

Energy efficiency incentives: costs and benefits of selected incentives in 3 EnercitEE regions

GRACE - GRANTs and other incentives for Cost and Energy efficiency

EnercitEE subproject

ongoing project 2011-2013

Saxony (Germany)

Saxony is located in south-eastern Germany. The main energy source is brown coal, which is mined in three districts. Yet renewable energies are becoming more and more important for Saxony in reaching its objective of saving 6.5 million tons of CO₂ through 2020. Moreover, the share of renewable energies in gross electricity consumption is to be increased to 24% by 2020. To support these objectives, there are several regulations regarding energy efficiency or renewable energies. To promote more energy efficient communities and citizens, there are different funding programmes for the target groups from funding bodies such as the Development Bank of Saxony (SAB) and the German Credit Institute for Reconstruction (KfW). Improved incentives and grant programmes for citizens and communities in Saxony will help to implement the regional Climate and Energy Action Plan and to reach the foreseen reduction of carbon dioxide emissions.



Lower Silesia (Poland)

Lower Silesia is located in western Poland, with Wroclaw as its capital city. The region is inhabited by over 2.8 million people (over 7.5% of Poland's inhabitants). The main energy source for the region is still hard coal and lignite. Over the past few years there has been development of renewable energy sources in Lower Silesia. An increased interest in energy efficiency can also be observed in the region, as well as in the country as a whole. To encourage these processes, new energy laws were passed, followed by the introduction of grants and incentives supporting energy-efficiency and renewable energy activities by various governmental and European bodies and financial institutions.



Emilia-Romagna (Italy)

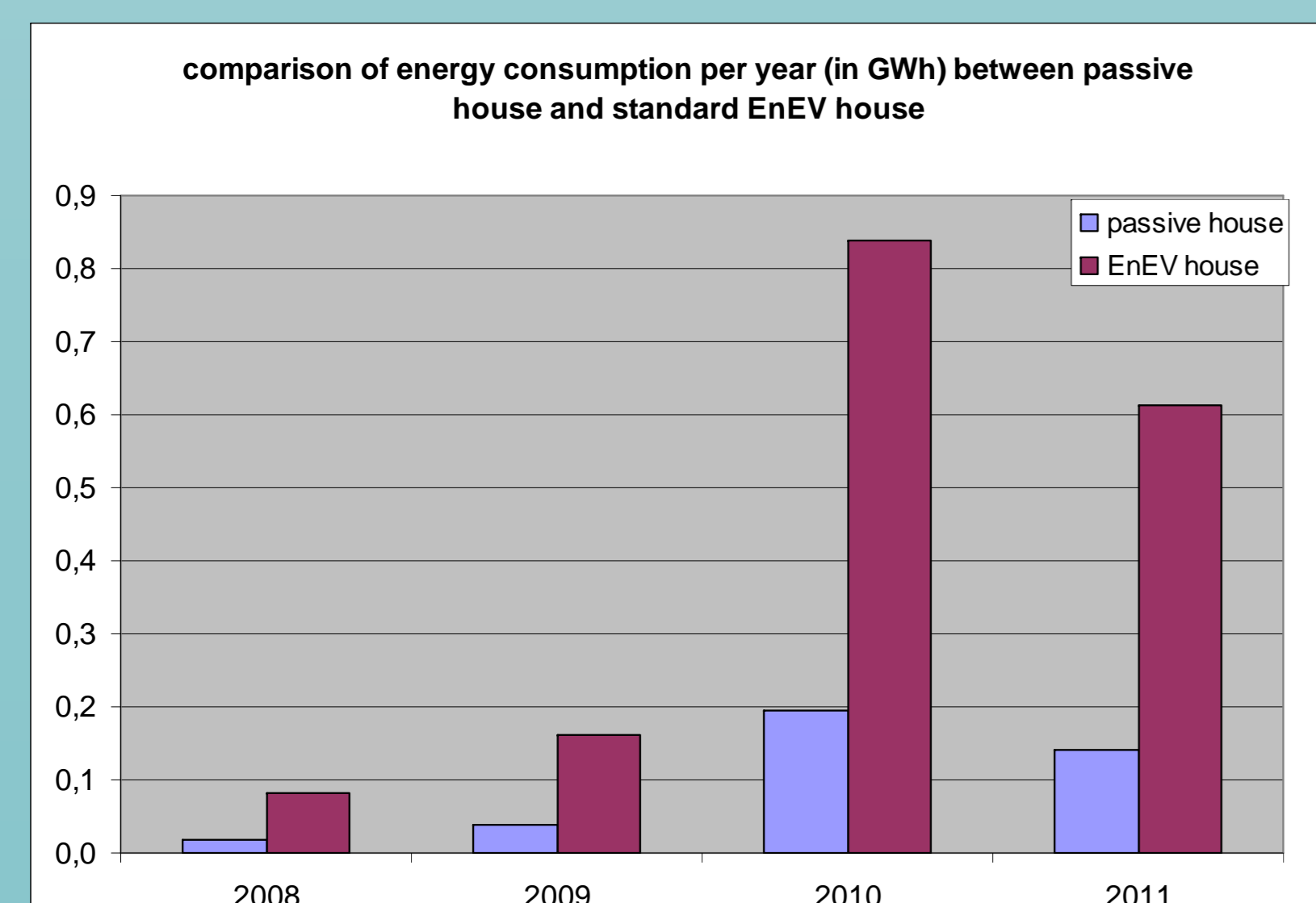
Emilia-Romagna is located in north-eastern Italy. The main energy source is natural gas (62.6%), now mostly imported, with renewables accounting for 5.3% of the 2008 energy balance. The second triennial implementation plan of the Regional Energy Plan calls for a 10% reduction in energy consumption over trend levels by 2020, signifying energy savings of ca. 1.57 Mtoe per year (of which 47% or 0.738 Mtoe/year is in the residential sector). The renewables share is to rise to 17-20% of final consumption, with solar and biomass playing key roles. The region accounted for 11.7% of applications for the national 55% tax rebate programme for energy-efficiency interventions in buildings in 2010. Subsidies for energy-efficient boilers have been implemented at the provincial level, and new incentives involving a revolving fund are planned. Emilia-Romagna is a leader in energy certification requirements for buildings.



