policy measures.

Includes information and education campaigns, culture tours, and a festival celebrating the 200<sup>th</sup> anniversary of the bicycle invention.

Policy stage.

Implemented

Anticipated effect on household consumption.

Advocate mobility with bicycles and improve the infrastructure in place for it.

Actual effect on greenhouse gas emissions.

Information material is always difficult to judge

Source

<http://monnem-bike.de>

**Other**

*N°1 Packaging Ordinance 1998*

Policy area.

Other

Policy level.

National/implementation local

Policy sector.

Waste management

Policy actor.

States

Policy strategy.

Regulatory

Policy measures.

Preventing excessive packaging and reusing packaging where possible while prioritising recycling over burning of trash. Created an extensive recycling network for all sorts of packaging/wrapping based on local needs and in co-operation with the private sector.

Policy stage.

Implemented

Anticipated effect on household consumption.

Reduces household waste in total and reduces the percentage of waste that is simply burned on landfills.

Actual effect on greenhouse gas emissions.

Lead to a reduction in overall waste an increasing recycling activity.

Source

[http://www.gesetze-im-internet.de/bundesrecht/verpackv\\_1998/gesamt.pdf](http://www.gesetze-im-internet.de/bundesrecht/verpackv_1998/gesamt.pdf)

*N°2 Energy-Using Products Act 2008/2015 (EVPG)*

Policy area.

Other

Policy level.

National

Policy sector.

electric appliances

Policy actor.

Bundesanstalt für Materialforschung und -prüfung (BAM)

Policy strategy.

Regulatory, information

Policy measures.

Labeling for energy-using products . Information campaigns and testing of new appliances through the BAM.

Policy stage.

In implementation

Anticipated effect on household consumption.

Reducing GHG emissions through lower power usage.

Actual effect on greenhouse gas emissions.

Slow progress because replacing larger appliances with higher energy usage depends on attrition.

Source

<http://www.gesetze-im-internet.de/ebpg/index.html>

*N°3 Energy Consumption Labeling Act 2015/2012 (EnVKG)*

Policy area.

Other

Policy level.

National/EU

Policy sector.

electric appliances

Policy actor.

Bundesanstalt für Materialforschung und -prüfung (BAM)

Policy strategy.

Regulatory

Policy measures.

Labeling for energy-using products based on energy consumption. Advertisement that uses energy as a selling-point has to provide information on energy efficiency at the same time. Information campaigns and testing of new appliances through the BAM or other similar institutions in other EU-member states.

Policy stage.

Implemented

Anticipated effect on household consumption.

Reducing GHG emissions through lower power usage.

Actual effect on greenhouse gas emissions.

Because of the label's design, initial progress was very slow, picking up in Germany at the moment.

Source

[https://www.gesetze-im-internet.de/envkg\\_2012/BJNR107010012.html](https://www.gesetze-im-internet.de/envkg_2012/BJNR107010012.html)

*N°4 Circular Economy Act 1996/2012 (KrWG)*

Policy area.

Other

Policy level.

State/local

Policy sector.

Waste management

Policy actor.

Municipalities/counties

Policy strategy

Regulatory

Policy measures.

requires recycling to be given priority over energy recovery; at least 65 % of all municipal waste is to be recycled by 2020. Improves upon existing recycling networks to protect the environment.

Policy stage.

Implemented

Anticipated effect on household consumption.

Reduces household waste in total and reduces the percentage of waste that is simply burned on landfills.

Actual effect on greenhouse gas emissions.

May have no effect because many households feel overregulated at this point.

Source

<https://www.gesetze-im-internet.de/bundesrecht/krwg/gesamt.pdf>

*N°5 Landfill Ordinance 2009*Policy area.

Other

Policy level.

local

Policy sector.

Waste management

Policy actor.

Municipalities/counties

Policy strategy

Regulation

Policy measures.

Specifies environmentally friendly ways of storing waste, including to avoid excessive levels of methane. Specifies technical details of landfill management for municipalities.

Policy stage.

Implemented

Anticipated effect on household consumption.

Only affects households with large properties and lots of organic waste .

Actual effect on greenhouse gas emissions.

Municipal facilities in Germany usually have to upgrade to the most recent environmental standards, thus this should have a positive impact.

Source

<https://www.gesetze-im-internet.de/bundesrecht/krwg/gesamt.pdf>

*N°6 Research for Sustainable Development (FONA)*Policy area.

Other

Policy level.

Federal

Policy sector.

Research

Policy actor.

Ministry for Education and Research

Policy strategy

Information, subsidy

Policy measures.

FONA is part of Germany's Federal Sustainability Strategy. It provides funding for research projects in Germany and outside of Germany. It also helps disseminate research results to educators, researchers, ministries, and agencies. FONA has several research projects dedicated to urban planning and sustainable cities that can impact how people live and consume in their everyday lives.

Policy stage.

Implemented

Anticipated effect on household consumption.

Positive impact on private mitigation efforts if new technologies are affordable.

Actual effect on greenhouse gas emissions.

High entry barriers of cutting-edge technologies limit the impact of the most recent research. It still has a positive impact on mitigation efforts.

Source

<http://www.fona.de/de/forschung-fuer-nachhaltige-entwicklung-fona-17833.html>

*N°7 Specialised Agency for Sustainable Resources (FNR)*

Policy area.

Other

Policy level.

Federal

Policy sector.

Resources

Policy actor.

Ministry for Food and Agriculture, FNR

Policy strategy

Information, subsidy

Policy measures.

FNR provides information and funding for projects investing in renewable resources in forestry, agriculture, chemicals, recycling, GHG-emission-reduction, integrating bio-energy into energy systems, conversion procedures, biomass and more. It also provides extensive information to households on renewable resources that can serve as substitutes for traditional non-renewable resources. Comprehensive list of materials from the construction of new buildings to the detergents used to wash clothes. It also puts a special focus on forests and agriculture as CO<sub>2</sub>-sinks in its information dissemination.

Policy stage.

Implemented

Anticipated effect on household consumption.

Positive impact on private mitigation efforts if new technologies are affordable for households or used by companies.

Actual effect on greenhouse gas emissions.

High entry barriers for new technologies mainly turn this into a long-term option to reduce private GHG-emissions.

Source

<http://www.fnr.de/>

*N°8 Website for Product Labeling*

Policy area.

Other

Policy level.

National

Policy sector.

Consumption

Policy actor.

Federal Ministry for Economic Cooperation and Development (BMZ) and the German Society for International Cooperation (GIZ)

Policy strategy.

Information

Policy measures.

Provides consumers with information on product labels for all product categories. It explains which social, economic, and ecological standards the labels include and how strict they are.

Policy stage.

Implemented

Anticipated effect on household consumption.

More sustainable consumption, thus lower GHG-emissions.

Actual effect on greenhouse gas emissions.

Hard to measure, depends very much on the individual.

Source

<https://www.siegelklarheit.de/home>

*N°9 Federal Strategy for Sustainability 2016*

Policy area.

Other

Policy level.

National

Policy sector.

Sustainability

Policy actor.

**Chancellery Ministers of State**

Policy strategy.

Information

Policy measures.

Presents the German public with a summary of all activities the German government undertakes in order to create a sustainable society. Mainly contains short summaries and links to more information and responsible entities.

Policy stage.

Implemented

Anticipated effect on household consumption.

More sustainable consumption and production, thus lower GHG-emissions.

Actual effect on greenhouse gas emissions.

Hard to measure, depends very much on the individual.

Source

[https://www.bundesregierung.de/Webs/Breg/DE/Themen/Nachhaltigkeitsstrategie/\\_node.htm](https://www.bundesregierung.de/Webs/Breg/DE/Themen/Nachhaltigkeitsstrategie/_node.htm)  
|

*N°10 CO<sub>2</sub>-Calculator*

Policy area.

Other

Policy level.

National

Policy sector.

Mitigation

Policy actor.

**Federal Environmental Agency (UBA), KlimAktiv GmbH**

Policy strategy.

Information

Policy measures.

Enables households to calculate their CO<sub>2</sub>-emissions. Also provides rough scenarios on mitigation measures without specifics.

Policy stage.

Implemented

Anticipated effect on household consumption.

Increased awareness of individual responsibility for GHG-emissions may lead to mitigation efforts.

Actual effect on greenhouse gas emissions.

Hard to measure, depends very much on the individual.

Source

[http://www.uba.co2-rechner.de/de\\_DE/](http://www.uba.co2-rechner.de/de_DE/)

*N°11 Climate Check Baden-Wurttemberg*

Policy area.

Other

Policy level.

Regional

Policy sector.

Mitigation

Policy actor.

**State Institute for the Environment, Measuring, and Nature Protection Baden-Wurttemberg**

Policy strategy.

Information

Policy measures.

Mainly targeting teens provides them with scenarios on how their lifestyle impacts the earth.

Policy stage.

Implemented

Anticipated effect on household consumption.

Increased awareness of individual responsibility for GHG-emissions may lead to mitigation efforts and critical questions regarding household's behaviour.

Actual effect on greenhouse gas emissions.

Hard to measure, depends very much on the individual.

Source

<http://lubw.klimachecker.info/>

*N°12 CO<sub>2</sub>-Calculator Baden-Wurttemberg*

Policy area.

Other

Policy level.

Regional

Policy sector.

Mitigation

Policy actor.

**State Institute for the Environment, Measuring, and Nature Protection Baden-Wurttemberg**

Policy strategy.

Information

Policy measures.

Serves much the same purpose as N°10 in others.

Policy stage.

Implemented

Anticipated effect on household consumption.

Increased awareness of individual responsibility for GHG-emissions may lead to mitigation efforts.

Actual effect on greenhouse gas emissions.

Hard to measure, depends very much on the individual.

Source

<http://www4.lubw.baden-wuerttemberg.de/servlet/is/237312/>

*N°13 Information Platform of the State Ministry for Environment, Climate, and Energy Business Baden-Wurttemberg*

Policy area.

Other

Policy level.

Regional

Policy sector.

Mitigation

Policy actor.

State Ministry for Environment, Climate, and Energy Business Baden-Wurttemberg

Policy strategy.

Information

Policy measures.

Provides an overview over all climate protection measures currently pursued by the state government. It gives a lot of short summaries and overviews to households regarding their own behavior and its climate impact.

Policy stage.

Implemented

Anticipated effect on household consumption.

Promotes GHG-emission reduction and enables households to plan their own mitigation efforts.

Actual effect on greenhouse gas emissions.

Hard to measure.

Source

<http://um.baden-wuerttemberg.de/de/klima/klimaschutz/was-kann-ich-selbst-tun/>

*N°14 Energy Transition Portal Baden-Wuerttemberg*

Policy area.

Other

Policy level.

Regional

Policy sector.

Sustainability

Policy actor.

State Ministry for Environment, Climate, and Energy Business Baden-Wuerttemberg

Policy strategy.

Information

Policy measures.

Information portal of the state Baden-Wuerttemberg giving an overview for all policies and initiatives as well as advice for households and enterprises.

Policy stage.

Implemented

Anticipated effect on household consumption.

Reducing GHG-emissions through behavioural change.

Actual effect on greenhouse gas emissions.

Does give a nice overview, impact difficult to measure.

Source

<http://energiewende.baden-wuerttemberg.de/de/startseite/>

*N°15 Climate-Protection Agency Mannheim and Climate Protection Control Centre Mannheim*

Policy area.

Other

Policy level.

Local

Policy sector.

Mitigation

Policy actor.

Klimaschutzagentur Mannheim, Klimaschutzleitstelle Mannheim

Policy strategy.

Information, subsidy

Policy measures.

Provides an overview over all climate protection measures currently pursued by the city of Mannheim. It gives a lot of short summaries and overviews to households regarding their own behavior and its climate impact as well as local initiatives in Mannheim. Offers education materials for households, schools, enterprises, and universities. Limited funding for refurbishment and building construction. Has small funds for home improvements in the areas of greening roofs, hydraulic heat pumps, combined heat and power systems, and refurbishment programmes.

Policy stage.

Implemented

Anticipated effect on household consumption.

Smaller GHG-emissions through a variety of activities by households.

Actual effect on greenhouse gas emissions.

Difficult to measure

Source

<http://www.klima-ma.de/>

*N°16 Climate Protection Strategy 2020 Mannheim*

Policy area.

Other

Policy level.

Local

Policy sector.

Mitigation

Policy actor.

City of Mannheim

Policy strategy.

Information, subsidy

Policy measures.

Sets the targets for Mannheim's emission reduction strategies for the year 2020

Policy stage.

Implemented

Anticipated effect on household consumption.

Lower GHG-emissions with minimal adjustments to behaviour.

Actual effect on greenhouse gas emissions.

Lead to a variety of activities by the city of Mannheim for which it has received recognition from the German Council for Sustainable Development

Source

[https://www.mannheim.de/sites/default/files/page/2717/klimaschutzkonzeption\\_2020\\_zusammenfassung.pdf](https://www.mannheim.de/sites/default/files/page/2717/klimaschutzkonzeption_2020_zusammenfassung.pdf)

*N°17 German Council for Sustainable Development.*

Other

Policy level.

Federal

Policy sector.

Sustainability

Policy actor.

German Council for Sustainable Development

Policy strategy.

Information

Policy measures.

Mainly serves as a focal point for research and dissemination of information with high-profile members from the academia, NGOs, former officials and politicians, churches, etc. Also serves as a communication platform between different societal actors

Policy stage.

Implemented

Anticipated effect on household consumption.

Leads to a more sustainable lifestyle

Actual effect on greenhouse gas emissions.

Impossible to know

Source

<https://www.nachhaltigkeitsrat.de/en/>

*N°18 Climate-Savings Book Mannheim*

Policy area.

Other

Policy level.

Local

Policy sector.

Mitigation

Policy actor.

Klimaschutzagentur Mannheim, Klimaschutzleitstelle Mannheim

Policy strategy.

Information, subsidy

Policy measures.

Gives an overview over ways to live more sustainably in Mannheim. Presents stores and services that help change behaviour towards lower GHG-emissions. Includes coupons for stores that produce organic/local products or offer advice to lead a more sustainable lifestyle.

Policy stage.

Implemented

Anticipated effect on household consumption.

Smaller GHG-emissions through a variety of lifestyle changes by households.

Actual effect on greenhouse gas emissions.

Not huge, but if used the impact is immediate and easy for households to use.

