



HELLENIC REPUBLIC
MINISTRY OF THE ENVIRONMENT
ENERGY AND CLIMATE CHANGE

SECRETARIAT-GENERAL FOR ENERGY AND CLIMATE CHANGE
DIRECTORATE-GENERAL FOR ADMINISTRATIVE
SUPPORT OF SERVICES
DIRECTORATE FOR PUBLIC RELATIONS
AND INTERNATIONAL ACTIVITIES
EUROPEAN COMMUNITIES DEPARTMENT

Athens, 5 June 2012
Ref. No: D16/F2.4A/11211/572

Postal Address: 119, Mesogeion Ave.
Postal Code: 101 92
Contact: Ch. Kolivas
Tel. : (0030) 210 6969023
Fax : (0030) 210 6969569
E-mail : kolyvasc@eka.ypekagr

TO: European Commission
(through the EU Pilot system)

Cc: Ministry of Foreign Affairs
State Legal Service - Community Law
Attn: Ms Dafniou
Fax: (0030) 210-3681717

SUBJECT: Reply to case EU Pilot 5039/13-ENER - Failure to submit the indicative national energy efficiency target required under Article 3(1) of Directive 2012/27/EU

Please note that by means of the attached "*ANNUAL REPORT UNDER ARTICLE 24(1) OF DIRECTIVE 2012/27/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL ON ENERGY EFFICIENCY, AMENDING DIRECTIVES 2009/125/EC AND 2010/30/EU AND REPEALING DIRECTIVES 2004/8/EC AND 2006/32/EC*" drawn up by the Ministry of the Environment, Energy and Climate Change on 30 April 2013, the indicative national energy efficiency target as required by Article 3 of Directive 2012/27/EU was submitted to the European Commission [DG ENER - Unit C3 (Energy Efficiency)].

This report was notified to the European Commission [DG ENER - Unit C3 (Energy Efficiency)] by means of letter with reference 4014 dated 22 May 2013 of the Permanent Representation of Greece to the European Union.

The Secretary-General

Enclosure: 24 pages

Konstantinos Mathioudakis

Internal Distribution:

- Office of the Minister.
- Office of the Deputy Minister.
- Office of the Secretary-General
- Directorate-General for Energy
- Directorate for Efficient Use & Energy Saving
- D16, Department A (3).



HELLENIC REPUBLIC
**MINISTRY OF THE ENVIRONMENT, ENERGY
AND CLIMATE CHANGE**
SECRETARIAT-GENERAL FOR ENERGY
AND CLIMATE CHANGE



Athens, April 2013

NATIONAL ANNUAL REPORT

UNDER ARTICLE 24(1) OF DIRECTIVE 2012/27/EU OF THE
EUROPEAN PARLIAMENT AND OF THE COUNCIL ON
ENERGY EFFICIENCY, AMENDING DIRECTIVES 2009/125/EC
AND 2010/30/EU AND REPEALING DIRECTIVES 2004/8/EC
AND 2006/32/EC

This national report on the progress towards meeting national 2020 targets for improving energy efficiency was drawn up in accordance with Annex XIV to the relevant Directive and was prepared jointly by:

the Directorate for Efficient Use and Energy Saving of the Directorate-General for Energy and Climate Change of the Ministry of the Environment, Energy and Climate Change and the Directorate for Energy Policy & Planning of the Centre for Renewable Energy Sources and Energy Saving (KAPE).

CONTENTS

1.	GENERAL INFORMATION	4
2.	NATIONAL ANNUAL DATA	6
2.1.	Energy data.....	6
2.2.	Economic and demographic data	10
2.3.	Data for the transport sector	13
2.4.	Heat and power data	17
3.	SETTING THE TARGET FOR IMPROVING ENERGY EFFICIENCY	20
3.1.	General framework and target methodology	20
3.2.	Assumptions of the calculation models.....	21
3.3.	Target definition	23

1. GENERAL INFORMATION

In order to ensure that the target of 20% primary energy savings in the EU by 2020 is met, the European Commission adopted Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC.

