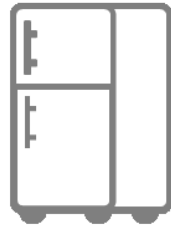
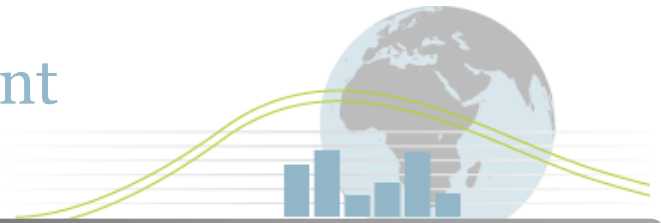


# 4E

## Mapping Document



Country:	Austria
Technology:	Domestic Cold Appliances
Sub Category:	Freezers and Refrigerator/ Freezers Combinations

### Introduction

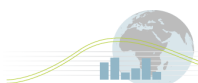
The first stage in the Mapping and Benchmarking process is the definition of the products, i.e. clearly setting the boundaries that define the products for use in data collection and analysis. Doing this ensures that comparison between the participating countries is done against a specific and consistent set of products.

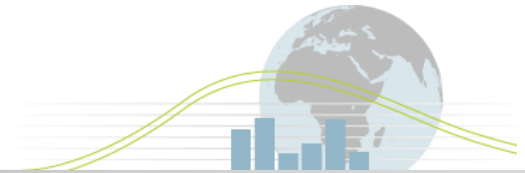
The summary definition for this product is:

Under Counter/ upright Refrigerators  (Single Grouping – collect data only)	Refrigerator with freezer (ice) compartment  (Single grouping – collect data only)	Side-by-Side and Freezer top/ Refrigerator bottom and Refrigerator top/ Freezer bottom  (Collect data on proportion of each type of unit in the market)	Chest/Under Counter/Upright Freezer  (Collect data on proportion of each type of unit in the market)
Where units are:			
<ul style="list-style-type: none"> <li>From all climate classes (but collect data on specific climate class that may be useful for later analysis)</li> <li>Have freezer compartments with rated temperatures between -12 to <math>\geq</math>-15C (all temperature ratings to refrigerator with freezer (ice) compartment)</li> <li>Differentiated (if possible) between units with peripheral water coolers and ice makers</li> </ul>			
Do not differentiate between			
<ul style="list-style-type: none"> <li>Defrost Cycles including Manual/Cyclical/Automatic (although collect data in case normalisation is required)</li> <li>Controls mechanisms including manual, automatic and cyclical</li> <li>Built in and stand-alone units (but where differentiated in market, collect data to enable normalisation)</li> <li>Volume (but collect data on gross volumes as base metric)</li> <li>Climate class (but collect data on climate class in case future analysis required, plus data on related local test conditions for climate classes)</li> </ul>			

The detailed product definitions can be found at the Annex website:

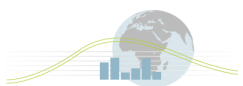
<http://mappingandbenchmarking.iea-4e.org/>