Source

<http://www.klima-ma.de/>

# Attachment 4: Identifies policies in France

## Food

*N°1. Support to organic agriculture.*

### Policy area.

Food

### Policy level.

National, local

### Policy sector.

Public purchase, public support, education

### Policy actor.

Ministries of finance, agriculture, education

### Policy strategy.

Since its official recognition by the government (Loi d'orientation agricole du 4 juillet 1980 et décret du 10 mars 1981) and by the European Union, followed by a certification of its products, organic agriculture is considered as a privileged means to reach a sustainable agricultural development. The « Grenelle de l'environnement » has set ambitious goals: in 2010, 15 % of the orders of public collective catering to be organic, 20% in 2012...

### Policy measures.

So as to deal with the deficit of supply and encourage demand, public policies can support the conversion of agricultural land and the purchase of organic products. Several tools are available: information towards the producers and consumers (training, education, labelling...) so as to increase the willingness to pay or to invest, rigid regulations (standardisation of specifications) or flexible ones (allowing mixed productions to the producer), public purchase so as to familiarise consumers with organic products. The French basket of public support to organic agriculture is particularly diverse compared to other European countries.

### Policy stage.

Unequally applied

### Anticipated effect on household consumption.

On the demand side it seems that the trend in public purchases were not allowed to reach the goals that has been fixed. Costs seem to be the explanation. Regarding consumers purchasing organic products implies for the same basket of goods and over cost of 23%. The change in habits could be the solution to reconcile organic food and budgetary constraints such as replacing part of animal proteins by vegetal proteins

### Actual effect on greenhouse gas emissions.

The impacts remain uncertain.

Shortening the breeding period has a cost in terms of toxicity of the process whereas lengthening it implies notably for cattle breeding an increase in emissions .

Conversely, producing vegetables under greenhouses has a negative impact in terms of emissions whereas it necessitates less chemical inputs than open field culture.

Moreover the volumes produced by organic agriculture are currently insufficient to optimise some processes and logistics from an energy point of view which implies an increase in emissions which is hard to quantify.

Source: (Centre d'analyse stratégique, 2011)

Centre d'analyse stratégique 2011. Pour une consommation durable. In Pour une consommation durable, Rapports et documents, 185. Paris: Centre d'analyse stratégique.

*N°2. Local commercial circuits.*

Policy area.

Food

Policy level.

local

Policy sector.

Public and Private purchase,

Policy actor.

Ministry of agriculture, farmers, local authorities, NGOs, supermarkets

Policy strategy.

The aim is to see the consumer regain some control over the traceability and quality of products, this should be easier when he is close to the origin of products. The second advantage is supposed to reside in less emissions from transportation, which is questionable: see below

Policy measures.

They are essentially included within the general framework of the aid measures to specific forms of agriculture (organic farming): help to projects. The tools for non-agricultural products are considerably less developed.

Policy stage.

Local implementation, existing and extending networks

Anticipated effect on household consumption.

The introduction of short circuits is intended to facilitate consumer access to local products that have been traditionally disadvantaged by the dynamics production and distribution

Actual effect on greenhouse gas emissions.

A study by CGDD (CGDD / SOeS, 2013), shows that we must remain cautious about the positive impact on the climate of short circuits. Emissions from agricultural products which represent a significant portion of emissions imported in France originate, according to this study, more in production processes than in transport

Source:

(Réseau Action Climat, 2014),(CGDD / SOeS, 2013)

CGDD / SOeS 2013. Consommer local, les avantages ne sont pas toujours ceux que l'on croit ., n° 158. Le point sur...

Réseau Action Climat 2014. Réduire les émissions liées à la consommation. quelles politiques publiques? In Réduire les émissions liées à la consommation. quelles politiques publiques?

### *N°3. Controls on organic food production*

Policy area.

Food

Policy level.

national, local implementation

Policy sector.

Administration

Policy actor.

Ministry of agriculture

Policy strategy.

Regulation and control

Policy measures.

So as to avoid contamination within production chains between conventional and organic products a systematic identification of products is programmed at all stages:

- raw materials and buy your products are to be stored in clearly identified places
- the preparation of bio products must be separated from ordinary products both physically and in time

Certifying organisations check the implementation of regulations on the farms and in processing units. An in-depth checking takes place once a year and certifiers can also check at any time.

Policy stage.

Implemented

Anticipated effect on household consumption.

Insofar as organic food production has a lower energy and greenhouse gas content than ordinary production, controls will enhance the confidence of consumers regarding those products.

Actual effect on greenhouse gas emissions.

Source:

<http://agriculture.gouv.fr/quels-controles-pour-les-produits-bio>

### *N°4. Agro environmental and climatic measures for organic food production*

Policy area.

Food

Policy level.

national, local implementation

Policy sector.

Administration

Policy actor.

Ministry of agriculture

Policy strategy.

Financial incentives

Policy measures.

The aim is to help agricultural units to associate economic and environmental efficiency. The subsidies to convert or to maintain organic production will be gradually multiplied by 2 from 2014 to 2020, associated to goal of doubling the surface of land devoted to organic production over the same period.

Policy stage.

In implementation

Anticipated effect on household consumption.

This could help lowering emissions insofar as organic food production has a lower energy and greenhouse gas content than ordinary production.

Actual effect on greenhouse gas emissions.Source:

<http://agriculture.gouv.fr/mesures-agro-environnementales-et-climatique-maec-et-aides-pour-la-bio>

*N°4 help retailers, cafes, restaurants to optimise their lighting systems*

Policy area.

Housing

Policy level.

local

Policy sector.

Administration

Policy actor.

Communauté du Pays d'Aix

Policy strategy.

incentives

Policy measures.

Putting in place a diagnosis of existing lighting and the replacement by less emitting systems and devices

Policy stage.

implemented

Anticipated effect on household consumption.

Less emitting leisure and shopping

Actual effect on greenhouse gas emissions.

Not assessed

Source:

<http://www.agglo-paysdaix.fr/environnement/climat-energie/pcet-plan-climat-energie.html>

*N°5. Favouring short-circuits*

Policy area.

food

Policy level.

local

Policy sector.

Administration

Policy actor.

Communauté du Pays d'Aix

Policy strategy.

incentives

Policy measures.

Include nutritional considerations into the local agricultural chart so as to favour local produce and link local agricultural production with nutrition, air quality and CO2 emissions.

Practical advice to communes so as to include organic and local food into school diets.

Set in place an educational programme in schools linking nutrition with sustainable development issues (waste, CO2 emissions).

Policy stage.

implemented

Anticipated effect on household consumption.

More healthy food, less emissions

Actual effect on greenhouse gas emissions.Source:

<http://www.agglo-paysdaix.fr/environnement/climat-energie/pcet-plan-climat-energie.html>

## Housing

*N°1 The 2012 thermal regulations*

Policy area.

Residential

Policy level.

national

Policy sector.

Regulation

Policy actor.

Administration, businesses.

Policy strategy.

The 2012 thermal regulation law reinforces the demands of the preceding 2005 regulation on the thermal performances of new buildings

Policy measures.

This regulation concerns all new buildings for which the construction permit was delivered after 1 January 2013. These buildings must have a average primary energy consumption below a threshold of 50kWh<sub>ep</sub> / m<sup>2</sup> / year The requirement kWh<sub>ep</sub> 50 / m<sup>2</sup> / year covers heating, cooling, lighting, domestic hot water and auxiliaries (pumps and fans). This threshold is modulated according to the geographical location, altitude, type of building use, surface of the living unit and the emissions of greenhouse gases of the energy source. On this last point, only buildings using wood energy and heat networks with low CO<sub>2</sub> emissions are allowed an additional primary energy consumption up to a maximum of 30% The threshold is also increased by 7.5 kWh<sub>ep</sub> / m<sup>2</sup> / year for collective housing, initially during a transitional phase before ending on 1 January 2015 and prolonged to 1 January 2018 .

Policy stage.

In course of implementation

Anticipated effect on household consumption.

The results are here obtained independently of consumers goodwill.

Actual effect on greenhouse gas emissions.

Émissions évitées grâce à la RT 2012, ex-ante (MtCO <sub>2</sub> e/an)					
	2015	2020	2025	2030	2035
Total	1,03	3,46	6,04	8,66	11,28
dont secteur ETS : électricité et 50 % de la chaleur (estimation)	0,42	1,44	2,49	3,55	4,61

Source:(Ministère de l'écologie du développement durable et de l'énergie, 2015)

Source

Ministère de l'écologie du développement durable et de l'énergie 2015. Rapport de la France en application de l'article 13.1du règlement 525/2013 relatif à un mécanisme pour la surveillance et la déclaration des émissions de gaz à effet de serre.

*N°2. Periodical revision of building standards and regulations.*

Policy area.

Residential

Policy level.

national

Policy sector.

Regulation

Policy actor.

Administration, businesses.

Policy strategy.

The 2012 thermal regulation law reinforces the demands of the preceding 2005 regulation on the thermal performances of new buildings

Policy measures.

This regulation concerns all new buildings for which the construction permit was delivered after 1 January 2013. These buildings must have a average primary energy consumption below a threshold of 50kWh<sub>ep</sub> / m<sup>2</sup> / year The requirement kWh<sub>ep</sub> 50 / m<sup>2</sup> / year covers heating, cooling, lighting, domestic hot water and auxiliaries (pumps and fans). This threshold is modulated according to the geographical location, altitude, type of building use, surface of the living unit and the emissions of greenhouse gases of the energy source. On this last point, only buildings using wood energy and heat networks with low CO<sub>2</sub> emissions are allowed an additional primary energy consumption up to a maximum of 30% The threshold is also increased by 7.5 kWh<sub>ep</sub> / m<sup>2</sup> / year for collective housing, initially during a transitional phase before ending on 1 January 2015 and prolonged to 1 January 2018 .

Policy stage.

In course of implementation

Anticipated effect on household consumption.

The results are here obtained independently of consumers goodwill.

Actual effect on greenhouse gas emissions.

Émissions évitées grâce à la RT 2012, ex-ante (MtCO <sub>2</sub> e/an)					
	2015	2020	2025	2030	2035
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Source:(Ministère de l'écologie du développement durable et de l'énergie, 2015)

Source

Ministère de l'écologie du développement durable et de l'énergie 2015. Rapport de la France en application de l'article 13.1du règlement 525/2013 relatif à un mécanisme pour la surveillance et la déclaration des émissions de gaz à effet de serre.

*N°3. Checking and repairing heating systems*

Policy area.

Residential

Policy level.

national

Policy sector.

Not assessed

Policy actor.

private contractors

Policy strategy.

regulatory. originally, the measure was to prevent intoxication by carbon oxide. CO2 emissions appear as a supplementary argument to seriously maintain heating systems and to upgrade them.

Policy measures.

This measure concerns heating systems between 4 and 400 kW, whatever the fuel used (except electricity). It implies the checking of the boiler, its cleaning and an assessment of atmospheric pollutants. The contractor is to give some advice concerning the good use of the boiler and of the whole heating system, and if relevant, advice regarding its replacement.

Policy stage.

Implemented

Anticipated effect on household consumption.

On the medium-term a shift towards less emitting devices

Actual effect on greenhouse gas emissions.

Not assessed

Source:

<http://www.ademe.fr/sites/default/files/assets/documents/fiche-entretien-des-chaudieres.pdf>

*N°4. Withdrawal of incandescent light bulbs.*Policy area.

Housing

Policy level.

national,

Policy sector.

Regulation

Policy actor.

Government

Policy strategy.

Implementation of the EU Ecodesign Directive

Policy measures.

A withdrawal of incandescent light bulbs has been implemented. The provisions apply more broadly to appliances in order to limit consumption caused by standby mode. It applies to all electrical appliances used in the home which have to be lower than 1\_W (or 2\_W according to function) from 2010 and 0.5\_W (or 1\_W) from 2013. It also introduced limitations on single digital decoders (their consumption has been limited to 1\_W from 2010, then 0.5\_W since 2012), and an improvement of the performance of chargers, external power supplies and electrical chargers.

Policy stage.

Implemented

Anticipated effect on household consumption.

Better energy and greenhouse gases emissions efficiency of the consumption process

Actual effect on greenhouse gas emissions.

Impact is estimated at  $-4.05\_Mt$  CO<sub>2</sub>e in France for the withdrawal of incandescent light bulbs alone in 2020

Source: (Ministère de l'Écologie du Développement durable et de l'Énergie, 2013)

Source

Ministère de l'Écologie du Développement durable et de l'Énergie 2013. Sixième communication nationale de la France à la convention-cadre des nations unies sur les changements climatiques. In Sixième communication nationale de la France à la convention-cadre des nations unies sur les changements climatiques, 279p. Paris.

*N°5. Energy labelling of dwellings.*Policy area.

Housing

Policy level.

national

Policy sector.

Regulation, information

Policy actor.

Government, administration

Policy strategy.

Subsidies.

Policy measures.

The introduction of RT2012 was accompanied by a label system providing for subsidies to project owners for the construction of new buildings with higher performance than the previous thermal regulations

For this purpose, a label comprising five levels was created, ranging from HPE (high energy performance, i.e. at least -10% compared with the regulations) classification, to BBC classification (low consumption building, corresponding to RT2012 requirements). The BBC level opens the way to the possibility of claiming a number of subsidies (exemption from the tax on buildings, increase of the zero rate loan, increase of rental investment subsidies).

These measures were discontinued after RT2012 came into force. Two new labels have been substituted to the previous ones buildings: BBC+ and BBC++ labels (-10% and -20% compared with the regulations). They apply to all planning applications for new buildings (or parts of new buildings) and reinforce the energy performance requirements.

A "haute performance énergétique rénovation" (high energy performance retrofit) label has also been created. It includes two levels for residential buildings: the "high energy performance retrofit, HPE 2009" label for buildings achieving a primary energy consumption

of less than 150\_ kWhPE/m<sup>2</sup>/ year and the “low energy consumption retrofit, BBC 2009” for buildings achieving primary energy consumption of less than 80kWhPE/m<sup>2</sup>/year.

Policy stage.

Implemented

Anticipated effect on household consumption.

Labels are expected to give consumers a precise information on the environmental and social qualities of products and to offer an additional criterion for choice. Official labelling changes non-checkable qualities (beliefs) into a reliable attributes and thus counter asymmetries in information.

Actual effect on greenhouse gas emissions.

Unknown

Soruce

Ministère de l'Écologie du Développement durable et de l'Énergie 2013. Sixième communication nationale de la France à la convention-cadre des nations uniessur les changements climatiques. In Sixième communication nationale de la France à la convention-cadre des nations uniessur les changements climatiques, 279p. Paris.

*N°6. Remove barriers to energy upgrading in collective housing*

Policy area.

Housing

Policy level.

national

Policy sector.

Regulations

Policy actor.

Parliament, government, administration

Policy strategy.

various measures are being initiated to remove some of the barriers to the renovation of housing or to carbon friendly behaviour

Policy measures.