The Conclusions of the European Council of 4 February 2011 acknowledged that the Union energy efficiency target is not on track and that determined action is required to tap the considerable potential for higher energy savings in buildings, transport, products and processes. At the same time, there is need for constant monitoring and evaluation of the extent to which Member States have made progress towards the achievement of the national energy efficiency targets, pursuant to the provisions of Directive 2012/27/EU. Thus, there is an ability to redefine the actions implemented in order to meet the target set at European level.

Pursuant to Law 3855/2010, the national final energy savings target was set at 9% by 2016 (16.46 TWh), as compared to average final energy consumption for the period 2001-2005. This objective remains in place and progress towards it is being monitored through the National Energy Efficiency Action Plans (EEAP). In addition, Law 3661/2008 on the energy performance of buildings and Law 3851/2010 on accelerating the development of Renewable Energy Sources, lay down new criteria in respect of the permitting procedure for granting planning permissions and the obligation to cover total primary energy consumption by means of resource-efficient technologies (renewable energy sources, cogeneration, district heating and high energy efficiency heat pumps). Finally, Law 4122/2013 on the energy performance of buildings transposes Directive 2010/31/EU into Greek legislation and establishes, *inter alia*, a methodology for calculating the energy performance of buildings, sets out minimum energy performance requirements taking into account cost-optimal levels calculated through a comparative methodology, lays down the time limits for meeting the “nearly zero-energy requirements” for new buildings and addresses several issues related to energy audits and the issuance of energy performance certificates.

This report constitutes the annual report of Greece on the progress towards meeting national energy efficiency targets pursuant to Article 24(1) of Directive 2012/27/EU. The analysis provided below includes all information required under Annex XIV, Part 1 “General framework for annual reports” to Directive 2012/27/EU and additional information considered necessary for interpreting the evolution of specific figures. In addition, the indicative national energy efficiency target for 2020 as required under Article 3(1) of Directive 2012/27/EU is defined and the calculation methodology thereof is presented.

Eurostat and the Hellenic Statistical Authority (EL.STAT) were used as additional sources of statistical information for deriving the data presented in this report. An extensive control and cross-check of available information derived from all sources was carried out in order to identify any discrepancies.