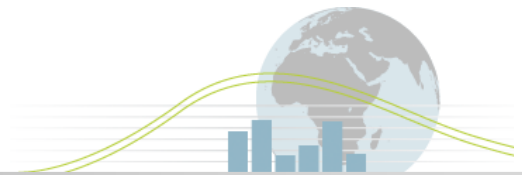




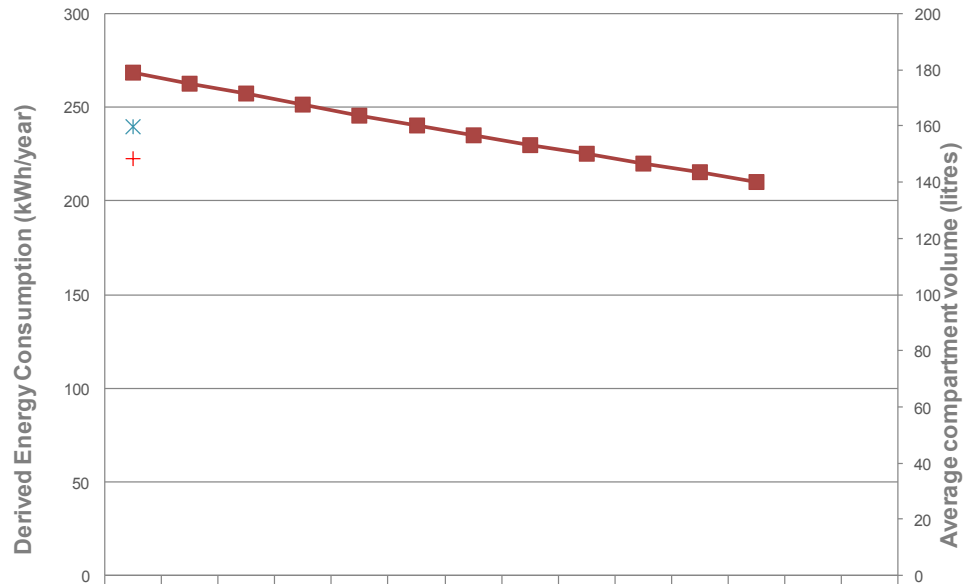
## Energy Efficiency of New Fridge Freezers Austria

Insufficient data available for analysis.





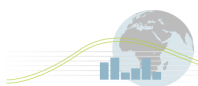
## Energy Consumption of New Fridge Freezers Austria

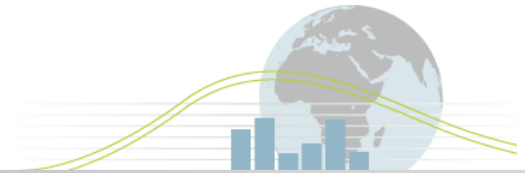


	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Worst Product (kWh/yr)														
Product Weighted Average (kWh/yr)	268.7	262.8	257.0	251.4	245.8	240.4	235.1	230.0	224.9	219.9	215.1	210.4		
Sales Weighted Average (kWh/yr)														
Best Product (kWh/yr)														
Ave. Stock Fridge Volume (l)	160													
Ave Stock Freezer Volume (l)	148													

### Key notes on Graph (See notes section 2)

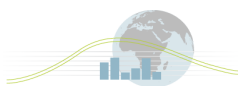
- **Energy Consumption data is NOT for refrigerator/freezers combination units but for refrigerator only units (some with small internal freezer units). Information is supplied for indicative purposes only as the closest data available to Austria.**
- Data source only provides averages for products and is supplied from the European ODYSSEE project, with the original data source thought to be GfK.

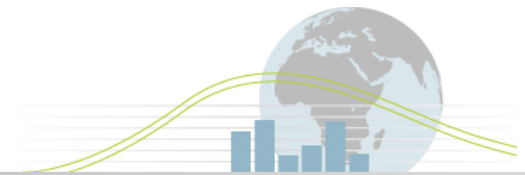




## Energy Efficiency in the Installed Fridge Freezer Stock Austria

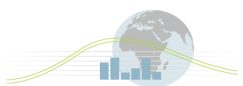
Insufficient data available for analysis.

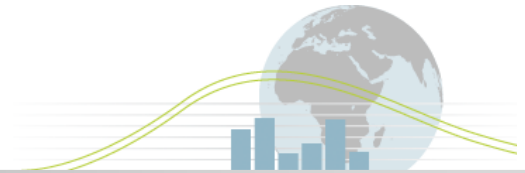




## Energy Consumption in the Installed Fridge Freezer Stock Austria

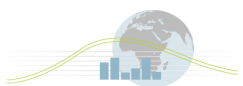
Insufficient data available for analysis.