Decision rules within the construction and housing code have been modified as they we put previously excessively hard constraints on decisions in collectively owned housing

- a majority vote can decide for modifications of collective interest in privately owned parts of the building at the expense of the owner of these parts
- a majority vote can decide the installation of heat meters or heating cost allocators
- a mandatory registration on the agenda of the general meeting of owners following an energy audit in a building with a collective heating or cooling, of the issue of energy savings
- dealing with the insufficient individualization of heating costs. Since 1974, buildings equipped with a collective heating must be fitted with devices allowing the individualization of

heating costs. Decree No. 2012-545 of 23 April 2012 amended Articles R. 131-2 to R. 131-7 of the Code of Construction and Housing to facilitate the implementation of this obligation by redefining the technical impossibilities allowing not to install measuring devices and by revising the conditions of the economic viability of this action. This shall be effective before 31 March 2017.

- To deal with the asymmetry between the owners who bear the costs, and tenants who benefit of energy savings and encourage a "win-win" process, Law No. 2009-323 passed on March 25, 2009 defines a financial participation of the tenant after the completion of energy-saving work by the owner.

The owner may claim the tenant to pay up to a half of the monetary savings achieved.

This participation will last for a 15-year period.

- The Habiter Mieux (Living Better) program aims to achieve thermal renovation for owners occupants in fuel poverty

#### Policy stage.

To a large extent, implemented.

#### Anticipated effect on household consumption.

Energy savings, lowering energy costs and opening the possibility for more carbon friendly behaviour in collective housing settings.

#### Actual effect on greenhouse gas emissions.

Unknown

#### Source

Ministère de l'écologie du développement durable et de l'énergie 2013. Rapport de la France au titre du paragraphe 2 de l'article 3 de la décision n° 280/2004 CE du Parlement européen et du Conseil du 11 février 2004. Actualisation 2013

In Rapport de la France au titre du paragraphe 2 de l'article 3 de la décision n° 280/2004 CE du Parlement européen et du Conseil du 11 février 2004. Actualisation 2013

Paris.

Ministère de l'Écologie du Développement durable et de l'Énergie 2013. Sixième communication nationale de la France à la convention-cadre des nations unies sur les changements climatiques. In Sixième communication nationale de la France à la convention-cadre des nations unies sur les changements climatiques, 279p. Paris.

*N°7. The heat fund.*

#### Policy area.

Residential

#### Policy level.

national

#### Policy sector.

Residential and others: Tertiary, agriculture and industry

#### Policy actor.

Administration , owners, contractors, businesses

Policy strategy.

Use of public funds.

Policy measures.

Created in December 2008, the Heat Fund was established to support the production of heat from renewable energy sources. It had a budget of 1.12 billion euros for the period 2009-2013. The Heat Fund supports the development of the use of biomass (forestry, agricultural, biogas ...), geothermal (directly or through use of heat pumps), solar thermal, recovery of energy, as well as the development of heat networks using this energy. The sectors concerned are collective housing, tertiary, agriculture and industry. with the law on the energy transition to green growth, it is envisaged to gradually double the Heat Fund after the 2017

Policy stage.

Implemented and continuing after 2017

Anticipated effect on household consumption.

The expected results are independent from consumers goodwill and implication.

Actual effect on greenhouse gas emissions.

- ex post assessment:

in 2013 avoided greenhouse gas emissions amounted to 2,15 MtCO<sub>2e</sub>.

- ex ante assessment:

	Gain annuel cumulé depuis 2009 – MtCO <sub>2e</sub>
2020	7,13
2025	8,55
2030	8,55
2035	8,55

Gains additionnels d'émissions de GES (ktCO<sub>2e</sub>) résultants du renforcement des mesures de soutien à la production de chaleur à partir de sources d'énergies renouvelables

2020	2025	2030	2035
2410	8110	15240	22360

Source:(Ministère de l'écologie du développement durable et de l'énergie, 2015)

Source

Ministère de l'écologie du développement durable et de l'énergie 2015. Rapport de la France en application de l'article 13.1 du règlement 525/2013 relatif à un mécanisme pour la surveillance et la déclaration des émissions de gaz à effet de serre.

*N°8. Climate and energy in urban planning*

Policy area.

Residential transport

Policy level.

national, local

Policy sector.

planning

Policy actor.

municipalities and regions

Policy strategy.

Introducing measures within planning documents

Policy measures.

Containing urban sprawl, limiting constrained mobility.

Policy stage.

Implemented. Many local experiments.

Anticipated effect on household consumption.

Limitation of daily transport: to work, to commercial centres etc

Actual effect on greenhouse gas emissions.

Not assessed

Source:

<http://www.territoires-climat.ademe.fr/content/les-leviers-dactions-possibles>

*N°9. Education programs on low energy for professionals*Policy area.

Residential

Policy level.

national, decentralised implementation

Policy sector.

training, education

Policy actor.

municipalities and regions

Policy strategy.

Aims to contribute to cut by 38% energy use in the building sector by 2020

Policy measures.

Enhances the training program on energy savings for craftsmen and contractors in the building sector for 2014 -2017. This will enable 25,000 professionals to train themselves between 2014 and 2017

Policy stage.

Implementation.

Anticipated effect on household consumption.

Access to a better trained labour force

Actual effect on greenhouse gas emissions.

Not assessed

Source:

<http://www.territoires-climat.ademe.fr/content/les-leviers-dactions-possibles>

*N°10. Energy labels for appliances and vehicles.*

Policy area.

transversal

Policy level.

National,

Policy sector.

information

Policy actor.

Administrations, consumers associations, sellers

Policy strategy.

The program aiming to improve energy efficiency include standards for domestic equipments and labelling indicating the level of their energy use so as the consumer's choice might include this criterion

Policy measures.

The energy label, initiated by an European directive (1992), has allowed to alleviate a major part of the barriers preventing the purchase of low energy profile household equipments. Energy labelling which classifies equipment from A to G according to their energy efficiency first existed for domestic appliances and electric light bulbs and has been extended to homes) and vehicles from 2006 and tumble-dryers from 2011.

Policy stage.

Implemented

Anticipated effect on household consumption.

The A class category has become one of the most dynamic, which proves the efficiency of information to guide choices. Another advantage is that it pushes producers to commercialise better equipments.

Actual effect on greenhouse gas emissions.

It remains that this measure does not yet allow the consumer to think in terms of global costs. Another point which is not rich resolved is the necessary of periodically upgrading the standards so as to eliminate from the market the less efficient products.

Source

Centre d'analyse stratégique 2011. Pour une consommation durable. In Pour une consommation durable, Rapports et documents, 185. Paris: Centre d'analyse stratégique. Ministère de l'Écologie du Développement durable et de l'Énergie 2013. Sixième communication nationale de la France à la convention-cadre des nations uniessur les changements climatiques. In Sixième communication nationale de la France à la convention-cadre des nations uniessur les changements climatiques, 279p. Paris.

*N°11. Espaces info énergie (energy information spots).*

Policy area.

Housing

Policy level.

national and local

Policy sector.

Information

Policy actor.

National agency for the environment, waste and energy management (Ademe), local authorities, non-profit organisations.

Policy strategy.

The Espace Info Énergie network, developed by ADEME, in close partnership with local authorities, relies on associations and non-profit organizations, rooted in local life and specialized in information and advice on energy management, energy efficiency and renewable energy. Since 2013, the spots are integrated in the 'Points Renovation Info Service' network, grouping together under a single entity, information, technical, legal, and fiscal services...

Policy measures.

More than 450 spots over all France

Policy stage.

Developed by ADEME since 2001, in close partnership with local authorities.

Anticipated effect on household consumption.

Individuals are accompanied on the options they choose, the optimization of technical solutions with regard to their available budget, the national and local financial aid available, and the choice of a contractor. Advisors can also assist in the interpretation of estimates, point to the supplementary information requested, check the compliance of documents regarding the formal request for subsidies.

Actual effect on greenhouse gas emissions.

Not assessed

Source

Réseau Action Climat 2014. Réduire les émissions liées à la consommation. quelles politiques publiques?

*N°12. Website for energy offers.*

Policy area.

Housing

Policy level.

National,

Policy sector.

information

Policy actor.

Two public actors: Médiateur de l'énergie and Commission de régulation de l'énergie

Policy strategy.

Information

Policy measures.

The Médiateur de l'énergie and the Commission de régulation de l'énergie created in 2009 website on the regulated and Private energy offers to allow comparisons of the prices and the services that are associated.

Policy stage.

Implemented

Anticipated effect on household consumption.

Assistance to choice

Actual effect on greenhouse gas emissions.

Not assessed

Source: (Centre d'analyse stratégique, 2011)

Centre d'analyse stratégique 2011. Pour une consommation durable. In Pour une consommation durable, Rapports et documents, 185. Paris: Centre d'analyse stratégique.

*N°13. Energy retrofit ambassadors.*Policy area.

Housing

Policy level.

national, local

Policy sector.

Information, advice

Policy actor.

NGOs, local administrations,

Policy strategy.

Information, advice

Policy measures.

Support for the most isolated, impoverished homes by energy « retrofit ambassadors »: in addition to the local network a system of energy retrofit ambassadors, recruited through the future jobs initiative, will be set up by local collectivities or associations in partnership with Anah. Their mission will be to take proactive measures to detect and identify the most isolated, impoverished households. Deployed across the whole territory they will be able to rely on all stakeholders of the sector (Adil (Departmental Housing Information Office), CCAS

(Social Action Community Centre), associations, etc.) to disseminate information. This network of energy retrofit ambassadors should enable the targeted households to have easier access to existing subsidies and retrofit schemes.

Policy stage.

Implemented

Anticipated effect on household consumption.

Expected to reduce energy consumption and thus emissions.

Actual effect on greenhouse gas emissions.

Not assessed

Source

Ministère de l'Écologie du Développement durable et de l'Énergie 2013. Sixième communication nationale de la France à la convention-cadre des nations unies sur les changements climatiques. In Sixième communication nationale de la France à la convention-cadre des nations unies sur les changements climatiques, 279p. Paris.

*N°14. Mandatory energy performance assessment.*

Policy area.

Housing

Policy level.

national,

Policy sector.

Regulation

Policy actor.

Government, professionals

Policy strategy.

information

Policy measures.

The diagnostic de performance énergétique (DPE) (energy performance assessment) is mandatory when selling a house, or building (residential or tertiary) since 1 November 2006, and renting a house or flat for residential use since 1 July 2007. The energy performance assessment gives information on the energy efficiency of the home or building by assessing its energy consumption and its impact in terms of GHG emissions, with a corresponding classification and energy-saving recommendations.

Jointly owned residential buildings of fifty lots or more, equipped with a collective heating or cooling system, for which the planning application was filed before 1 June 2001, must have an energy audit before the end of 2016.

Policy stage.

Implemented

Anticipated effect on household consumption.

Both the DPE and the energy audit will make inhabitants aware of energy savings and involve them in the energy retrofitting of their property by suggesting appropriate retrofit scenarios

Actual effect on greenhouse gas emissions.

Not assessed

Source

Ministère de l'Écologie du Développement durable et de l'Énergie 2013. Sixième communication nationale de la France à la convention-cadre des nations unies sur les changements climatiques. In Sixième communication nationale de la France à la convention-cadre des nations unies sur les changements climatiques, 279p. Paris.

*N°15. Zero rate loan (éco-prêt à taux zéro: eco-PTZ).*

Policy area.

Residential

Policy level.

national

Policy sector.

Banking system

Policy actor.

Banks and other financial institutions

Policy strategy.

Incentive. Increasing household solvency to facilitate energy upgrading in housing .

Policy measures.

This type of loan is available since 1 April 2009 to private owners or occupants of a dwelling built before 1990 for the financing of heavy renovation.

three options are available:

- implementation of a set of various energy-saving actions
- reaching a level of "overall energy performance" for the dwelling;
- réhabilitation a system of individual "sewerage" by a device consuming no energy.

This loan finances up to €30,000 to improve the energy efficiency of housing over a period of 10 years, extendable to 15 years for some types of work. Under certain income conditions It can be accumulated with the tax credit for energetic transition (CITE)

Policy stage.

Implemented

Anticipated effect on household consumption.

It is assumed that 80% of work undertaken as part of the eco-PTZ also benefit from the tax credit for energetic transition (CITE) or the tax credit for sustainable development (CIDD).

The renovation actions of household result in energy savings if they keep the same level of thermal comfort. Some households might choose to enjoy better thermal comfort at the expense of a lower energy saving. This rebound effect is not considered in this assessment. The margin effect and the effect of the improvement of the quality of work due to the criteria conditioning aid allocation are taken into account.

Actual effect on greenhouse gas emissions.

Emissions évitées en MtCO <sub>2e</sub> /an				
2015	2020	2025	2030	2035
7,2	7,2	7,2	7,1	7,1

Source:(Ministère de l'écologie du développement durable et de l'énergie, 2015)

Source

Ministère de l'écologie du développement durable et de l'énergie 2015. Rapport de la France en application de l'article 13.1 du règlement 525/2013 relatif à un mécanisme pour la surveillance et la déclaration des émissions de gaz à effet de serre.

*N°16. Buildings tax exemption for energy upgrading.*

Policy area.

Housing

Policy level.

national, local

Policy sector.

Fiscal

Policy actor.

Ministry of finance, local communities

Policy strategy.

Fiscal incentive

Policy measures.

The Finance Law for 2006 introduced the option for local authorities to grant an exemption of the building tax for five years. The exemption rate is 50 or 100%, for buildings completed before 1 January 1989 for which extensive work eligible for the CIDD has been carried out. This possibility has since been extended to all buildings completed before 31 December 2008.

Policy stage.

Implemented

Anticipated effect on household consumption.

Incentive to improve the energy equipment of dwellings

Actual effect on greenhouse gas emissions.

Unknown

Source

Ministère de l'Écologie du Développement durable et de l'Énergie 2013. Sixième communication nationale de la France à la convention-cadre des nations unies sur les changements climatiques. In Sixième communication nationale de la France à la convention-cadre des nations unies sur les changements climatiques, 279p. Paris.

*N°17. Tax credit for the energy transition*Policy area.

Residential

Policy level.

national

Policy sector.

Fiscal

Policy actor.

Ministry of Finance within the framework of the 2005 law fixing the orientations of the energy policy .

Policy strategy.

Fiscal incentive

Policy measures.