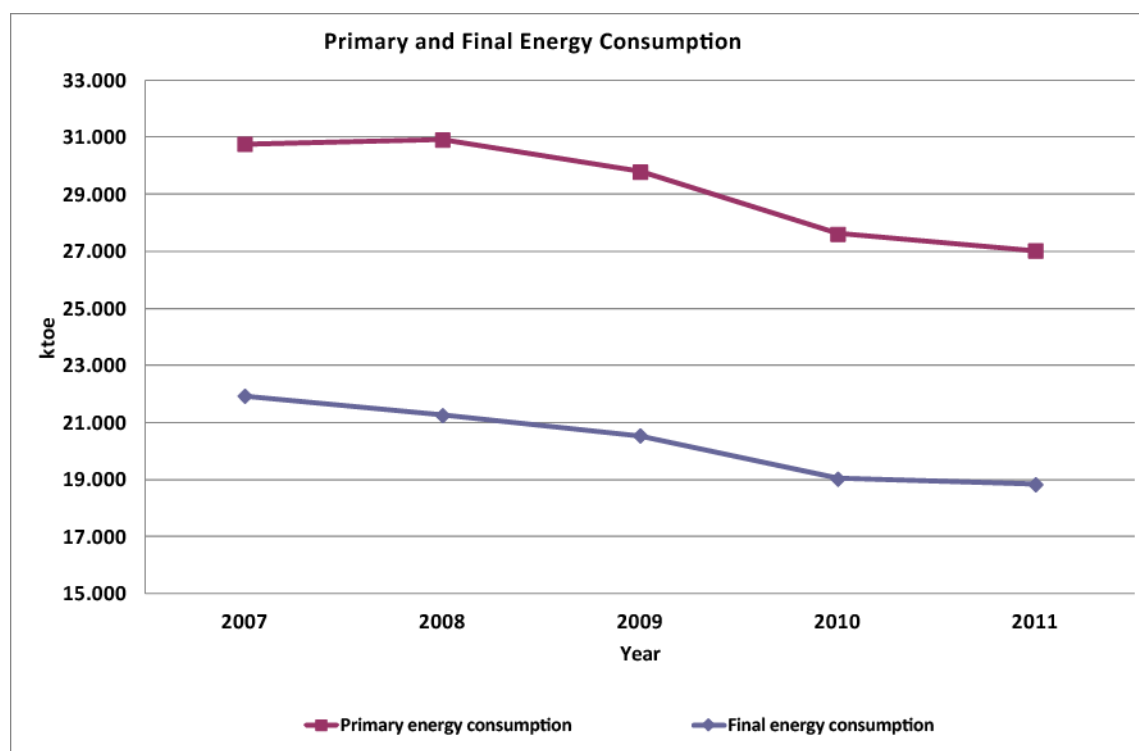
2. NATIONAL ANNUAL DATA

2.1. Energy data

According to the official data of the Ministry of the Environment, Energy and Climate Change and of Eurostat, total primary energy consumption declined in the period 2007-2011 with the exception of a slight increase in 2008 (Table 1 and Graph 1). In particular, primary energy consumption decreased by 2.1% in 2011 as compared to 2010, whereas the overall reduction for the period 2007-2011 amounts to 12.2%. A similar trend appears in final energy consumption for the period 2007-2011, decreasing by 14.1%. In addition, final energy consumption dropped by 1.0% in 2011 as compared to 2010.

Consumption (ktoe)	2007	2008	2009	2010	2011
Primary energy	30,767	30,912	29,788	27,610	27,029
Final energy	21,937	21,255	20,544	19,027	18,835

Table 1: Primary energy consumption and final energy consumption for the period 2007-2011.