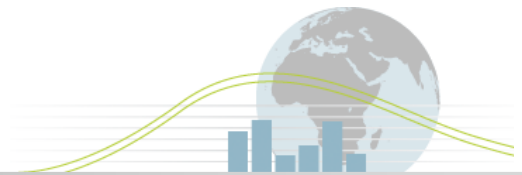




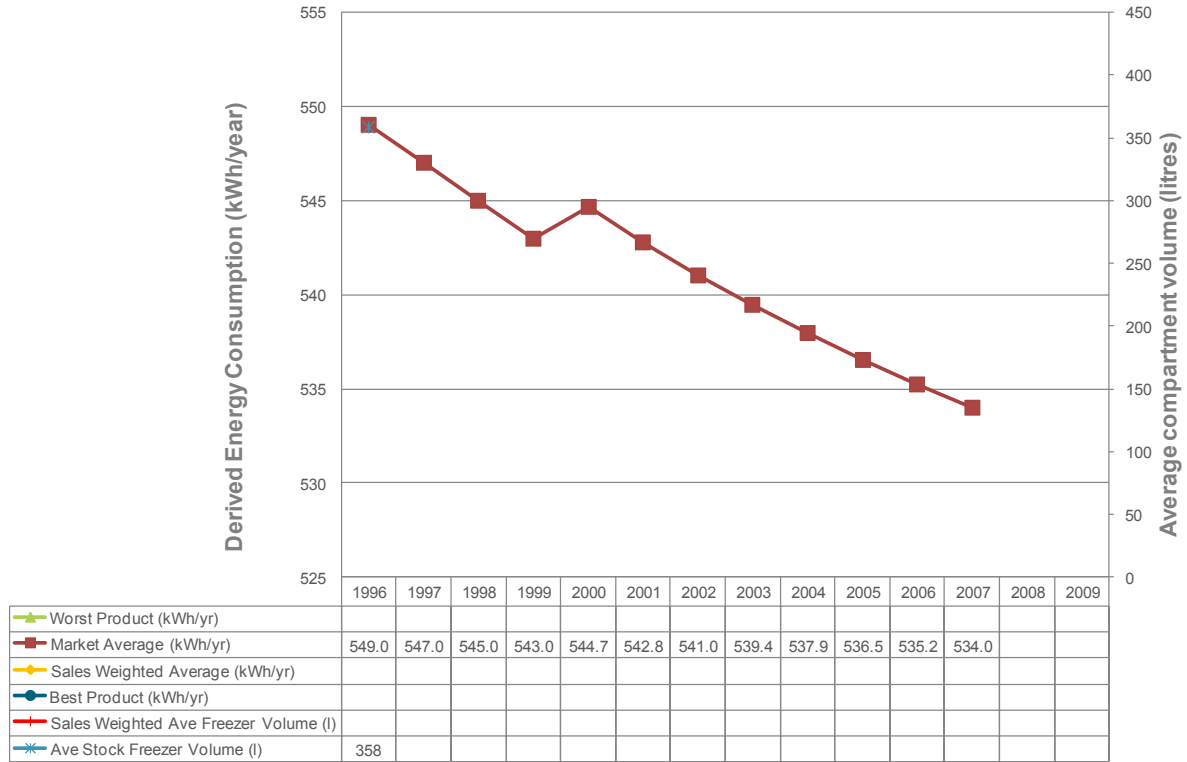
## Energy Efficiency of New Freezers Austria

Insufficient data available for analysis.



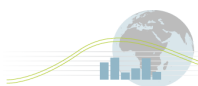


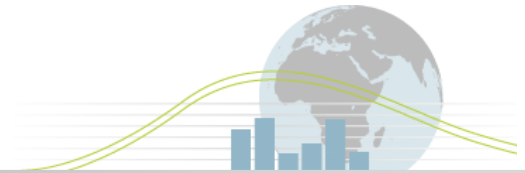
## Energy Consumption of New Freezers Austria



### Key notes on Graph (See notes section 2)

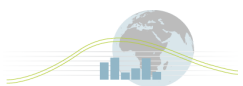
- Data source only provides averages for products and is supplied from the European ODYSSEE project, with the original data source thought to be GfK.