Since 2005 individuals can benefit from a Tax Credit for Sustainable Development for the purchase of materials or of the most efficient equipment in terms of energy savings (in existing buildings only) or for the production of renewable energy (both in new and existing buildings). This measure was extended to landlords, namely those having one or more properties and who rent or wish to. Since its creation, the list of eligible equipments and the tax rates they are entitled to are periodically reassessed in order to accelerate thermal renovations and promote the use of the most efficient technologies. In 2015, the policy now named Tax Credit for the Energy Transition was also strengthened in terms of the list of eligible equipments and in terms of rates.

Policy stage.

Implemented

Anticipated effect on household consumption.

Incentive to refurbish and buy equipment with minimal emissions

Actual effect on greenhouse gas emissions.

This type of measure does not exclude both bargain and rebound effects.

Source

Ministère de l'écologie du développement durable et de l'énergie 2015. Rapport de la France en application de l'article 13.1 du règlement 525/2013 relatif à un mécanisme pour la surveillance et la déclaration des émissions de gaz à effet de serre. In Rapport de la France

en application de l'article 13.1 du règlement 525/2013 relatif à un mécanisme pour la surveillance et la déclaration des émissions de gaz à effet de serre. Paris. Ministère de l'Écologie du Développement durable et de l'Énergie 2013. Sixième communication nationale de la France à la convention-cadre des nations unies sur les changements climatiques. In Sixième communication nationale de la France à la convention-cadre des nations unies sur les changements climatiques, 279p. Paris.

*N°18. Subsidies for solar panels*

Policy area.

Residential

Policy level.

national, local implementation

Policy sector.

Energy policy

Policy actor.

State, municipalities and regions, contractors, owners

Policy strategy.

Use of public funds

Policy measures.

Subsidies from ANAH (Agence nationale pour l'habitat) to buy and install solar panels for low income households

Reduced rate of VAT (5.5%) to buy and install solar panels

Tax credit to buy solar panels: 50% of the sum excluding labour costs

Zero rate loan (see 8) can be used for solar panels. This loan can reach €30,000 and the payback on the period from 3 to 15 years.

According to regions and departments subsidies can be granted to persons who want to invest in solar panels

Policy stage.

Implementation.

Anticipated effect on household consumption.

Encouraging greener energy use

Actual effect on greenhouse gas emissions.

Not assessed

Source:

<http://www.24pm.fr/droit-et-ecologie/subventions-et-aides/676-aides-et-subventions-pour-les-panneaux-solaires>

*N°19. Reduced VAT rate for renovation work.*

Policy area.

housing

Policy level.

national,

Policy sector.

Fiscal

Policy actor.

Ministry of finance

Policy strategy.

Tax reduction

Policy measures.

Improvements, conversions, fitting out and maintenance of buildings completed more than two years earlier (apart from some big equipment) benefit from a reduced VAT rate (5.5% to 7% from 1 January 2012, then 10% from 2014 instead of 19.6%) Although this measure is not specific to energy-saving work it does help to support the energy retrofitting of homes.

Policy stage.

Implemented

Anticipated effect on household consumption.

Incentive to improve the energy equipment of dwellings

Actual effect on greenhouse gas emissions.

Unknown

Source: (Ministère de l'Écologie du Développement durable et de l'Énergie, 2013)

Ministère de l'Écologie du Développement durable et de l'Énergie 2013. Sixième communication nationale de la France à la convention-cadre des nations unies sur les changements climatiques. In Sixième communication nationale de la France à la convention-cadre des nations unies sur les changements climatiques, 279p. Paris.

*N°20. Universal allowance for low income households.*Policy area.

Housing

Policy level.

national,

Policy sector.

subsidy

Policy actor.

Ministry of finance,

Policy strategy.

Helping households with small to moderate income

Policy measures.

Implementation of a universal allowance for the middle classes: households whose annual income is less than €35,000 (for a couple) will be allocated a subsidy of €1,350. It will be available for two years to finance energy retrofits in private housing.

Policy stage.

Implemented

Anticipated effect on household consumption.

Reduce energy consumption and emissions

Actual effect on greenhouse gas emissions.

Not assessed

Source

Ministère de l'Écologie du Développement durable et de l'Énergie 2013. Sixième communication nationale de la France à la convention-cadre des nations unies sur les changements climatiques. In Sixième communication nationale de la France à la convention-cadre des nations unies sur les changements climatiques, 279p. Paris.

*N°21. household energy use advice*Policy area.

Residential

Policy level.

national,

Policy sector.

Energy policy

Policy actor.

National agency for the environment and energy (ADEME)

Policy strategy.

Information

Policy measures.

ADEME has both developed Internet sites and offices all around the country which distribute information.

The Internet site holds leaflets dealing among others with the energy consumption of lighting, do it yourself at home, appliances... Another leaflet deals with the different aspects of energy consumption at home

Policy stage.

Implemented.

Anticipated effect on household consumption.

Lowering energy use

Actual effect on greenhouse gas emissions.

Not assessed

Source:

<http://www.ademe.fr/particuliers-eco-citoyens/achats>

<http://www.ademe.fr/particuliers-eco-citoyens/achats/eclairage>

<http://www.ademe.fr/particuliers-eco-citoyens/achats/bricolage>

<http://www.ademe.fr/particuliers-eco-citoyens/achats/electromenager>

<http://www.ademe.fr/sites/default/files/assets/documents/guide-pratique-reduire-facture-electricite.pdf>

*N°23. One spot renovation desks.*

Policy area.

Housing

Policy level.

national, local

Policy sector.

Information

Policy actor.

Government, Administration, local communities

Policy strategy.Policy measures.

Creation of a network of local "one spot renovation desks ». Within the retrofit plan the French government opened new information centres. A network of local advice and information points has been deployed since September 2013 in partnership with collectivities and organisations currently in place (ADEME, ANAH, etc.).

Policy stage.

Implemented

Anticipated effect on household consumption.

Not assessed

Actual effect on greenhouse gas emissions.

Not assessed

Source: (Ministère de l'Écologie du Développement durable et de l'Énergie, 2013)

Ministère de l'Écologie du Développement durable et de l'Énergie 2013. Sixième communication nationale de la France à la convention-cadre des nations unies sur les changements climatiques. In Sixième communication nationale de la France à la convention-cadre des nations unies sur les changements climatiques, 279p. Paris.

*N°24. Withdrawal of incandescent light bulbs.*

Policy area.

Housing

Policy level.

national,

Policy sector.

Regulation

Policy actor.

Government

Policy strategy.

Implementation of the EU Ecodesign Directive

Policy measures.

A withdrawal of incandescent light bulbs has been implemented. The provisions apply more broadly to appliances in order to limit consumption caused by standby mode. It applies to all electrical appliances used in the home which have to be lower than 1\_W (or 2\_W according to function) from 2010 and 0.5\_W (or 1\_W) from 2013. It also introduced limitations on single digital decoders (their consumption has been limited to 1\_W from 2010, then 0.5\_W since 2012), and an improvement of the performance of chargers, external power supplies and electrical chargers.

Policy stage.

Implemented

Anticipated effect on household consumption.

Better energy and greenhouse gases emissions efficiency of the consumption process

Actual effect on greenhouse gas emissions.

Impact is estimated at -4.05\_Mt CO<sub>2</sub>e in France for the withdrawal of incandescent light bulbs alone in 2020

Source

Ministère de l'Écologie du Développement durable et de l'Énergie 2013. Sixième communication nationale de la France à la convention-cadre des nations unies sur les changements climatiques. In Sixième communication nationale de la France à la convention-cadre des nations unies sur les changements climatiques, 279p. Paris.

*N°25. checking and repairing heating systems*Policy area.

Residential

Policy level.

national

Policy sector.Policy actor.

private contractors

Policy strategy.

regulatory. originally, the measure was to prevent intoxication by carbon oxide. CO2 emissions appear as a supplementary argument to seriously maintain heating systems and to upgrade them.

Policy measures.

This measure concerns heating systems between 4 and 400 kW, whatever the fuel used (except electricity). It implies the checking of the boiler, its cleaning and an assessment of atmospheric pollutants. The contractor is to give some advice concerning the good use of the boiler and of the whole heating system, and if relevant, advice regarding its replacement.

Policy stage.

Implemented

Anticipated effect on household consumption.

On the medium-term a shift towards less emitting devices

Actual effect on greenhouse gas emissions.

Not assessed

Source:

<http://www.ademe.fr/sites/default/files/assets/documents/fiche-entretien-des-chaudieres.pdf>

*N°26. Refurbishing public housing*Policy area.

Housing

Policy level.

local

Policy sector.

Administration

Policy actor.

Communauté du Pays d'Aix

Policy strategy.

communication

Policy measures.

Sensitizing renters to energy soberness in all cases and particularly when they move into a refurbished home .

Policy stage.

implemented

Anticipated effect on household consumption.

Not assessed

Actual effect on greenhouse gas emissions.

Saving 19 458 T CO<sub>2</sub>-e

Source:

<http://www.agglo-paysdaix.fr/environnement/climat-energie/pcet-plan-climat-energie.html>

*N°27. Substituting fossil energies by renewable energies in private housing*

Policy area.

Housing

Policy level.

local

Policy sector.

Administration

Policy actor.

Communauté du Pays d'Aix

Policy strategy.

incentives

Policy measures.

Maintaining and extending the measures for individuals to equip with renewable energies, further apply them to the connection to collective heating networks using at least 50% of renewable energy or geothermal energy. Subsidies for replacing old wood stoves.

Policy stage.

implemented

Anticipated effect on household consumption.

shift away from fossil fuels

Actual effect on greenhouse gas emissions.

Reduction of emissions by 20 320 T CO<sub>2</sub>-e

Source:

<http://www.agglo-paysdaix.fr/environnement/climat-energie/pcet-plan-climat-energie.html>

N°28. Promoting wood as a building resource and a fuel

Policy area.

Housing

Policy level.

local

Policy sector.

Administration

Policy actor.

Communauté du Pays d'Aix

Policy strategy.

Information,

Policy measures.

Create the conditions to favour the use of local wood through short circuits either for building or heating

Policy stage.

implemented

Anticipated effect on household consumption.

fuel and material substitution

Actual effect on greenhouse gas emissions.

saving 16178 T CO<sub>2</sub>-e

Source:

<http://www.agglo-paysdaix.fr/environnement/climat-energie/pcet-plan-climat-energie.html>

*N°29. Refurbishing private housing*

Policy area.

Housing

Policy level.

local

Policy sector.

Administration

Policy actor.

Communauté du Pays d'Aix

Policy strategy.

subsidies

Policy measures.

Helping the access to energy savings for all, with a priority to the most inefficient homes, the poorest households and first-time owners. Tax refund for energy savings and renewable energies.

Policy stage.

implemented

Anticipated effect on household consumption.Actual effect on greenhouse gas emissions.

Savings: 67 087 TCO<sub>2</sub>-e

Source:

<http://www.agglo-paysdaix.fr/environnement/climat-energie/pcet-plan-climat-energie.html>

## Transportation

*N°1. Bonus malus taxation on new cars.*

Policy area.

transport

Policy level.

national

Policy sector.

Fiscal, industrial policy

Policy actor.

Ministries of finance, transport and the environment

Policy strategy.

Fiscal.

Policy measures.

The bonus-malus is an innovative measure, set in January 2008 that aims to tax the purchase of the most polluting light vehicles and to reduce the cost of the less polluting ones. This added to the subsidies for discarding old polluting cars (« prime à la casse ») so as to support in a context of crisis the sales of the automotive industry. This allowed to keep a certain level of activity and to eliminate ancient and highly polluting cars.

Policy stage.

implemented and lasting for several years

Anticipated effect on household consumption.

In 2009, the sales of cars emitting between 101 and 120 g of CO<sub>2</sub>/km (bonus of 700 euros) increased by 48.4% and their share in the market increased from 20% in 2007 to 48% in 2009. The sales of the most polluting cars (250 g and a Malus of €2600) were divided by two and 2009. This implied that 76% of gasoline cars and 73% of diesel belonged to the « green » categories. The bonus Malus system was initially designed to be financially neutral for public finance; its success led to an important deficit (more than €300 million in 2008 and 615 million in 2009 (181 million of Malus and 796 millions of bonus). This led the government to revise and lower the scaling of bonuses.

Actual effect on greenhouse gas emissions.

The first studies revealed negative environmental effects for the short-term due to an increase of the emissions from the industrial system and positive effects for the long-term.

Source

Centre d'analyse stratégique 2011. Pour une consommation durable. In Pour une consommation durable, Rapports et documents, 185. Paris: Centre d'analyse stratégique. D'HAULTFOEUILLE, X., P. GIVORD and X. BOUTIN 2010. The Environmental Effect of Green Taxation: the Case of the French "Bonus/Malus" INSEE. Direction des Études et Synthèses Économiques. Document de travail.

*N°2. Development of hybrid and electric vehicles.*

Policy area.

transport

Policy level.

national

Policy sector.

Industrial policy

Policy actor.

Different ministries (transport, industry, environment)

Policy strategy.

The strategy has several components: action on infrastructures, on industrial sectors (batteries, standards...), Fiscal (bonus), purchase of electric vehicles by administrations.

Policy measures.

After a first national plan for the development of electric vehicles in October 2009, the « automobile plan » strengthened the support for the sector. It offers specific measures to promote innovation and research in the area of clean vehicles and to strengthen the ecological bonus-malus. A target was set to state administrations to acquire at least 25% of electric or hybrid vehicles in their new purchases of passenger cars and light commercial vehicles. This objective was met and exceeded in 2013, with 1271 purchases of clean vehicles, including 308 electric vehicles and 963 hybrid vehicles, constituting 29% of public purchase of vehicles. It has been decided to establish a network of 900,000 private recharging points and 75,000 public recharging points by 2015 and to increase it to 4 million private recharging points and 400,000 public recharging points by 2020.

Policy stage.

implemented

Anticipated effect on household consumption.

This does not directly concern household consumption; yet it can be expected to have a demonstration effect on households, which combines with the arrival on the market of numerous models of electric and hybrid vehicles having an increased autonomy and the purchase of which is quite significantly subsidised.

*Evolution du parc de véhicules électriques et hybrides rechargeables en millions de véhicules*

	2020	2025	2030	2035
<i>AME</i>				
Véhicules électriques	0,57	0,86	1,15	1,28
Véhicules hybrides rechargeables	0,61	1,05	1,54	2,01

Actual effect on greenhouse gas emissions.