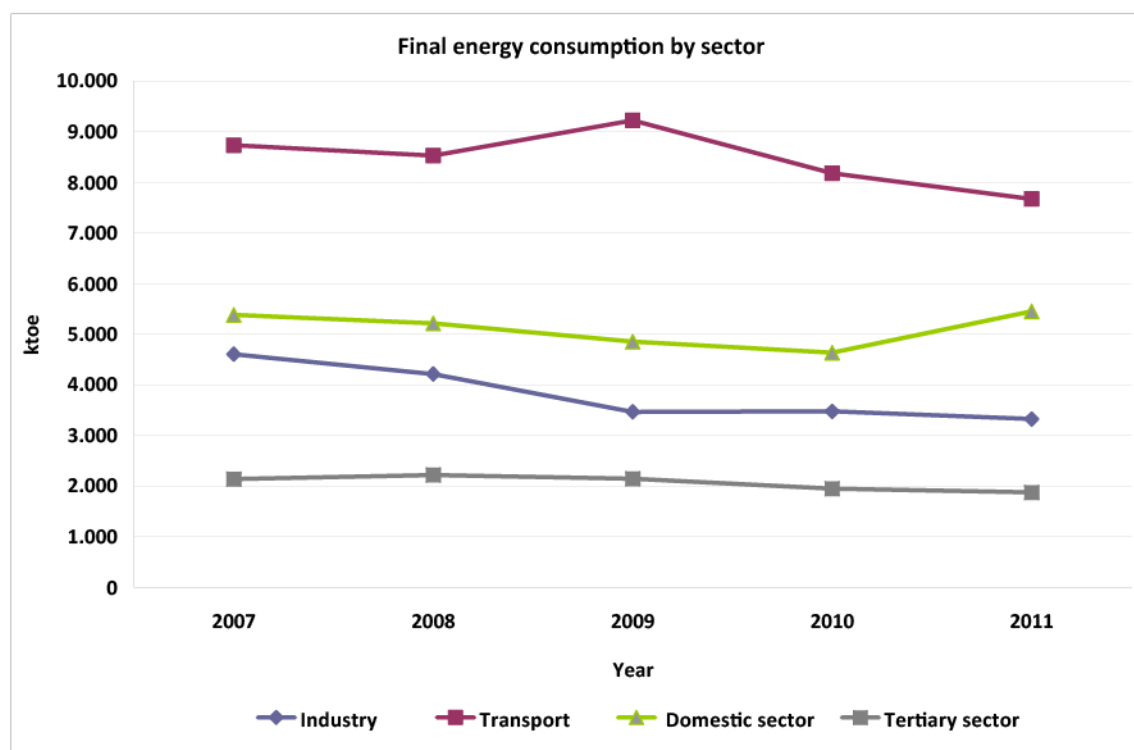


Graph 1: Primary energy consumption and final energy consumption.

The development of final energy consumption recorded in the period 2007-2011 is of additional interest when analysed at the level of economic activity sectors (Table 2 and Graph 2) since additional information and conclusions may be drawn as to final energy consumption.

Final energy consumption* (ktoe)	2007	2008	2009	2010	2011
Industry	4,601	4,209	3,461	3,471	3,322
Transport	8,728	8,525	9,218	8,177	7,666
Domestic sector	5,377	5,212	4,848	4,632	5,448
Service sector	2,134	2,216	2,143	1,946	1,873

Table 2: Final energy consumption by sector for the period 2007-2011 (Sector analysis does not include final energy consumption in the agricultural sector)



Graph 2: Final energy consumption by sector.

In particular, a decrease of 4.3% in final consumption was recorded for the year 2011 as compared to 2010 in the industrial sector, whereas the corresponding decrease for the period 2007-2011 amounted to 27.8%. In addition, the transport sector has shown a decrease of 6.2% in 2011 as compared to 2010 and an overall reduction of 12.2% was recorded for the period 2007-2011. A similar trend appears in the service sector with a drop of 3.8% in final energy consumption in 2011 as compared to 2010 and a reduction of 12.2% for the period 2007-2011.

Albeit having a sustained declining trend of 13.9% in the period 2007-2010, the domestic sector has shown an increase of 17.6% in 2011 as compared to 2010. However, this increase may be attributed to the changes in the pricing policy for heating oil leading to the early supply of heating oil in lower prices and, mainly, to the more unfavourable climatic conditions during the winter period in question as compared to the same period in 2010.

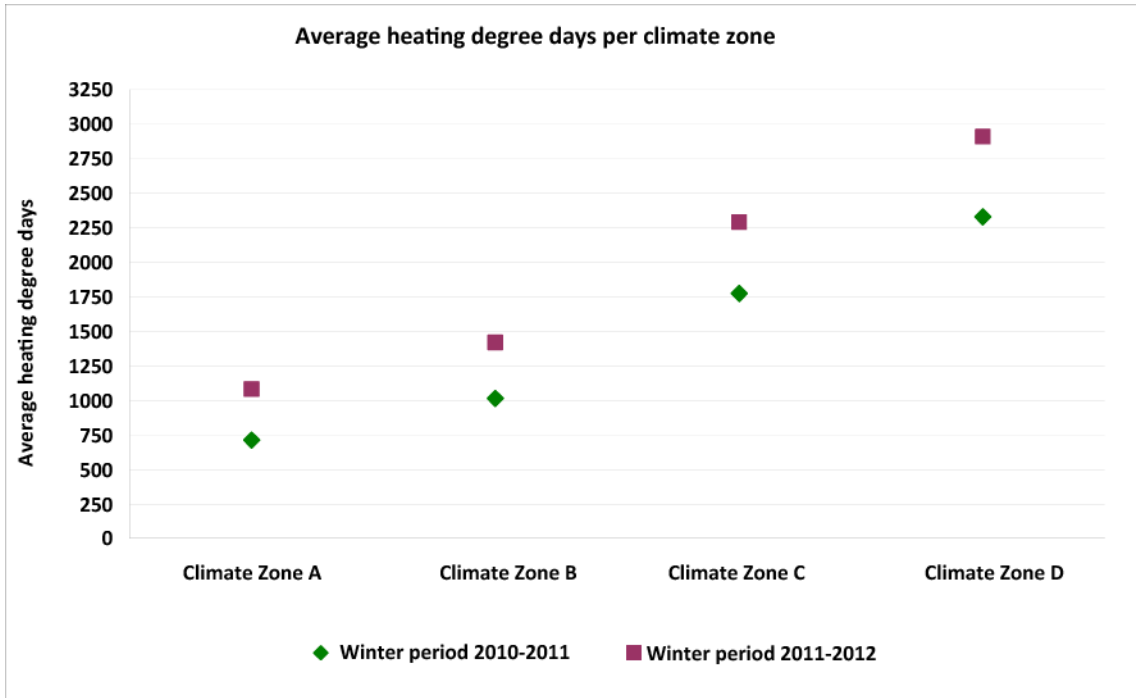
In particular, Table 3 contains a final energy consumption analysis by fuel and energy type in the domestic sector for the period 2007-2011.