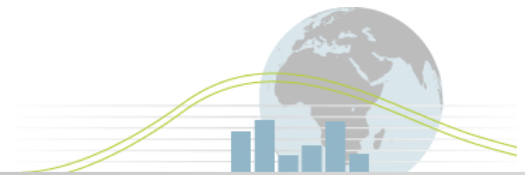


## Energy Efficiency in the Installed Freezer Stock Austria

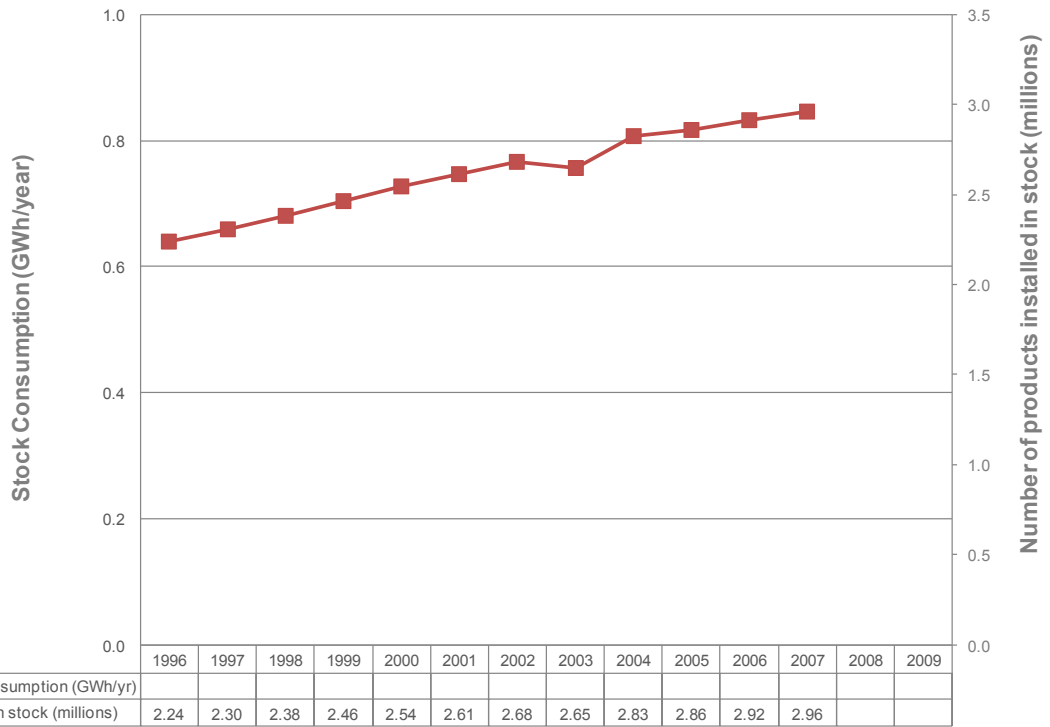
Insufficient data available for analysis.





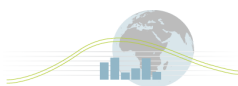


## Energy Consumption of the Installed Freezer Stock Austria



### Key notes on Graph (See notes section 2)

- Information on installed number of products only. No data available on average stock consumption..



## Major Policy Interventions (See notes Section 5)

### EU Wide Interventions (Product Specific):

Policy name	Period in force	Description	Impact <i>Relative impact of policy</i>
EC Energy Label	1995 – 2010	Defines A to G efficiency classes	All cold appliances to be labelled – improvement in the average efficiency over time
EC MEPS (EuP)	1999 – (July) 2010	Limit sales to A, B, C class, plus D & E for chest freezers	All cold appliances - improvement in the average efficiency over time
EC Energy Label	2004-2010	Defines A+ and A++ classes	All cold appliances - improvement in the average efficiency over time
Industry Commitment <sup>1</sup>	2002 - 2010	CECED commitment: only B or better (except chest freezers) on market by end 2004	Improvement in the average efficiency over time

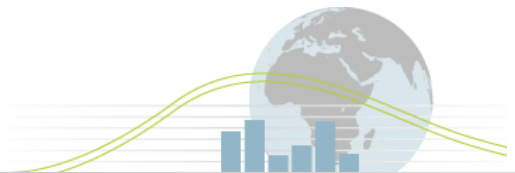
### Other Relevant Interventions Within Austria

The Directive 2006/32/EC of the European Parliament and of the Council of 5 April 2006 on energy end-use efficiency and energy services (deadline for the transposition of the Directive into Austrian national law was May 2008).

