

Protecting the Climate with **EPS** ...

HIRSCH Servo



HIRSCH
GRUPPE

... Expanding with Ideas

A Protocol with an Impact ...

Climate change is the most important global challenge of our times. Even now we can clearly see the consequences of global warming. Heat waves, droughts, hurricanes, tornados and floods are on the increase, causing huge amounts of damage and costs running into billions. Only if we continue to promote climate protection and the Kyoto Protocol can we keep climate change down to an acceptable level.

The treaty ratified in Kyoto, Japan in 1997 is a milestone in international climate policy, as it defines binding international climate protection targets for the first time and sets a clear time frame. In force since February 2005, it commits some 130 signatory nations to reduce their collective emissions of six important greenhouse gases – including carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O) – by an average of 5.2% below their 1990 levels over the period from 2008 to 2012.

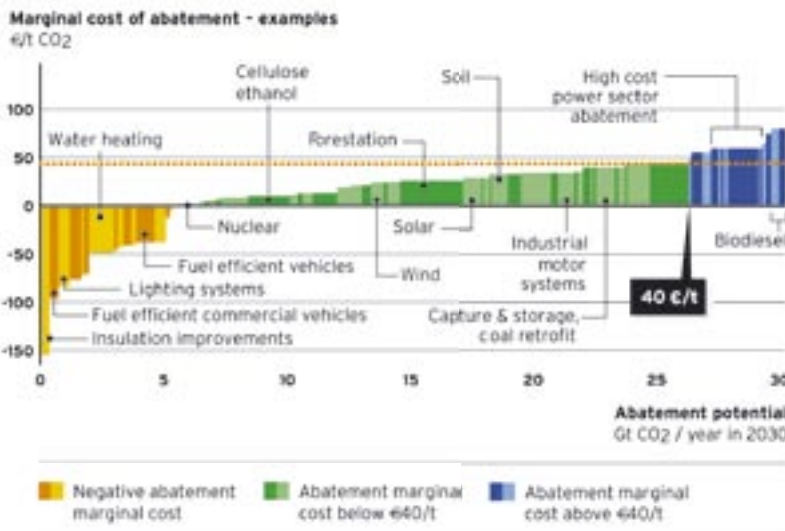
This group target can be met because different rates primarily depending on economic development have been distributed

Countries and their targets for reducing greenhouse gas emissions under the Protocol

EU-15, Bulgaria, Czech Republic, Estonia, Latvia, Liechtenstein, Lithuania, Monaco, Romania, Slovakia, Slovenia, Switzerland	- 8%
US (not ratified the Kyoto Protocol)	- 7%
Canada, Hungary, Japan, Poland	- 6%
Croatia	- 5%
New Zealand, Russia, Ukraine	0
Norway	+ 1%
Australia	+ 8%
Iceland	+ 10%

among the individual countries. After 2012 this commitment must be extended and developed. The Montreal climate change conference in December 2005 adopted important resolutions for the subsequent international climate protection process. One of the most effective and also cost-efficient measures for achieving the climate protection targets is reducing CO₂ emissions with building insulation, both in the area of renovations and new developments.

Global cost curve



Source: Vattenfall, McKinsey, 2007

Turned into insulation, 1 kg (2,2 lbs) EPS saves around 3.7 l (0.96 gal) heating oil, the user about € 90 (USD 122) over a period of 50 years and the environment approx. 582 kg (1280 lbs) CO₂.

You need about 600 kg (1320 lbs) EPS for a 150 sq m (1500 ft²) house
Heating oil savings/year: 2,220 liters (577 gal)
~ € 1,110 (USD ~ 1,500)

Savings over 50 years = ~ € 52,000 (USD 70,200)

2,200 l (577 gal) heating oil x 3.15 kg (6,9 lbs) CO₂
x 50 years = 350 tonnes (770,000 lbs) CO₂ saved

Building insulation saves money and reduces greenhouse gas emissions.

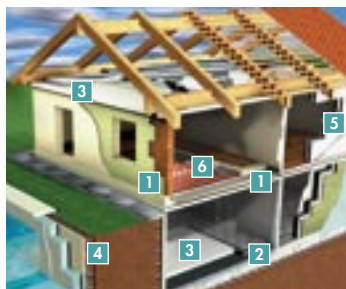


Low-Energy and Passive Energy Houses

The market segment comprising low-energy and passive energy houses is becoming more and more important. The basic requirement for both concepts is a thermally optimized building shell with no heat bridge. The passive house – a further development of the low-energy house – requires additional special windows and ventilation with heat recovery, which guarantee fresh air throughout the entire building at all times. In addition, the structure must be designed to allow for the use of solar energy. The most popular system solution for residential construction that meets low-energy or passive house standards is a combination or brick walls with a full EPS heat protection system. In the future the demand for the energy saving and innovative construction system ICF (Insulating Concrete Forms) should increase. It consists of EPS parts reinforced with plastic on the building site and then filled with concrete.

Conservation of Resources

An analysis of costs and benefits clearly demonstrates the ecological benefits of our products: for example, approx. 2.8 liters (0,7 gal) of crude oil are used to make 1 kg (2,2 lbs) of EPS raw material and 1 kg (2,2 lbs) of EPS that is processed into insulating materials saves approx. 3,7 litres (0,96 gal) of heating oil per year. The ecological strengths of the HIRSCH Servo Group are well anchored in production processes that are nearly waste-free and in the high potential for energy saving and protecting the climate.



- 1 HIRSCH Porozell Perimeter insulating boards
- 2 HIRSCH Porozell Lightweight concrete
- 3 POLYFORM HIRSCH Porozell EPS block products
- 4 HIRSCH Porozell Blocks for swimming pools
- 5 HIRSCH Porozell ICFs
- 6 HIRSCH Porozell System boards for underfloor heating

Protection of the climate is an investment in the future that pays off.

Thermal Insulation

Insulating materials basically meet two goals: acoustic and thermal protection. The latter term covers both the prevention of heat loss from the building as well as the prevention of heat inflow when temperatures are high in the summer. In the area of thermal protection, insulating materials make an important contribution to environmental protection, and also help to reduce the consumption of heating oil and gas. This, in turn, lowers CO₂ emissions and further lowers heating costs.

The construction industry offers a wide range of insulating materials with different load capacity, fire protection rating, heat transfer coefficient and other properties that are suitable for a variety of applications.

An extensive lifecycle balance* has been available for EPS insulating materials since 1994, which covers all stages from production to the disposal of waste, and shows excellent results in comparison to other materials used for this same purpose.



New EU Building Guideline

In order to improve the energy efficiency of buildings, the European Parliament and European Council have issued Guideline 2002/91/EG. The basis for this new EU directive "The general energy efficiency of buildings", which took effect on January 1, 2006, is formed by the climate protection goals of the EU and its member states. Specifically, the member countries of the EU must define minimum requirements for the overall energy efficiency of buildings (e. g. in the form of energy indicators). In the future an energy certificate that is not more than 10 years old must be presented when a building is constructed, sold or rented. This certificate must also contain recommended measures for improvement, and will allow consumers to compare and evaluate the energy efficiency of buildings.

New standards in selected EU countries:

Energy standards for new buildings	Mandatory beginning in
in Austria	2008
in Germany	2007
in Slovakia	2008
in Denmark	2006
in the Netherlands	2006

*Source: Lifecycle Balance of EPS Insulating Materials, Interdisciplinary Research Association for Plastics, Berlin



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