Final energy consumption (ktoe)	2007	2008	2009	2010	2011
Solid fuel	2	6	4	3	4
Natural gas	177	208	256	255	348
Oil	2,645	2,555	2,199	1,966	2,583
RES	968	841	782	802	943
Electricity	1,544	1,559	1,559	1,559	1,516
Heat	41	44	49	46	54
Total	5,377	5,212	4,848	4,632	5,448

Table 3: Final energy consumption by energy type in the domestic sector for the period 2007-2011.

Table 3 shows an increase of 31.4% in the use petroleum products in 2011 as compared to 2010, whereas overall consumption for the period 2007-2010 decreased by 25.7%. Natural gas consumption continued to increase throughout the period 2007-2011, whereas the contribution of RES in final energy consumption in the domestic sector increased from 2009 to 2011. Finally, after the 2008 increase, electricity consumption remained stable until 2010 and finally dropped by 2.8% in 2011 as compared to 2010.

In addition, Graph 3 illustrates the increase of heating degree days during the winter period 2011-2012 as compared to the period 2010-2011. In particular, heating degree days show an increase ranging from 24.9% to 51.9% for the four climatic zones of the Greek territory during the winter period 2011-2012 as compared to the same period in 2010-2011. Therefore, the prevailing climatic conditions determined the heating needs of the domestic sector, leading to an overall increase of final energy consumption in the domestic sector for the year 2011.



Graph 3: Average heating degree days per climatic zone (Source: <http://www.degreedays.net>¹).

¹ Average heating degree days were calculated for each climatic zone on the basis of the available data from all measuring stations located in these zones.

2.2. Economic and demographic data

The official data of EL.STAT and Eurostat demonstrate a clear impact of the economic recession on the Greek economy during the period under consideration, as also demonstrated by the economic indicators listed in Table 4. All sectors of economic activity present a decrease in Gross Value Added, particularly for the period 2009-2011 where the impact of the economic recession is being felt in the real economy.