Par soustraction des émissions évitées par la substitution de véhicules thermiques par des véhicules électriques et hybrides rechargeables, et des émissions provenant de la production d'électricité pour alimenter ces véhicules, on obtient les gains suivants (en ktCO<sub>2e</sub>) :

2020	2025	2030	2035
1938	2756	2940	3275

Pour calculer l'effet additionnel du renforcement des mesures en faveur des véhicules électriques et hybrides, on soustrait aux résultats ci-dessus les gains présentés dans l'évaluation précédente (cf. section 2.1) :

Gains additionnels d'émissions de GES (ktCO<sub>2e</sub>) résultants du renforcement des mesures en faveur des véhicules électriques et hybrides

2020	2025	2030	2035
477	726	785	877

Source:(Ministère de l'écologie du développement durable et de l'énergie, 2015; Ministère de l'Écologie du Développement durable et de l'Énergie, 2013)

Source

Ministère de l'écologie du développement durable et de l'énergie 2015. Rapport de la France en application de l'article 13.1 du règlement 525/2013 relatif à un mécanisme pour la surveillance et la déclaration des émissions de gaz à effet de serre. In Rapport de la France en application de l'article 13.1 du règlement 525/2013 relatif à un mécanisme pour la surveillance et la déclaration des émissions de gaz à effet de serre. Paris.

Ministère de l'Écologie du Développement durable et de l'Énergie 2013. Sixième communication nationale de la France à la convention-cadre des nations unies sur les changements climatiques. In Sixième communication nationale de la France à la convention-cadre des nations unies sur les changements climatiques, 279p. Paris.

*N°3 . Collective transports on exclusively dedicated grounds.*

Policy area.

transport

Policy level.

National, regional, local

Policy sector.

Infrastructures, transport equipment

Policy actor.

Shared responsibility between different territorial levels. collective Local transport managers

Policy strategy.

Land-use, infrastructures...

Policy measures.

The Article 13 of Law No. 2009-967 of 3 August 2009 plans a development program transport in exclusively dedicated sites to bring these to 1 800 km outside the Ile-de-France (against 329 km in 2008)

Policy stage.

Three calls for projects addressing the transport authorities with metro, tram or fast bus projects (BRT) were launched in 2008, 2011 and 2013. During the first two calls for proposals, 130 projects were selected (1 new line and 2 extensions of metro lines, 26 new lines and 23 extensions of tram lines, 4 franco-swiss border\_crossing tramlines, 63 BRT projects, 1 funicular, and 2 river shuttles) for a total amount of € 13 billion of public investment out of which € 1.4 billion in government subsidies. The third call for projects, the results of which were presented in December 2014, has selected 99 projects including 4 metros, 15 trams, 4 cable or funicular lines, 3 transport lines by sea, 6 bike parks, 54 BRT and 13 sustainable mobility projects (enhanced multimodality, ticketing, network reorganization, combination of different modes of transport ...). The projects selected represent € 5.2 billion of public investment, including 450 million of state grants.

Anticipated effect on household consumption.

Modal transfer for urban transport

Actual effect on greenhouse gas emissions.

Under the conditions that the projects for which funding is provided will be finished in 2020 the estimated emissions gains are as follows:

	Gain annuel en MtCO <sub>2e</sub> des TCSP financés dans le cadre des 2 premiers appels à projets	Gain annuel en MtCO <sub>2e</sub> - Incluant le 3ème appel à projets
2020	0,20	0,34
2025	0,20	0,34
2030	0,20	0,34
2035	0,20	0,34

Source:(Ministère de l'écologie du développement durable et de l'énergie, 2015)

Source

Ministère de l'écologie du développement durable et de l'énergie 2015. Rapport de la France en application de l'article 13.1 du règlement 525/2013 relatif à un mécanisme pour la surveillance et la déclaration des émissions de gaz à effet de serre.

*N°4. Cycling*

Policy area.

Transport

Policy level.

national, local

Policy sector.

Administration

Policy actor.

State, local authorities

Policy strategy.

incentives

Policy measures.

A plan including 25 measures, starting in 2014 comprises financial incentives to use the bike, developing parking spaces near housing, offices, train stations and help on the Internet facilitating the use of bicycles

Policy stage.

partly implemented

Anticipated effect on household consumption.

modal shift

Actual effect on greenhouse gas emissions.

Not assessed

Source:

<http://www.developpement-durable.gouv.fr/-Politique-du-velo,1776-.html>

<http://www.developpement-durable.gouv.fr/25-mesures-pour-encourager-le-velo.html>

*N°5 Improvement of the performances of light personal vehicles.*

Policy area.

transport

Policy level.

national

Policy sector.

Industrial policy

Policy actor.

Ministry of transport and the environment

Policy strategy.

Regulations.

Policy measures.

Regulation No 443/2009 requires the car industry to progressively lower CO<sub>2</sub> emissions from new vehicles to 130 gCO<sub>2</sub> / km by 2015. It also defines a target of 95 gCO<sub>2</sub> / km for 2020. Moreover, other measures have been implemented at the national and European Community level to encourage the purchase of the most efficient new vehicles in terms of energy consumption and of emissions of greenhouse gases, including:

- a CO<sub>2</sub> label for passenger cars, which requires the display of CO<sub>2</sub> emissions at the sale stage;
- the "environmental bonus-malus", set up in France in January 2008

Policy stage.

implemented

Anticipated effect on household consumption.

**Tableau 3. Emissions réelles de CO<sub>2</sub>/km des véhicules neufs jusqu'en 2035**

	Emissions réelles de CO <sub>2</sub> /km des véhicules neufs - Scénario de référence	Emissions réelles de CO <sub>2</sub> /km des véhicules neufs - Scénario de projet
2008	168,9	161,8
2009	168,6	155,6
2010	168,4	157,5
2011	168,2	158,1
2012	167,9	155,3
2013	167,6	152,2
2015	167,1	148,4
2020	165,5	137,5
2025	164,9	136,9
2030	164,2	136,4
2035	163,5	135,9

Actual effect on greenhouse gas emissions.

**Tableau 5. Gains annuels d'émissions de CO<sub>2</sub>**

	Gains annuels – MtCO <sub>2e</sub>
2020	5,4
2025	8,0
2030	9,8
2035	10,3

Source:(Ministère de l'écologie du développement durable et de l'énergie, 2015)

Source

Ministère de l'écologie du développement durable et de l'énergie 2015. Rapport de la France en application de l'article 13.1 du règlement 525/2013 relatif à un mécanisme pour la surveillance et la déclaration des émissions de gaz à effet de serre.

*N°6. Further speed limitations*

Policy area.

Transport

Policy level.

national,

Policy sector.

Administration

Policy actor.

State

Policy strategy.

Regulation

Policy measures.

ADEME has studied the impact in terms of energy consumption and emissions of further speed limitations on all types of roads

Policy stage.

Debated, under discussion.

Anticipated effect on household consumption.

Lowering energy use and emissions:

Actual effect on greenhouse gas emissions.

Anticipated effect:

- on motorways from 130 km/h to 120 km/h: 2 Mt CO<sub>2</sub>
- on high-speed roads from 110 km/h to 100 km/h: 750 000 t CO<sub>2</sub>
- on ordinary roads from 90 km/h to 80 km/h: 1,3 Mt CO<sub>2</sub>

Source:

<http://www.actu-environnement.com/ae/news/340.php4>

*N°7. Development of high-speed trains.*

Policy area.

transport

Policy level.

national

Policy sector.

land use planning (national scheme of transport infrastructure) and industrial policy

Policy actor.

Various ministries

Policy strategy.

Infrastructure development

Policy measures.

The report of the « Mobility 21 » (Mobilité 21) Commission published in June 2013 specifies the conditions of implementation of the National Scheme of Transport Infrastructure (SNIT). It predicts in particular the development of 1,400 km of high speed lines (LGV) by 2030.

Policy stage.

Starting to be implemented: extension of the high-speed line from Poitiers to Bordeaux. This policy is questioned by budgetary constraints and some projects might be abandoned. Following the conclusions of the Mobility 21 committee, the development objectives of high speed railway line infrastructures were revised downwards by comparison with the construction programme of 2,000 km of additional lines by 2020. The initial programme for an additional 2,500 km was also postponed. Priority has been given to the upgrading of the existing network and to allocate additional resources to the improvement of daily trains

Anticipated effect on household consumption.

The new high-speed lines are expected to contribute to a growth of rail traffic of 7 billion passenger kilometres per year and to induce a decline off the road traffic of light vehicles of

2 billion passenger kilometres per year as well as a decline of air traffic of 2.3 billion passenger kilometres in 2030.

Actual effect on greenhouse gas emissions.

The new high-speed lines are expected to yield a reduction of 0,48 MtCO<sub>2</sub> each year in 2030

Source

Ministère de l'écologie du développement durable et de l'énergie 2015. Rapport de la France en application de l'article 13.1 du règlement 525/2013 relatif à un mécanisme pour la surveillance et la déclaration des émissions de gaz à effet de serre. In Rapport de la France en application de l'article 13.1 du règlement 525/2013 relatif à un mécanisme pour la surveillance et la déclaration des émissions de gaz à effet de serre. Paris.

Ministère de l'Écologie du Développement durable et de l'Énergie 2013. Sixième communication nationale de la France à la convention-cadre des nations unies sur les changements climatiques. In Sixième communication nationale de la France à la convention-cadre des nations unies sur les changements climatiques, 279p. Paris.

*N°8. Help to car sharing*

Policy area.

Transport

Policy level.

local

Policy sector.

Infrastructures, administration

Policy actor.

Communauté du Pays d'Aix

Policy strategy.

incentivisation

Policy measures.

Developing secure parking spots for car sharing, mainly near high traffic roads. Privileging parking for carsharers. Facilitating car sharing for travel from home to work. Creating a car sharing system to bring children to school. Experimentation of short distance and casual car sharing

Policy stage.

partly implemented

Anticipated effect on household consumption.

Reducing the use of cars

Actual effect on greenhouse gas emissions.

Saving 115 796 tCO<sub>2</sub>-e

Source:

Métropole Aix Marseille Provence 2016. Mobilité métropolitaine: l'agenda.

<http://www.agglo-paysdaix.fr/environnement/climat-energie/pcet-plan-climat-energie.html>

*N°9. Facilitating locally the use of active modes of transport*

Policy area.

Transport

Policy level.

local

Policy sector.

Policy actor.

Communauté du Pays d'Aix

Policy strategy.

Infrastructures, subsidies

Policy measures.

Funds for local communities (communes) to help creating cycling infrastructures (lanes, parking spots...). Subsidies to help individuals and communes to buy electric bikes. Helping the creation of businesses for long and medium term bicycle renting.

Subsidies for cycling associations.

Reducing the use of cars in urban centres

Creation of a specific bike travel calculator

Helping the organisation of "walking to school" in several communes

Policy stage.

partly implemented

Anticipated effect on household consumption.

Reducing the use of car transport

Actual effect on greenhouse gas emissions.

Saving 28 866T CO<sub>2</sub>-e

Source:

<http://www.agglo-paysdaix.fr/environnement/climat-energie/pcet-plan-climat-energie.html>

Métropole Aix Marseille Provence 2016. Mobilité métropolitaine: l'agenda. In Mobilité métropolitaine: l'agenda.

*N°10. Decarbonising individual transport*

Policy area.

Transport

Policy level.

local

Policy sector.

Policy actor.

Communauté du Pays d'Aix

Policy strategy.

incentives

Policy measures.

The Communauté du Pays d'Aix helps communes to create infrastructures to refuel individual electric vehicles. (Refuelling is free). It also helps the acquisition of such vehicles.

Policy stage.

implemented

Anticipated effect on household consumption.

modal shift

Actual effect on greenhouse gas emissions.

Saving 12 284 T CO<sub>2</sub>-e

Source:

<http://www.agglo-paysdaix.fr/environnement/climat-energie/pcet-plan-climat-energie.html>

## Other

*N°1. National action plan for renewable electricity.*

Policy area.

Transport, residential, etc.

Policy level.

national

Policy sector.

Energy policy

Policy actor.

Various ministries

Policy strategy.

The strategy aims at inflecting energy sources towards lower carbon

Policy measures.

The National Action Plan for Renewable Energy was transmitted by France to the European Commission in August 2010. The plan details the main support measures for renewable energy, to increase the share of renewables in final energy consumption from 10% in 2005 to 23% in 2020. Regarding renewable electricity, the main development tools are buying rates and tenders. The tariffs cover various renewable electricity sources: hydro, geothermal, wind, photovoltaic, cogeneration, household waste, biomass, biogas, anaerobic digestion. They exist for most of them since 2001. The government also has a policy to support wind power in particular through the simplification of authorisations.

Policy stage.

Implemented

Anticipated effect on household consumption.

Allowing households to use decarbonised energy sources . Some incentives to autonomous energy production.

Actual effect on greenhouse gas emissions.

Emissions avoided due to the renewable energy plan after 2010 (MtCO<sub>2</sub>e/an)

2015	2020	2025	2030	2035
1,1	3,0	5,6	8,3	10,6

Source:(Ministère de l'écologie du développement durable et de l'énergie, 2015)

Source

Ministère de l'écologie du développement durable et de l'énergie 2015. Rapport de la France en application de l'article 13.1 du règlement 525/2013 relatif à un mécanisme pour la surveillance et la déclaration des émissions de gaz à effet de serre.

*N°2 creating a brand for the territory*Policy area.

others

Policy level.

local

Policy sector.

Administration

Policy actor.

Communauté du Pays d'Aix

Policy strategy.

communication

Policy measures.

Creating a territorial band to help consumers distinguish locally made products and privilege short commercial circuits.

Policy stage.

implemented

Anticipated effect on household consumption.

Help to buy local products

Actual effect on greenhouse gas emissions.

The effect on greenhouse gas emissions is rather uncertain (this is discussed in other policy sheets).

Source:

<http://www.agglo-paysdaix.fr/environnement/climat-energie/pcet-plan-climat-energie.html>

### *N°3. Research strategies.*

#### Policy area.

Transversal

#### Policy level.

national

#### Policy sector.

Recherche

#### Policy actor.

Government, customs offices

#### Policy strategy.

The national research strategy, following the law of 22 July 2013, is built around the answers to bring to ten major societal challenges, one of which concerns precisely "a clean, safe and efficient energy" and another "sustainable urban transport systems". The National Research Strategy for the energy sector (SNRE) which had been determined previously will constitute its "Energy" component (Article 183 of the transition law towards Green Growth), which should be adopted in 2016.

#### Policy measures.

At the operational level, the National Research Agency (ANR) supports upstream research (still not mature technologies, for the two challenges already mentioned (Energy and Transport and Sustainable Urban Systems). Furthermore, the ANR has identified an axis called "rupture Concepts" to accelerate the penetration of new technologies with a high potential. To complete this action, ANR supports more applied research and innovation through investments into demonstrators since 2012. A second phase of demonstrative actions was launched in 2014, financing «transport and vehicles of the future» as well as "demonstrators for the ecological and in energetic transition". These actions are carried out by ADEME that works also, through its own research program on the emergence and development of a national supply of technology and services answering the energy challenges to achieve the goal of a low carbon society adapted to climate change.