Incentive/Programme → Energy and Climate Protection – Passive House

Timeframe	Since 2008
Participation	Funded a total of 136 new passive houses and existing houses that were refurbished to become passive houses
Total investment	€45,600,000 (assumption: average cost per passive house = €1,750/m ²)
Cost to Gov/incentive	€2,860,087.47 (5.66% of the investments in the Energy and Climate Protection Programme)
Ave. cost of intervention	€19,920 (2008 – 12/ 2011)
Energy savings	1.302 GWh/year (cumul. 2008-2012)
CO₂ savings	0.803 kt CO ₂ /year (cumul. 2008-2012)
Other benefits	<ul style="list-style-type: none"> Growing experience and expertise of engineering and construction firms in designing and building passive houses Decreasing investment costs for passive houses due to learning effects
Overall evaluation	<ul style="list-style-type: none"> Growing acceptance of the passive house concept by citizens in Saxony: the number of passive houses built has increased from 16 in 2008 to 46 in 2011

Fig. 1 – Comparison of energy consumption per year between Passive House and standard EnEV house (according to the national regulation)



Incentive/Programme → Solar Thermal Collector Incentives

Timeframe	2010 - 2014
Participation	19,382 applications; 17,712 incentives granted in May 2012
Total investment	116,325,000 PLN ca. €27,620,000
Cost to Gov/incentive	300,000,000 PLN ca. €71,428,000 (to be distributed through the end of 2014)
Ave. cost of intervention	6,300 PLN (about €1575) for citizens, 50,200 (about €12,500) for housing communes
Energy savings	n/a
CO₂ savings	n/a
Other benefits	<ul style="list-style-type: none"> Stimulates and encourages homeowners to use solar thermal technologies Use of solar thermal installations substitutes use of fossil fuels, mostly hard coal and electricity
Overall evaluation	<ul style="list-style-type: none"> Small investments possible, solar thermal panels eligible for support. Procedure is simple & investors can get support from installers. EPC required. Programme has gained significant interest among citizens.

Fig. 2 – Solar thermal panel incentives: number of applications (total) submitted in Poland



Incentive/Programme → 55% tax rebate

Timeframe	2007-2010. Programme still running
Participation	111,916 interventions (5.67% of families in region, though some families have made multiple interventions)
Total investment	€1,436,820,105 - 11.8% of Italy
Cost to Gov/incentive	€790,252,049 (to be disbursed over 3-5-10 years)
Ave. cost of intervention	€13,418.25
Energy savings	768 GWh/year
CO₂ savings	163.58 kt CO ₂ /year
Other benefits	<p>Stimulus to economy (based on /CRESME (2010) estimates for Italy. ER=11.8% of total investment value):</p> <ul style="list-style-type: none"> est. 4979.6 jobs/year Energy cost savings €369.8 million Fiscal returns €383.5 million Increase in rents for improved property €580.58 million Support to productive fabric Incentive to technological innovation Improvement of Energy mix
Overall evaluation	<ul style="list-style-type: none"> Simplified Internet-based procedure for accessing the tax rebate. Possibility to make small investments (i.e. boilers, windows). Energy Performance Certificate required only for major measures. Ministry of Finance wavering on yearly decision to renew the incentive creates uncertainty in the market.

Fig. 3 – 55% tax rebate in Emilia-Romagna - Investments 2007-2010