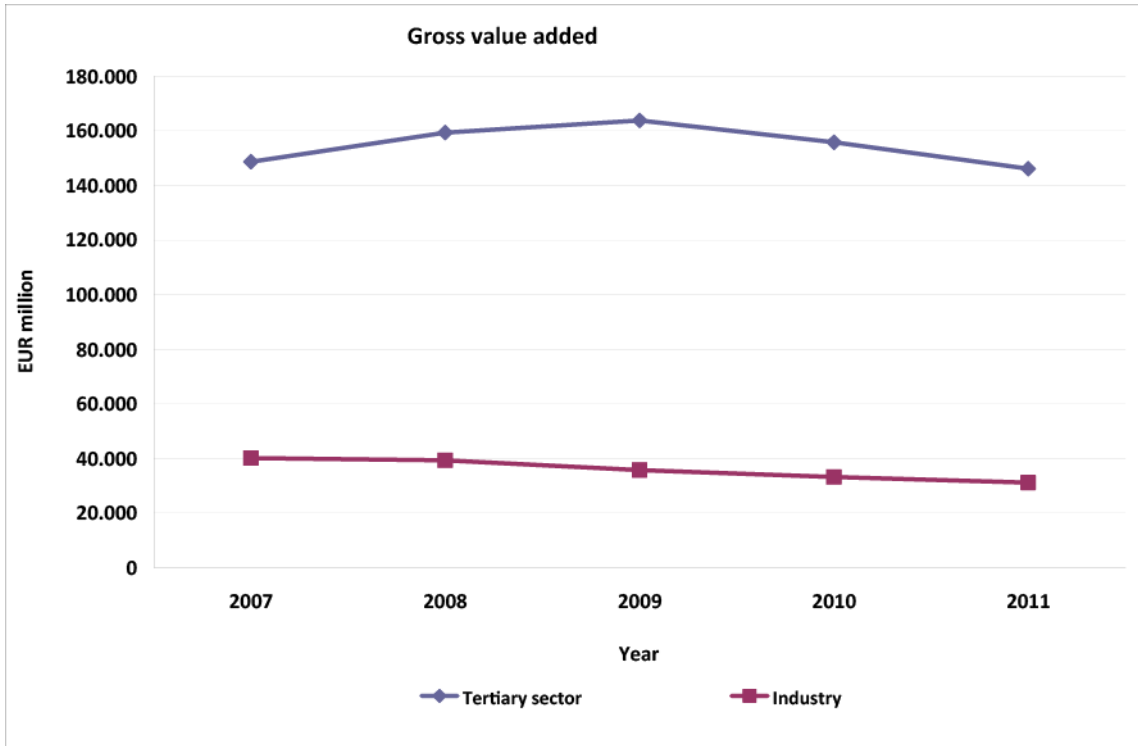
Despite the annual increase of the service sector for the period 2007-2009, amounting to 7.2% in 2008 and 2.8% in 2009 respectively, this trend is reversed in the coming years with a drop of 4.9% in 2010 as compared to 2009 and of 6.2% in 2011 as compared to 2010 (Graph 4). The industrial sector presents an overall sharp decline in Gross Value Added for the period 2007-2011 amounting to 22.5%, whereas the decrease observed in 2011 as compared to 2010 in Gross Value Added is 6.2%. (Graph 4).

The evolution of the Disposable Income of households appears to follow the trends of the Gross National Product which displays a continuous annual decrease in the period 2008-2011, with the exception of the period 2007-2008 where there is a slight increase. The pace of reduction culminates in the period 2010-2011 with a drop of 6.9% in the Disposable Income of households and 6.1% in the Gross Domestic Product (Graphs 5 and 6).