Within the Energy Service Directive – ESD (directive 2006/32/EC), Austria is obliged to improve the energy efficiency by 9% by 2016 compared to the business as usual scenario 2001-2005. Voluntary agreements to support energy savings with energy suppliers, distributors and trading associations and an Agreement between the federal, state and the provincial governments concerning issues on energy efficiency competence are being implemented.

Austria revised its energy strategy in April 2009, following the establishment of a new government. One of the goals of this strategy is to limit Austria's final energy consumption for the year 2020 to the 2005 level, which is 1100 PJ.

<sup>1</sup> "Voluntary commitment of reducing energy consumption of household refrigerators, freezers and their combinations (2002-2010)" 31<sup>st</sup> October 2002.  
<http://www.cecce.eu/ICECED/easnet.dtl/ExecReq/Redirection?eas:oldfilename=/community/files/296/phpXLy1ow/UICCOLD2002.pdf>

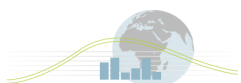


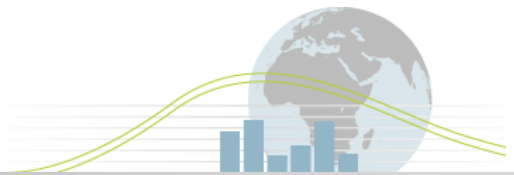
### Programs:

There are programs in Austria which aim to improve energy efficiency by granting subsidies for suitable measures for the household sector. These subsidies have usually been designed as a contribution towards investment costs or as a loan with reduced interest rates.

For purchasing energy efficient electrical appliances subsidies can be obtained from some regional electrical utilities. These subsidies are granted to all customers of the respective utility, regardless of whether the customer is the owner of a private household, an enterprise or a public institution.

The most innovative and popular measure in Austria is the long-term program for active climate protection (klima: aktiv), that was launched in 2004 from the Environmental Ministry (Lebensministerium). The program's main focus lies on increasing the market share of energy efficient products and services. The overall goal is to reduce the greenhouse gas emissions. As part of the initiative klima: aktiv, the program of "Top products" – Platform for energy efficient appliances provides information on best and worst available products in the market (<http://www.topprodukte.at>), for household and commercial users.

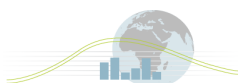


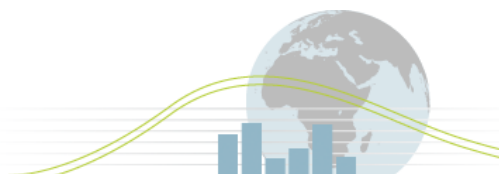


## Cultural Issues (See Notes Section 6)

From the 2008 Micro-census it is known that all participating households have one refrigerator, and 19.4 % have a second device. In the households with more than one device, these are newer than in households with only one device, showing that the second device is not necessarily replacing an old, less functioning one, but might show other influencing trends such as size of household or living space (Larger household and larger living space = increasing number of second refrigerators) . Approximately 9% of households have an A+ or A++ refrigerator, 25% have an A class, and 9% have a B or C class device.

The half of the participating households has a freezer (independent freezer) and 9% have at least two devices. Again with the increase in household size, increases the number of freezers. Only 38% of households with one person have a freezer, but 58% of the households with two people have a freezer, and almost 80% households with three or more people have a freezer. 12,3% of the total electricity consumption in households for year 2008 (average of 4417 kWh) corresponded to refrigerators and freezers (Ref. 1).