#### Policy stage.

In implementation

#### Anticipated effect on household consumption.

Through innovation, offering consumers the services and products of a low carbon society

#### Actual effect on greenhouse gas emissions.

Unknown

#### Source

Ministère de l'écologie et du développement durable 2015. Stratégie nationale bas carbone. In Stratégie nationale bas carbone. Paris.

*N°4 Energy-saving certificates.*

Policy area.

Other

Policy level.

National

Policy sector.

Fiscal

Policy actor.

Ministry of finance, energy providers

Policy strategy.

Regulation

Policy measures.

Energy saving certificates reflect a multi-year obligation to achieve energy savings required by the government to energy suppliers. The latter are encouraged to promote energy efficiency among all final consumers, including their customers (households, local and professional communities). Energy efficiency certificates are in particular awarded to consumers who contributed to the realization of energy saving operations or, in some cases to the development of thermal renewable energy. At the end of the period, energy providers must prove the fulfillment of their obligations by holding a certificate equivalent to those obligations; otherwise they are fined two cents per kilowatt hour missing,

Policy stage.

This policy was initiated in 2006 with the objective to involve in three years 54 terawatt hours. After a transitional period the law of 12 July 2010 on the national commitment to the environment extended the measure for a period of three years, with a target of 340 terawatt-hours for all sellers of all energy sources producing heat and of 120 terawatt-hours for automotive fuel sellers

Anticipated effect on household consumption.

This measure aims at rewarding households making energy choices with a low carbon content

Actual effect on greenhouse gas emissions.

	Période de distribution	TWh <sub>cumac</sub> distribués	Réduction de GES grâce aux CEE distribués en MtCO <sub>2e</sub> /an (sans analyse du recouvrement avec d'autres mesures)				
			31/12/2014 (ex-post)	2020	2025	2030	2035
Ex-post	2006-2014	744	11,9	11,2	9,2	5,5	3,4
Ex-ante AME	2006-2017	1214		18,6	16,5	11,4	6,8

This table does not take into account the double accounts that can occur with other measures such as the zero interest loans or other measures encouraging energy efficiency in transports

Source:(Ministère de l'écologie du développement durable et de l'énergie, 2015; Ministère de l'Écologie du Développement durable et de l'Énergie, 2013)

Source

Ministère de l'écologie du développement durable et de l'énergie 2015. Rapport de la France en application de l'article 13.1 du règlement 525/2013 relatif à un mécanisme pour la surveillance et la déclaration des émissions de gaz à effet de serre. In Rapport de la France en application de l'article 13.1 du règlement 525/2013 relatif à un mécanisme pour la surveillance et la déclaration des émissions de gaz à effet de serre. Paris.

Ministère de l'Écologie du Développement durable et de l'Énergie 2013. Sixième communication nationale de la France à la convention-cadre des nations unies sur les changements climatiques. In Sixième communication nationale de la France à la convention-cadre des nations unies sur les changements climatiques, 279p. Paris.

*N°5. Identifying the share of carbon taxation in national taxes on the consumption of energy*Policy area.

Deals with carbonated energy in the different sectors (residential, transports ...)

Policy level.

national

Policy sector.

Fiscal

Policy actor.

Ministry of Finance

Policy strategy.

Regulations a carbon tax similar to the one that exists in Sweden failed on two grounds. It was rejected both by public opinion and on legal grounds (invalidated by the conseil d'État) because of the discriminations facing taxes it introduced between citizens (numerous exemptions...). The measure which is described here thus appears as a kind of substitute, with probably the objective in the future to transform it into a real carbon tax.

Policy measures.

Since 2014, France introduced a carbon component in the taxation of fossil fuels: it is not a carbon tax as such but a component inserted in 2014 in the existing taxation (up to €7 / tCO<sub>2</sub>), increased in 2015 to (€14.5) and should reach €22 in 2016. Note that the law on the « energy transition to green growth » plans to increase this component to €56 in 2020 and €100 in 2030 (Article 1, VIII). Energy intensive industries (Article 17 of Directive 2003/96 / EC) under the European Trading System (EUTS) are not subject to any tax increase related to this carbon component.

Policy stage.

Implementing and in progress.

Anticipated effect on household consumption.

This carbon taxation is currently hidden within the global taxation of energy. The latter contributes to the increase of energy costs (gas and fuel in services and housing, gasoline and diesel in transportation...). Nevertheless the fact that it is not clearly displayed does not allow consumers to make the link with carbon emissions.

Actual effect on greenhouse gas emissions.

The life-cycle impact including upstream production and combustion of energy products is expected to be as follows.

Emissions évitées en MtCO2e (ex-ante)	2015	2020	2025	2030	2035
Transports	2,8	1,4	1,4	1,3	1,4
Résidentiel – tertiaire	1,6	2,4	2,2	2,0	1,9
<b>Total</b>	4,4	3,8	3,6	3,4	3,2

Source:(Ministère de l'écologie du développement durable et de l'énergie, 2015)

Source

Ministère de l'écologie du développement durable et de l'énergie 2015. Rapport de la France en application de l'article 13.1 du règlement 525/2013 relatif à un mécanisme pour la surveillance et la déclaration des émissions de gaz à effet de serre.

*N°6. Lowering VAT on repair activities.*

Policy area.

Transversal

Policy level.

National,

Policy sector.

Fiscal

Policy actor.

Ministry of finance

Policy strategy.

Lowering VAT on services and repair activities would encourage to lengthen the life of equipments

Policy measures.

This measure would have to be approved at the European level

Policy stage.

Suggestion of an official think tank

Anticipated effect on household consumption.

Increase in the length of life of products and equipments

Actual effect on greenhouse gas emissions.

Not assessed

Source

Centre d'analyse stratégique 2011. Pour une consommation durable. In Pour une consommation durable, Rapports et documents, 185. Paris: Centre d'analyse stratégique.

*N°7. Research strategies.*Policy area.

Transversal

Policy level.

national

Policy sector.

Recherche

Policy actor.

Government, customs offices

Policy strategy.

The national research strategy, following the law of 22 July 2013, is built around the answers to bring to ten major societal challenges, one of which concerns precisely "a clean, safe and efficient energy" and another "sustainable urban transport systems". The National Research Strategy for the energy sector (SNRE) which had been determined previously will constitute its "Energy" component (Article 183 of the transition law towards Green Growth), which should be adopted in 2016.

Policy measures.

At the operational level, the National Research Agency (ANR) supports upstream research (still not mature technologies, for the two challenges already mentioned (Energy and Transport and Sustainable Urban Systems). Furthermore, the ANR has identified an axis called "rupture Concepts" to accelerate the penetration of new technologies with a high potential.

To complete this action, ANR supports more applied research and innovation through investments into demonstrators since 2012. A second phase of demonstrative actions was launched in 2014, financing « transport and vehicles of the future » as well as "demonstrators for the ecological and in energetic transition". These actions are carried out by ADEME that works also, through its own research program on the emergence and development of a national supply of technology and services answering the energy challenges to achieve the goal of a low carbon society adapted to climate change.

Policy stage.

In implementation

Anticipated effect on household consumption.

Through innovation, offering consumers the services and products of a low carbon society

Actual effect on greenhouse gas emissions.

Unknown

Source

Ministère de l'écologie et du développement durable 2015. Stratégie nationale bas carbone. In Stratégie nationale bas carbone. Paris.

*N°8. Controlling the profusion of labels.*

Policy area.

Transversal

Policy level.

national

Policy sector.

Regulation

Policy actor.

Government, Parliament, administration

Policy strategy.

At a time when private labels and logos multiply and put forward the alleged social or environmental qualities of a product, one of the laws of the « Grenelle of the environment 2 » affirms the consumers rights "to have a environmentally sincere, objective and complete information concerning the overall characteristics of the product and packaging "

Policy measures.

The National Strategy for sustainable development sets the goal of doubling the sales volumes of products that have an eco-label (NF Environment and European Ecolabel).

Policy stage.

In July 2006, Tesco, a major distribution firm in the UK has been the first to set up a carbon label for its food products (70,000 references). In France, major commercial firms offer since 2008 either a carbon labeling on products (Casino, 600 references) or display an average carbon content of the receipt (Leclerc). Carbon labelling, one of the flagship measures of the Grenelle II, saw its implementation delayed. The first objective is to assess the carbon footprint throughout the life-cycle as well as other criteria such as water consumption or the degree of recycling. But the collection of reliable data on CO2 emissions at each stage is difficult and expensive, particularly with an internationalised production line. The use of generic data may weaken consumer confidence, or result in average data that do not allow to differentiate products. The second objective is to create a technical benchmarking tool for companies, so that they can reliably assess and reduce their environmental impact.

Anticipated effect on household consumption.

Labels seek to provide consumers with accurate information on the environmental and social characteristics of products, offering new choice criteria besides the usual ones. In doing so, they are expected to improve the competitive market dynamics. Official labeling changes unverifiable qualities (belief attributes) into attributes reliable for consumers, and thus solves the problems of asymmetric information. For a consumer, it avoids to purchase a good or service (usually cheaper) that does not meet his preferences by simple lack of information (on the use of pesticides, child labor the production process, etc.).

Actual effect on greenhouse gas emissions.

Unknown

Source

Centre d'analyse stratégique 2011. Pour une consommation durable. In Pour une consommation durable, Rapports et documents, 185. Paris: Centre d'analyse stratégique.

*N°9. Empowerment of consumer associations*Policy area.

Others

Policy level.

national,

Policy sector.

Administration

Policy actor.

State, NGOs

Policy strategy.

Law, subsidies

Policy measures.

Consumers associations can be certified by the administration which the answers their ability to act on legal grounds.

Policy stage.

Implemented

Anticipated effect on household consumption.

Possibility to act against practices which are detrimental to the environment.

Actual effect on greenhouse gas emissions.Source:

<http://www.economie.gouv.fr/dgccrf/Les-associations-de-consommateurs>

*N°10. Consumers information*Policy area.

Others

Policy level.

national,

Policy sector.

Information

Policy actor.

State environmental agency (ADEME)

Policy strategy.

Information

Policy measures.

On its website the state environmental agency gives access to a certain number of leaflets or brochures of advice to consumers. These do not appear to deal directly with the greenhouse gas emissions of consumers, though they might do so indirectly

Policy stage.

Implemented

Anticipated effect on household consumption.

Not assessed

Actual effect on greenhouse gas emissions.

Not assessed

Source:

<http://www.ademe.fr/particuliers-eco-citoyens/achats>

*N°11. Ban on single use plastic bags*

Policy area.

Others

Policy level.

national,

Policy sector.

Regulation

Policy actor.

State

Policy strategy.

Regulation

Policy measures.

Single use plastic bags (thickness under 50 microns) delivered at cash desks are forbidden from July 2016, be they sold or free (including bio degradable bags).

From the 1 January 2017, this ban is extended to:

- all similar bags notably those delivered at counters,
- plastic bags used for sending press and advertising

Policy stage.

In implementation

Anticipated effect on household consumption.

Not assessed

Actual effect on greenhouse gas emissions.

Not assessed

Source:

<https://www.service-public.fr/professionnels-entreprises/actualites/008384>

*N°12. Waste policy.*

Policy area.

Transversal

Policy level.

national and local

Policy sector.

Regulation, incentives,

Policy actor.

Parliament, national and local Administration

Policy strategy.

French and European law draw a hierarchy of actions to be led: upstream reductions of waste, valuation (recycling, re-use...), dumping or incineration of what is left. Some of these actions imply consumers (re-use, repair...)

Policy measures.

A global target was fixed by the law of November 19, 2008: reuse or recycling by 2020 of 50% of household waste. The two laws following the "Grenelle de l'environnement" detailed this target:

Grenelle 1 law

- for 2012, valuing of 35% of household waste,
- for 2015: valuing of 45% of household waste, decreased by 7% of the waste per individual, decrease of 15% for dumped and incinerated waste.

Grenelle 2 law

- limitation of done and incinerated waste to 60% of the quantities produced
- enhanced responsibilities for the producer
- adjustment of the financial responsibilities of industries according to their environmental impact
- compulsory sorting of waste for major industrial producers
- possibility of experimenting fiscal incentives on the local scale (for three years)

Policy stage.

Each French consumer generates 470 kg of waste (2010). A slight decoupling with consumption occurred since 2004, yet the generation of waste grows 6 times faster than the population

Anticipated effect on household consumption.

According to ADEME (national agency for the environment, energy and waste), each French citizen could lower his generation of waste by 150 kg per year through compost, less wasting, lowering the consumption of paper and a better sorting of waste.

Actual effect on greenhouse gas emissions.

Unknown

Source

Centre d'analyse stratégique 2011. Pour une consommation durable. In Pour une consommation durable, Rapports et documents, 185. Paris: Centre d'analyse stratégique.

*N°13. Differentiation of the collect tax on household waste according to quantities.*

Policy area.

Transversal

Policy level.

Local

Policy sector.

Local tax system

Policy actor.

Local communities

Policy strategy.

A price signal is expected to contribute to lower household waste production and favour recycling. Experimenting a differentiation of local taxes on household waste collection according to quantities has been rendered possible by the Grenelle del'environnement

Policy measures.

The tax on municipal waste for households will depend on the quantity of waste generated, controlled through a weighting at the moment when it is collected, as it has been put in place by a few pioneering municipalities for around 20 years

Policy stage.

Occasionally applied and largely experimental

Anticipated effect on household consumption.

According to ADEME (national agency for the environment, energy and waste), each French citizen could lower his generation of waste by 150 kg per year through compost, less wasting, lowering the consumption of paper and a better sorting of waste.

Actual effect on greenhouse gas emissions.

Unknown

Source

Centre d'analyse stratégique 2011. Pour une consommation durable. In Pour une consommation durable, Rapports et documents, 185. Paris: Centre d'analyse stratégique.

*N°14. Taxation of ephemeral products.*

Policy area.

Transversal

Policy level.

National

Policy sector.

Fiscal

Policy actor.

Ministry of finance

Policy strategy.

Throwaway and one use products generate high quantities of waste and could be taxed according to their environmental footprint after a life-cycle analysis. The taxes collected could be used to favour eco-conception

Policy measures.

Nil

Policy stage.

Suggestion from an official advisory board

Anticipated effect on household consumption.

According to ADEME (national agency for the environment, energy and waste), each French citizen could lower his generation of waste by 150 kg per year through compost, less wasting, lowering the consumption of paper and a better sorting of waste.