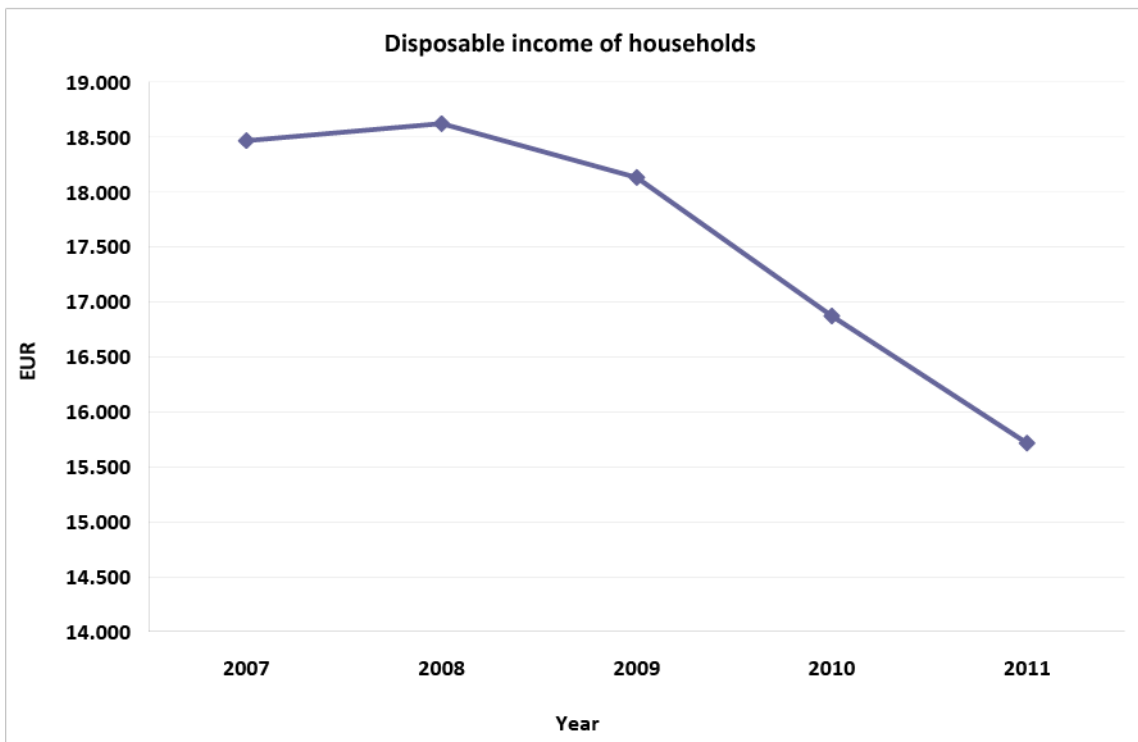
The population is on a steady increasing trend of 0.4% per year during the period 2007-2010 whereas a decline of 0.1% is observed in 2011 as compared to 2010 (Graph 7).

	2007	2008	2009	2010	2011
Gross value added of industry (EUR million, current prices)	40,126	39,292	35,680	33,143	31,091
Gross value added of services (EUR million, current prices)	148,666	159,349	163,850	155,779	146,136
Disposable income of households - Real adjusted gross disposable income of households per capita- (EUR)	18,468	18,623	18,133	16,873	15,715
Gross Domestic Product (GDP) (EUR million, current prices)	223,160	233,198	231,081	222,152	208,532
Population (residents)	11,192,763	11,237,094	11,282,760	11,307,502	11,299,976

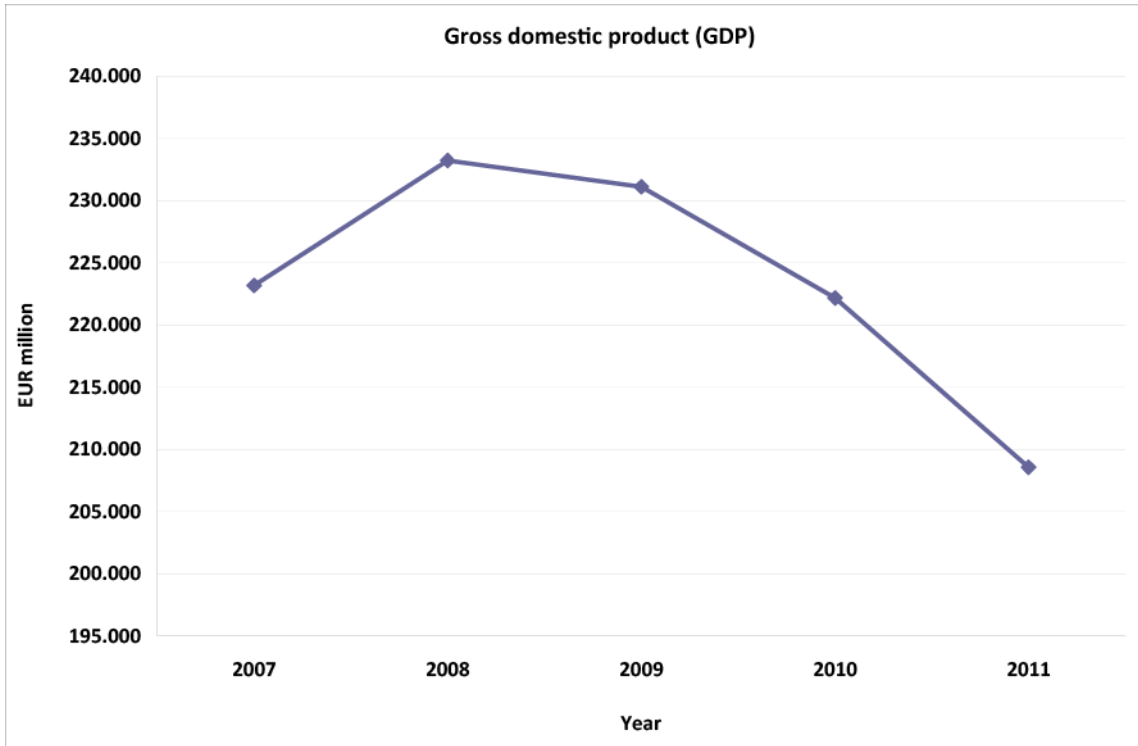
Table 4: Economic indicators of the Greek Economy.