## Notes on data

### Section 1: Notes on Product Efficiency

No available data

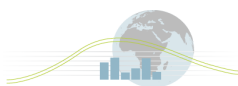
### Section 2: Notes on Product Consumption

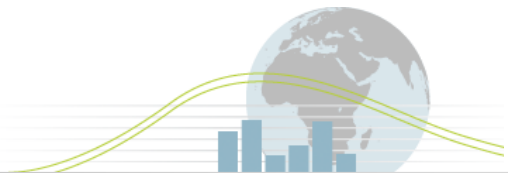
#### 2.1 Test methodologies, Performance Standards and Labelling Requirements

Energy consumption is claimed according to the requirements of the EC energy label and the appropriate energy efficiency class allocated according to the calculations given in the energy label directives.

The test standard for EC energy labelling is EN 153 which calls upon the EN ISO 15502.

Test Standard name	Date in force	Description	Comments
EN 153:2005  Methods of measuring the energy consumption of electric mains operated household refrigerators, frozen food storage cabinets, food freezers and their combinations, together with associated characteristics.	2005	Energy, temperature and volume of all types of domestic cold appliances are measured in accordance with test standard (BS) EN 153 and used for energy label declarations.  EN 153 refers to EN ISO 15502:2005	Supersedes EN 153:1995 (withdrawn 30 June 2008). Although there is some debate as to which test standard is currently valid under UK law.
EN ISO 15502: 2005  Household refrigerating appliances, refrigerator freezers  – characteristics and test methods.	2005	Defines characteristics and test methods	Prior to this standard there were four test standards for each of the main refrigerating appliance types





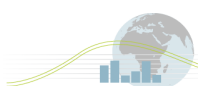
Specific information:

External/ambient test temperature	25 ± 0.5°C (Deviations from 25°C within ± 0.5°C are corrected in accordance with EN 153:2006 Clause 15.2.1.)
Internal temperatures for the appliances	
Fridge compartment	Mean temp of +5°C (no tolerance because in general, the energy consumption at this temp is obtained by interpolation.)
Freezer compartment (3 or 4 star compartment)	-18°C or colder

### 2.2 Product Consumption Graphic/Data Source

**IMPORTANT: Energy consumption data on Fridge/Freezer graphic is NOT for refrigerator/freezers combination units but for refrigerator only units (some with small internal freezer units). Information is supplied for indicative purposes only as the closest data available to Austria.**

Data source only provides *averages* for products. The data is an extract of data gathered for Austria for the ODYSSEE project ([www.odyssee-indicators.org](http://www.odyssee-indicators.org)). The ODYSSEE projects relies on databases that contain detailed data on the energy consumption drivers by end-use and sub-sector as well as energy efficiency and CO2 related indicators. It is believed the original source of data is GfK.



### **Section 3: Notes on Efficiency of Stock**

No data available

### **Section 4: Notes on Consumption of Stock**

#### **4.1 Test methodologies, Performance Standards and Labelling Requirements**

Refer to section 2.1

#### **4.2 Product Consumption of Stock**

No data is available other than the number of freezers installed (as shown in graphic) and volumes for products in 1996. These volumes are:

For refrigerator/freezer combination units

- Refrigerator Compartment = 159.74 litres
- Freezer Compartment = 148.26 litres

For Freezer only units

- Freezer Compartment = 358.38 litres

The data is an extract of data gathered for Austria for the ODYSSEE project ([www.odyssee-indicators.org](http://www.odyssee-indicators.org)). The ODYSSEE projects relies on databases that contain detailed data on the energy consumption drivers by end-use and sub-sector as well as energy efficiency and CO2 related indicators. It is believed the original source of data is GfK.

## Section 5: Notes on Policy Interventions

### 4.1 EU WIDE INTERVENTIONS

#### **Commission Directive 2003/66/EC**

*Program Type:* Mandatory Label

*Year Published:* 03/07/2003

*Economy:* EU Member Countries

*Year Effective:* 2004

*Implementing Agency:* National bodies of EU member Countries

#### *Description:*

The European Commission has now formally adopted a new directive (2003/66/EC) which extends the existing A-G energy labelling scale for domestic refrigeration appliances through the introduction of 2 new high efficiency classes (A+ and A++) from 1 July 2004.

The European Commission has issued a Commission Directive 94/2/EC of 21 January 1994 implementing Council Directive 92/75/EEC, with regard to energy labeling of household electric refrigerators, freezers and their combinations.