Actual effect on greenhouse gas emissions.

Unknown

Source

Centre d'analyse stratégique 2011. Pour une consommation durable. In Pour une consommation durable, Rapports et documents, 185. Paris: Centre d'analyse stratégique.

*N°15. Personal carbon footprint calculator.*

Policy area.

Transversal

Policy level.

National,

Policy sector.

information,

Policy actor.

Ademe (governmental agency for waste, environment and energy)

Policy strategy.

Raising awareness

Policy measures.

*Bilan Carbone®* is a methodology developed by the French Energy Agency (ADEME) to assess the green house gases emitted by different kinds of entities: tertiary and industrial businesses, administrations, communities and territories. The tool *Bilan Carbone Personnel®* (BCP) was specifically developed to calculate the carbon footprint of individuals.

The carbon footprint assessed by BCP relates to individual persons. Shared commodities such as the occupancy of an accommodation or the usage of a vehicle are consequently divided by the number of users. In addition, the emissions that are taken into account are

only those that refer to personal lifestyles. In other words, the emissions due to the professional occupation (business trips, etc.) and those related to the use of public goods and services (road infrastructures, healthcare facilities, etc.) are not included. Last but not least, BCP follows a life-cycle approach.

BCP has the form of an online questionnaire made of about 75 questions evenly distributed into four main categories.

1. **Lodging:** space heating, domestic hot water, cooking, electric usages, construction, equipment, furnishing, interior decoration and refurbishment.
2. **Transports:** by car, two-wheelers, plane and public transports (electric and fossil-fuel).
3. **Alimentation:** meat and fish, dairy products, fruit and vegetables, drinks and alcoholic beverages.
4. **Consumption of goods and services:** clothing, computer hardware, electronic devices and other consumables, household-waste sorting, expenditures in services (insurances, telephony...) and leisure (holiday stays...).

In average, these four consumption areas account for proportions of carbon emissions that are roughly similar.

Policy stage.

Implemented

Anticipated effect on household consumption.

Incentive to take greenhouse gas friendly decisions

Actual effect on greenhouse gas emissions.

Not assessed

Source

Centre d'analyse stratégique 2011. Pour une consommation durable. In Pour une consommation durable, Rapports et documents, 185. Paris: Centre d'analyse stratégique.  
Huber, A., S. Girard and Y. Thomas 2011. On the Way to a Post-carbon Society: Assessing the Personal Carbon Footprint of French Social Milieux to Develop Targeted Intervention Strategies. In On the Way to a Post-carbon Society: Assessing the Personal Carbon Footprint of French Social Milieux to Develop Targeted Intervention Strategies: ECEEE.

*N°16. Public purchase strategy.*

Policy area.

Transversal

Policy level.

National,

Policy sector.

Public policies

Policy actor.

Administration

Policy strategy.

Setting an example through public purchase

Policy measures.

The strategy set by the Grenelle de l'environnement has been translated into a national plan of public sustainable purchase. Three axis are privileged:

- a greening of a common purchase,
- fostering eco-responsible attitudes among civil servants,
- the recognition of a social responsibility on the part of the state

Policy stage.

Implemented

Anticipated effect on household consumption.

By setting an example, the administration will show the public the possibilities of more responsible behaviours facing greenhouse gas emissions.

Actual effect on greenhouse gas emissions.

Not assessed

Source

Centre d'analyse stratégique 2011. Pour une consommation durable. In Pour une consommation durable, Rapports et documents, 185. Paris: Centre d'analyse stratégique.

*N°17. « Made in France » policy.*

Policy area.

Transversal

Policy level.

national

Policy sector.

Public funds, fiscal measures

Policy actor.

Parliament, administration

Policy strategy.

The French government has launched a policy for a relocation of production in France trying to take advantage of « economic patriotism » in the population. It focuses on some industrial sectors, with for idea to give an advantage to products made in France.

Policy measures.

Tax credit to increase the competitiveness of French companies. This tax credit is not conditioned to any environmental or social criteria.

Implementation of a software (« Colbert 2.0») allowing expatriate companies to calculate the benefits of a relocation

Policy stage.

implemented

Anticipated effect on household consumption.

Economic patriotism is seen as a lever to counter offshoring and encourage the relocation of certain activities gone abroad. This affects many sectors, beyond food production for which this kind of talk is firmly rooted. Naturally between discourse and practice there is a gap comparable to that which is observed for environmental issues

Actual effect on greenhouse gas emissions.

Not assessed

Source

Réseau Action Climat 2014. Réduire les émissions liées à la consommation. quelles politiques publiques? In Réduire les émissions liées à la consommation. quelles politiques publiques?

*N°18. Training professionals facing new qualitative demands and risks linked to climate change*Policy area.

Housing

Policy level.

local

Policy sector.

Administration

Policy actor.

Communauté du Pays d'Aix

Policy strategy.

incentives

Policy measures.

On-site training of local contractors and workers on specific themes related to thermal regulations (thermal bridges etc). Disseminating knowledge on local and bio sourced materials.

Policy stage.

implemented

Anticipated effect on household consumption.

Less emitting housing

Actual effect on greenhouse gas emissions.

Not assessed

Source:

<http://www.agglo-paysdaix.fr/environnement/climat-energie/pcet-plan-climat-energie.html>

*N°19 Creating a brand for the territory*Policy area.

others

Policy level.

local

Policy sector.

Administration

Policy actor.

Communauté du Pays d'Aix

Policy strategy.

communication

Policy measures.

Creating a territorial band to help consumers distinguish locally made products and privilege short commercial circuits.

Policy stage.

implemented

Anticipated effect on household consumption.

Help to buy local products

Actual effect on greenhouse gas emissions.

The effect on greenhouse gas emissions is rather uncertain (this is discussed in other policy sheets).

Source:

<http://www.agglo-paysdaix.fr/environnement/climat-energie/pcet-plan-climat-energie.html>

*N°20. Organizing climate plans for families, businesses and associations*Policy area.

others

Policy level.

local

Policy sector.

Administration

Policy actor.

Communauté du Pays d'Aix

Policy strategy.

Communication

Policy measures.

Setting up programs in which citizens are accompanied by a coach to reduce their emissions

Policy stage.  
implemented

Anticipated effect on household consumption.  
Not assessed

Actual effect on greenhouse gas emissions.  
Not assessed

Source:

<http://www.agglo-paysdaix.fr/environnement/climat-energie/pcet-plan-climat-energie.html>

## Attachment 5: Coding of the policies

Country/Consumption category/policy title	Policy measure	GHG reduction mechanism	Level of government	GHG emissions
<b>Germany: Food</b>				
1. Federal Programme for Sustainable Consumption	Information	Substitution	National	Direct
2. Organic Farming Website	Information	Substitution	National	Direct
3. Organic Farming Website Baden-Wurttemberg	Information	Substitution	Regional	Direct
4. Federal Programme for Organic Agriculture and Other Forms of Sustainable Agriculture	Economic support	Substitution	National	Indirect
5. Subsidy Programme 'Environmental and Consumer Protection'	Economic support	Substitution	National	Indirect
<b>Germany: Housing</b>				
1. On-Site Energy Advice	Information	Efficiency	Local	Direct
2. Energy Performance Certificate	Regulation	Efficiency	Local	Direct
3. CHP-Funding Programme Mannheim	Economic support	Efficiency	Local	Direct
4. Funding for Hydraulic-Heating Systems Mannheim	Economic support	Efficiency	Local	Direct
5. Energy Labelling Act	Regulation	Efficiency	National	Direct
6. Energy-Efficient Refurbishment and Construction Programme	Regulation	Efficiency	National	Direct
7. Ordinance on Small and Medium Furnances	Regulation	Reduction	National	Direct
8. Proof of Origin Ordinance	Regulation	Substitution	National	Indirect
9. Energy-Efficient Refurbishment Programme Mannheim	Economic support	Efficiency	Local	Mixed
10. Energy-Efficient Refurbishment Programme for the City Centre of Mannheim	Economic support	Efficiency	Local	Mixed
11. Special "Energy and Climate Fund" Act	Economic support	Efficiency	National	Mixed
12. Energy Taxation Act	Economic support	Efficiency	National	Mixed
13. Energy-Efficiency Advice Portal	Information	Efficiency	National	Mixed
14. Energy Saving Act	Regulation	Efficiency	National	Mixed
15. Energy-Efficient Refurbishment Credit Programme	Economic support	Efficiency	National	Mixed
16. Directive to Fund Heating Systems Optimisation	Economic support	Efficiency	National	Mixed
17. Climate Friendly Housing Information Portal	Information	Mixed	National	Mixed
18. Renewable Energy Sources Act	Regulation	Substitution	National	Mixed
19. Directive for funding of measures for the use of renewable Energy sources in the Heating market	Economic support	Substitution	National	Mixed
20. Energy-Efficient Refurbishment and Construction Credit Programme Baden-Wurttemberg	Economic support	Efficiency	Regional	Mixed
21. Old-Building Refurbishment Portal Baden-Wurttemberg	Economic support	Efficiency	Regional	Mixed
22. Credit to Fund Heating Systems Optimisation Baden-Wurttemberg	Economic support	Efficiency	Regional	Mixed
23. Climate Protection and Energy Agency Baden-Wurttemberg	Information	Mixed	Regional	Mixed
24. Renewable Energy Heating Systems Act	Regulation	Substitution	Regional	Mixed
<b>Germany: other</b>				
1. Landfill Ordinance	Regulation	Reduction	Local	Direct
2. Climate-Savings Book Mannheim	Information	Substitution	Local	Direct

3.	CO2-Calculator	Information	Reduction	National	Direct
4.	Circular Economy Act	Regulation	Reduction	National	Direct
5.	Energy Consumption Labeling Act	Regulation	Substitution	National	Direct
6.	Packaging Ordinance	Regulation	Substitution	National	Direct
7.	Energy-Using Products Act	Regulation	Reduction	Local	Direct
8.	Climate Check Baden-Wurttemberg	Information	Reduction	Regional	Direct
9.	CO2-Calculator Baden-Wurttemberg	Information	Reduction	Regional	Direct
10.	Information Platform of the State Ministry for Environment, Climate, and Energy Business Baden-Wurttemberg	Information	Reduction	Regional	Direct
11.	Energ Transition Portal Baden-Wurttemberg	Information	Reduction	Regional	Direct
12.	Climate-Protection Concept 2020 Mannheim	Information	Efficiency	Local	Mixed
13.	Website for Product Labeling	Information	Reduction	National	Mixed
14.	Federal Strategy for Sustainability 2016	Information	Reduction	National	Mixed
15.	German Council for Sustainable Development	Information	Reduction	National	Mixed
16.	Agency for Sustainable Resources	Information	Reduction	National	Mixed
17.	Research for Sustainable Development	Economic support	Reduction	National	Mixed
<b>Germany: transportation</b>					
1.	Get rid of Your Car	Economic support	Substitution	Local	Direct
2.	Air Transport Tax	Economic support	Mixed	National	Direct
3.	Motor Vehicle Taxation Act	Regulation	Mixed	National	Direct
4.	Federal Bicycle-Traffic Plan	Information	Substitution	National	Direct
5.	Bio Fuel Quota Act	Regulation	Substitution	National	Direct
6.	E-Mobility Act	Economic support	Substitution	National	Direct
7.	Ordinance on the Quality and Labeling of Fuels and Combustibles	Regulation	Efficiency	Regional	Direct
8.	Working Group of Bicycle-Friendly Communities in Baden-Wurttemberg	Information	Substitution	Regional	Direct
9.	State Bicycle Plan Baden-Wurttemberg	Information	Substitution	Regional	Direct
10.	Funding for Citizen Busses	Economic support	Substitution	Regional	Direct
11.	Funding for E-Busses and Hybrid-Busses	Economic support	Substitution	National	Indirect
12.	Information Portal on Sustainable Transportation	Information	Substitution	National	Mixed
13.	Federal Contest on Climate Protection through Bycycling	Economic support	Substitution	National	Mixed
14.	Federal Funding for the Improvement of Transportation in Communities	Economic support	Substitution	National	Mixed
15.	State Funding for the Improvement of Public Transportation in Communities	Economic support	Substitution	Regional	Mixed
<b>Norway: food</b>					
1.	A variety of Information measures supporting "local Food"	Information	Substitution	National	Mixed
2.	Container deposit on containers for drinks etc	Economic support	Efficiency	National	Indirect
3.	Economic support to marketing of Organic Food	Economic support	Substitution	National	Indirect
4.	Financial support for the establishment of "farmers market"	Economic support	Substitution	National	Mixed
5.	Info campaign on Organic Food	Information	Substitution	Regional	Indirect

6.	Promote sustainable diets through better dissemination of Information about the carbon footprints of different Foods	Information	Substitution	National	Mixed
7.	Regional environmental programme for agriculture in Hordaland 2013-16	Planning	Substitution	Regional	Indirect
8.	Sales law allowing for introducing tax on imported Food and on specific Foods (e.g. meat)	Regulation	Substitution	National	Mixed
9.	Voluntary labeling schemes of Organic Food ("Debio")	Information	Substitution	National	Indirect
Norway: housing					
1.	Ban on the use of oil furnaces as main source of Heating for Buildings by 00	Regulation	Substitution	National	Direct
2.	CO-Tax on mineral oil fuel for burners and furnaces	Tax	Substitution	National	Direct
3.	Energy labelling of Buildings	Regulation	Reduction	National	Mixed
4.	Enova – educational program for children	Information	Mixed	National	Indirect
5.	Enova – Information campaigns (diverse activities)	Information	Mixed	National	Mixed
6.	Enova - Public support for Energy efficiency solutions	Economic support	Efficiency	National	Mixed
7.	Enova - Public support for solar Energy in residential homes	Economic support	Substitution	National	Indirect
8.	State Housing Bank loans for building new residences with more stringent Energy requirements than current building Regulation	Economic support	Reduction	National	Direct
9.	Tax on electricity consumption	Tax	Reduction	National	Indirect
10.	TEKO: New requirements on passive house standards by 05 and further strengthened to almost zero-Energy level by 00	Regulation	Reduction	National	Indirect
11.	TEKO: Regulations on technical requirements for residential homes: compulsory connection to district Heating	Regulation	Substitution	National	Indirect
12.	TEKO: Regulations on technical requirements for residential homes: Energy efficiency	Regulation	Efficiency	National	Indirect
13.	The Energy act on informative billing	Regulation	Mixed	National	Indirect
Norway: other					
1.	Compulsory Information available on all electronic/electric products regarding how to dispose of Waste	Regulation	Efficiency	National	Indirect
2.	Distributors are obliged to accept battery Waste free of charge and to inform that Waste-batteries are to be managed as special Waste	Regulation	Efficiency	National	Mixed
3.	Distributors of household e-products and municipalities are obliged to accept cost-free delivery of household e-Waste	Regulation	Efficiency	National	Mixed
4.	Distributors of tires are obliged to accept Waste-tires free of charge and see to that these are recycled.	Regulation	Efficiency	National	Mixed
5.	Eco-labelling (svanemarket)	Information	Mixed	National	Mixed
6.	Facilitate and support arenas for second hand and exchange economies	Economic support	Reduction	Local	Indirect
7.	Flexible fee on Waste (less if less volume)	Tax	Reduction	Local	Indirect
8.	Flexible fee on Waste (less if recycled)	Tax	Efficiency	Local	Indirect
9.	Further develop nationwide-central to a resource centre for re-use and repairs	Economic support	Reduction	Local	Indirect
10.	Improve availability of infrastructure for delivering Waste	Physical	Efficiency	Local	Indirect
11.	Provide Information to users regarding recycling opportunities and the different Waste solutions available	Information	Efficiency	Local	Indirect
12.	Support local 'sharing-arrangements' for material and equipment	Economic support	Reduction	Local	Indirect

13.	Support local initiatives for repair-workshops	Economic support	Reduction	Local	Indirect
14.	<a href="http://www.klimaloftet.no">www.klimaloftet.no</a> (online information campaign)	Information	Mixed	National	Mixed
Norway: transportation					
1.	Apps and other information systems that simplify the use of different means of Transportation	Information	Substitution	Local	Direct
2.	CO2 tax on fossil fuel (exemption for international aviation and passenger boating)	Tax	Efficiency	National	Direct
3.	CO2-dependent registration tax for new passenger Cars	Tax	Efficiency	National	Direct
4.	Differentiated toll rings according to rush hour, number of passengers, emissions	Tax	Efficiency	Local	Direct
5.	Electric Cars/zero-emission Cars have access to bus lanes, free toll passage & free access to public parking and charging points	Regulation	Efficiency	National	Indirect
6.	Establish a new light-rail system	Physical	Substitution	Local	Mixed
7.	Establish new infrastructure for cycling and walking	Physical	Substitution	Local	Direct
8.	Establish new separate bus-lanes in existing roads	Physical	Substitution	Local	Direct
9.	Establish low-emission zones	Regulation	Reduction	Local	Direct
10.	Exemption of CO2 tax on fuel for domestic aviation if re-fuelling with biofuel Mixed in Norway	Economic support	Efficiency	National	Direct
11.	Increase capacity of train Transportation (e.g. double lanes etc)	Physical	Substitution	National	Direct
12.	Increase investments in bicycle lanes	Economic support	Substitution	National	Direct
13.	National grants for municipalities supporting an increased share of Public Transport & reduction in private car use	Economic support	Substitution	National	Direct
14.	Passenger tax on aviation	Tax	Reduction	National	Mixed
15.	Providing charging points and parking for EVs	Physical	Efficiency	Local	Indirect
16.	Reduce availability of parking	Regulation	Substitution	Local	Direct
17.	Reduce speed-limit in situations of high emissions	Regulation	Efficiency	Local	Direct
18.	Regulations obliging co-ordination of local landuse and transport planning	Regulation	Reduction	National	Direct
19.	Requirement of 3,5 % biofuels of fuel consumption in road transport	Regulation	Efficiency	National	Direct
20.	Road-tax exemption on biodiesel (-50% for biodiesel meeting the Sustainability criteria) and bioethanol (-100% for blends containing <50% bioethanol)	Tax	Efficiency	National	Direct
21.	Stimulate to carpooling	Economic support	Efficiency	Regional	Direct
22.	Support for zero/low-emission infrastructure development	Economic support	Efficiency	National	Mixed
23.	Tax-exemptions for small, zero- and low-emission Cars	Economic support	Efficiency	National	Mixed
24.	Economic incentive for scrapping Cars	Economic support	Efficiency	National	Indirect
France: food					
1.	Support to organic agriculture	Economic support	Substitution	Local	Direct
2.	Local commercial circuits	Economic support	Substitution	Local	Direct
3.	Local commercial circuits	Regulation	Substitution	Local	Direct
4.	Support to organic agriculture	Information	Substitution	Local	Direct
5.	Controls on Organic Food production	Regulation	Substitution	Local	Direct
6.	Agro environmental and climatic measures for Organic Food production	Economic support	Substitution	Local	Direct

7.	Favouring short-circuits	Information	Substitution	Local	Direct
France: housing					
8.	The 2012 thermal regulations	Regulation	Efficiency	National	Direct
9.	Periodical revision of building standards and regulations	Regulation	Efficiency	National	Direct
10.	checking and repairing Heating systems	Regulation	Efficiency	National	Direct
11.	Withdrawal of incandescent light bulbs	Regulation	Efficiency	National	Direct
12.	Energy labelling of dwellings	Information	Efficiency	National	Direct
13.	Remove barriers to Energy upgrading in collective housing	Regulation	Efficiency	National	Direct
14.	The heat fund	Economic support	Substitution	Local	Direct
15.	Climate and Energy in urban planning	Planning	Mixed	Local	Direct
16.	Education programs on low Energy for professionnals	Information	Efficiency	Local	Direct
17.	N°18 . Energy labels for appliances and vehicles	Information	Efficiency	National	Mixed
18.	Espaces info énergie (Energy information spots).	Information	Efficiency	Local	Direct
19.	Website for Energy offers.	Information	Efficiency	Local	Direct
20.	Energy retrofit "ambassadors"	Information	Efficiency	regional	Direct
21.	Mandatory Energy performance assessment.	Information	Efficiency	Local	Direct
22.	Zero rate loan ( <i>éco-prêt à taux zéro : eco-PTZ</i> )	Economic support	Efficiency	National	Direct
23.	Energy-saving certificates	Economic support	Mixed	Local	Mixed
24.	Identifying the share of carbon taxation in national taxes on the consumption of Energy	Tax	Mixed	National	Mixed
25.	Buildings tax exemption for Energy upgrading	Economic support	Mixed	National	Direct
26.	Tax credit for the Energy transition	Economic support	Mixed	National	Direct
27.	Lowering VAT on repair activities	Tax	Efficiency	National	Direct
28.	Subsidies for solar panels	Economic support	Substitution	National	Mixed
29.	Energy labelling of dwellings	Economic support	Efficiency	National	Direct
30.	Reduced VAT rate for renovation work	Tax	Efficiency	National	Direct
1.	Universal allowance for low income households	Economic support	Efficiency	National	Direct
2.	The 2012 thermal regulations	Regulation	Efficiency	National	Direct
3.	household Energy use advice	Information	Efficiency	National	Direct
4.	The heat fund	Economic support	Substitution	National	Direct
5.	Research strategies	Economic support	Substitution	National	Direct
6.	National action plan for renewable electricity	Economic support	Substitution	National	Direct
7.	Refurbishing public housing	Information	Mixed	Local	Direct
8.	Refurbishing private housing	Economic support	Mixed	Local	Direct
9.	Substituting fossil energies by renewable energies in private housing	Economic support	Substitution	Local	Mixed
10.	Training professionals facing new qualitative demands and risks linked to climate change	Information	Efficiency	Local	Direct
11.	Promoting wood as a building resource and a fuel	Information	Substitution	Local	Mixed
France: other					

1.	Controlling the profusion of labels	Information	Substitution	National	Mixed
2.	Empowerment of consumers associations	Regulation	Mixed	National	Mixed
3.	Consumers information	Information	Mixed	Local	Mixed
4.	Ban on single use plastic bags	Regulation	Substitution	National	Mixed
5.	Waste policy	Regulation	Reduction	Local	Direct
6.	Differentiation of the collect tax on household Waste according to quantities	Regulation	Reduction	Local	Direct
7.	Taxation of ephemeral products	Regulation	Reduction	National	Mixed
8.	Personal carbon footprint calculator	Information	Mixed	National	Mixed
9.	Public purchase strategy	Economic support	Efficiency	National	Indirect
10.	«Made in France» policy	Economic support	Efficiency	National	Indirect
11.	creating a brand for the territory	Information	Substitution	Local	Mixed
12.	Organizing climate plans for families, businesses and associations	Information	Mixed	Local	Mixed
France: transportation					
1.	Climate and Energy in urban planning	Planning	Mixed	Local	Direct
2.	N°18 . Energy labels for appliances and vehicles	Information	Efficiency	National	Mixed
3.	Development of hybrid and electric vehicles	Economic support	Substitution	National	Direct
4.	Bonus malus taxation on new Cars	Tax	Efficiency	National	Direct
5.	improvement of the performances of light personal vehicles	Tax	Efficiency	National	Direct
6.	Development of hybrid and electric vehicles	Physical	Substitution	National	Direct
7.	Further speed limitations	Regulation	Efficiency	National	Direct
8.	improvement of the performances of light personal vehicles	Information	Efficiency	National	Direct
9.	Development of high-speed trains	Physical	Substitution	National	Direct
10.	Collective transports on exclusively dedicated grounds.	Physical	Substitution	National	Direct
11.	Cycling	Physical	Substitution	Local	Direct
12.	Identifying the share of carbon taxation in national taxes on the consumption of Energy	Tax	Mixed	National	Mixed
13.	National action plan for renewable electricity	Economic support	Substitution	National	Direct
14.	Energy-saving certificates	Economic support	Mixed	Local	Mixed
15.	Research strategies	Economic support	Substitution	National	Direct
16.	Help to car sharing	Physical	Efficiency	Local	Direct
17.	Facilitating locally the use of active modes of transport	Economic support	Substitution	Local	Direct
18.	Decarbonising individual transport	Economic support	Substitution	Local	Mixed
Sweden: food					
1.	National Food Agency recommendations for environmentally friendly diet	Information	Substitution	National	Mixed
2.	Food Waste reduction (national)	Information	Efficiency	National	Direct
3.	Food Waste reduction (Umeå)	Information	Efficiency	Local	Direct
4.	Climate friendly school meals Umeå	Information	Substitution	Local	Mixed
5.	Promotion of Organic Food production and consumption	Economic support	Substitution	National	Direct
6.	Container deposit for consumption-ready beverages	Regulation	Efficiency	National	Mixed
Sweden: housing					

1.	Carbon tax on fuel oil	Tax	Efficiency	National	Direct
2.	Municipal planning Umeå city center	Regulation	Substitution	Local	Direct
3.	Offer to rent or buy solar panels	Information	Substitution	Local	Direct
4.	Household Energy use monitoring (local)	Information	Reduction	Local	Direct
5.	Sustainable renovation and development of municipally-owned housing	Physical	Reduction	Local	Direct
6.	Guarantees of origin of electricity	Information	Substitution	National	Mixed
7.	Tax reduction for domestic services	Economic support	Efficiency	National	Not able to assess
8.	Mandatory Energy labelling of household appliances	Information	Efficiency	National	Mixed
9.	Building regulations, National Board of Housing, Building and Planning	Regulation	Efficiency	National	Direct
10.	Electricity certificates	Regulation	Efficiency	National	Direct
11.	Energy performance certificates	Regulation	Efficiency	National	Direct
12.	State subsidies for solar panels	Economic support	Substitution	National	Direct
13.	Tax reduction for microgeneration of renewable electricity	Tax	Substitution	National	Direct
14.	Energy and climate counseling	Economic support	Reduction	Local	Direct
15.	Household Energy use monitoring (national)	Information	Reduction	National	Direct
Sweden: other					
1.	Tax reduction to encourage repairs and recycling	Tax	Reduction	National	Indirect
2.	Tougher measures against false green claims	Information	Mixed	National	Not able to assess
3.	Businesses to report on Sustainability efforts	Regulation	Mixed	National	Not able to assess
4.	Producer responsibility for packaging Waste	Regulation	Efficiency	National	Not able to assess
5.	Producer responsibility for electronic Waste	Regulation	Efficiency	National	Not able to assess
6.	1Climate Ambassadors Västerbotten	Information	Mixed	Regional	Not able to assess
7.	1Ecolabelling (EU Flower and Nordic Swan)	Information	Substitution	National	Not able to assess
8.	Textile Waste management	Regulation	Reduction	National	Indirect
9.	Differentiated Waste collection fees for household Waste	Economic support	Efficiency	Local	Direct
10.	Environmental focus in schools	Information	Mixed	National	Not able to assess
11.	Stimulate eco-smart behavior patterns	Information	Mixed	National	Not able to assess
Sweden: transportation					
1.	Carbon tax on gasoline and diesel	Tax	Efficiency	National	Direct
2.	Bicycle strategy	Planning	Substitution	National	Direct
3.	Funding of local climate initiatives ("the Climate Leap")	Economic support	Substitution	National	Direct
4.	Bicycle Traffic Program	Physical	Substitution	Local	Direct
5.	Test travelers	Information	Substitution	Local	Direct
6.	Green Parking Payoff	Economic support	Substitution	Local	Direct
7.	Facilitation of multimodal transport	Physical	Substitution	Local	Direct
8.	Sustainable Urban Transport Plan	Physical	Substitution	Local	Direct
9.	Parking Strategy	Physical	Substitution	Local	Direct
10.	Fossile-fuel independent vehicle fleet	Planning	Substitution	National	Direct
11.	Public Transport Strategy	Physical	Substitution	Local	Direct

12.	Air Quality Demonstrators	Information	Substitution	Local	Direct
13.	Congestion tax (Stockholm and Gothenburg)	Tax	Reduction	Local	Direct
14.	Ring road Umeå	Physical	Reduction	Local	Direct
15.	New bicycle bridge over the Umeå River	Physical	Substitution	Local	Direct
16.	Electric buses	Physical	Substitution	Local	Direct
17.	The Fossil Free Sweden Initiative	Planning	Reduction	National	Not able to assess
18.	Regional transport strategy	Physical	Substitution	Regional	Not able to assess
19.	Tax credit for biofuels	Economic support	Substitution	National	Direct
20.	Bonus malus system for new light vehicles	Tax	Substitution	National	Direct
21.	Super-green car premium	Economic support	Substitution	National	Direct
22.	CO2-differentiated vehicle tax	Tax	Efficiency	National	Direct
23.	Support to Public Transport in urban areas	Economic support	Substitution	National	Direct
24.	Enhanced railroad maintenance	Physical	Substitution	National	Direct
25.	Environmental zone city center	Regulation	Reduction	Local	Direct
26.	Idling regulations	Regulation	Reduction	Local	Direct
27.	Electric vehicle charging infrastructure	Physical	Substitution	Local	Direct
28.	Information on driving speed and environment	Information	Efficiency	National	Direct