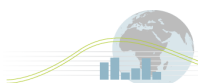
The framework directive provides a legal structure for the energy labeling of domestic appliances, requiring manufacturers and retailers to attach a label, including the energy performance, to the appliance when displayed for sale. The implementing directives describe what the indication should be for a specific appliance, given an energy consumption measured following a specified European test standard. These directives require EU member states to transpose the legal text into national law and have no legally binding meaning for citizens or companies.

Although a central directive is issued through the European Commission, each country needs to establish national legislation for the program to be enforced. Member States are responsible for all aspects of implementation including compliance, label accuracy, educational and promotional activities. Product suppliers need to provide proof of appliance efficiency and are also responsible for the supply of labels and brochures in appropriate languages.

This Directive shall apply to electric mains operated household refrigerators, frozen food storage cabinets, food freezers and their combinations. Appliances that may also use other energy sources, such as batteries, are excluded.

This directive is the amendment of the framework directive 94/2/EC implementing Council Directive 92/75/EEC for mandatory labeling scheme, which was agreed in 1992 and cancelled the framework directive 79/530/EEC.

The Commission Directive 2003/66/EC directive will enter into force on 1 July 2004.





**Directive 96/57/EC Refrigerators, Freezers and Combinations**

*Program Type:* Minimum Energy Performance Standard - Mandatory

*Product:* Refrigerator-freezers

*Economy:* EU Member Countries

*Year Published:* 03/09/1996

*Year Effective:* 03/09/1999

*Implementing Agency:* European Commission (EC) -  
[http://ec.europa.eu/enterprise/eco\\_design/index\\_en.htm](http://ec.europa.eu/enterprise/eco_design/index_en.htm)

**Voluntary Commitment on Reducing Energy Consumption of Household Refrigerators, Freezers and their Combinations**

*Program Type:* Minimum Energy Performance Standard - Voluntary

*Product:* Refrigerator-freezers

*Economy:* EU Member Countries

*Description:* The European Commission has pursued voluntary agreement with the European Federation of Domestic Appliance Manufacturers (CECED) to improve the energy efficiency of household refrigerating appliances.

*Year Published:* 31/10/2002

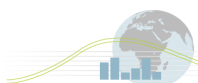
*Year Effective:* Applicable from 2002-2010

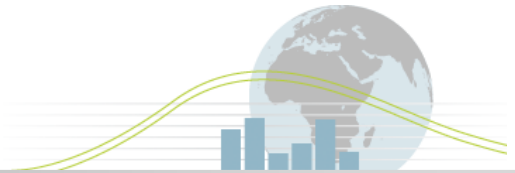
*Implementing Agency:* European Federation of Domestic Appliance Manufacturers -  
<http://www.ceced.org/>

#### 4.2 OTHER RELEVANT INTERVENTIONS WITHIN AUSTRIA

The majority of the other policy information is derived from two sources

- Ref 1: „Strom- und Gastagebuch 2008: Strom- und Gaseinsatz sowie Energieeffizienz österreichischer Haushalte. Auswertung Gerätebestand und Einsatz“. Statistik Austria/Direktion Raumwirtschaft, Energie, Wien 2009.
- Ref 2: “Energy Efficiency Policies and Measures in Austria”. Monitoring of Energy Efficiency in EU 27, Norway and Croatia (ODYSSEE-MURE). Austrian Energy Agency. Vienna, Austria September 2009.





## Section 6: Notes on Cultural Information

The majority of the cultural information is derived from two sources

- Ref 1: „Strom- und Gastagebuch 2008: Strom- und Gaseinsatz sowie Energieeffizienz österreichischer Haushalte. Auswertung Gerätebestand und Einsatz“. Statistik Austria/Direktion Raumwirtschaft, Energie, Wien 2009.
- Ref 2: “Energy Efficiency Policies and Measures in Austria”. Monitoring of Energy Efficiency in EU 27, Norway and Croatia (ODYSSEE-MURE). Austrian Energy Agency. Vienna, Austria September 2009.