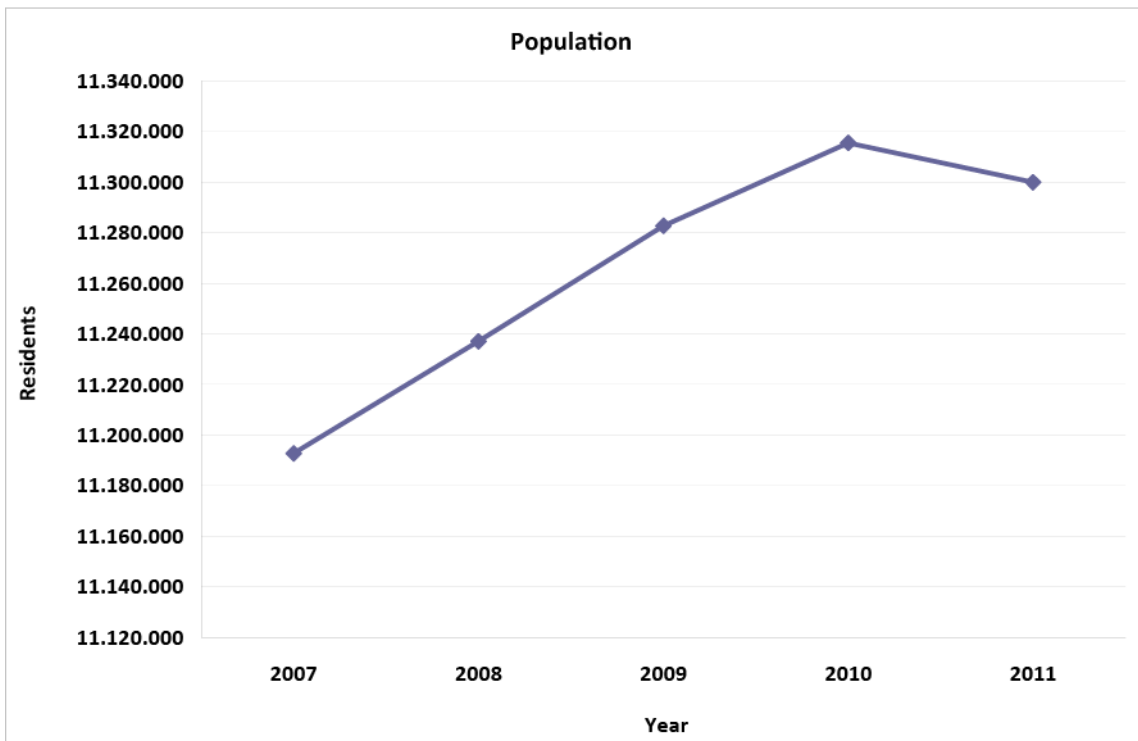
Graph 4: Gross value added.



Graph 5: Disposable income of households.



Graph 6: Gross Domestic Product.



Graph 7: Population.

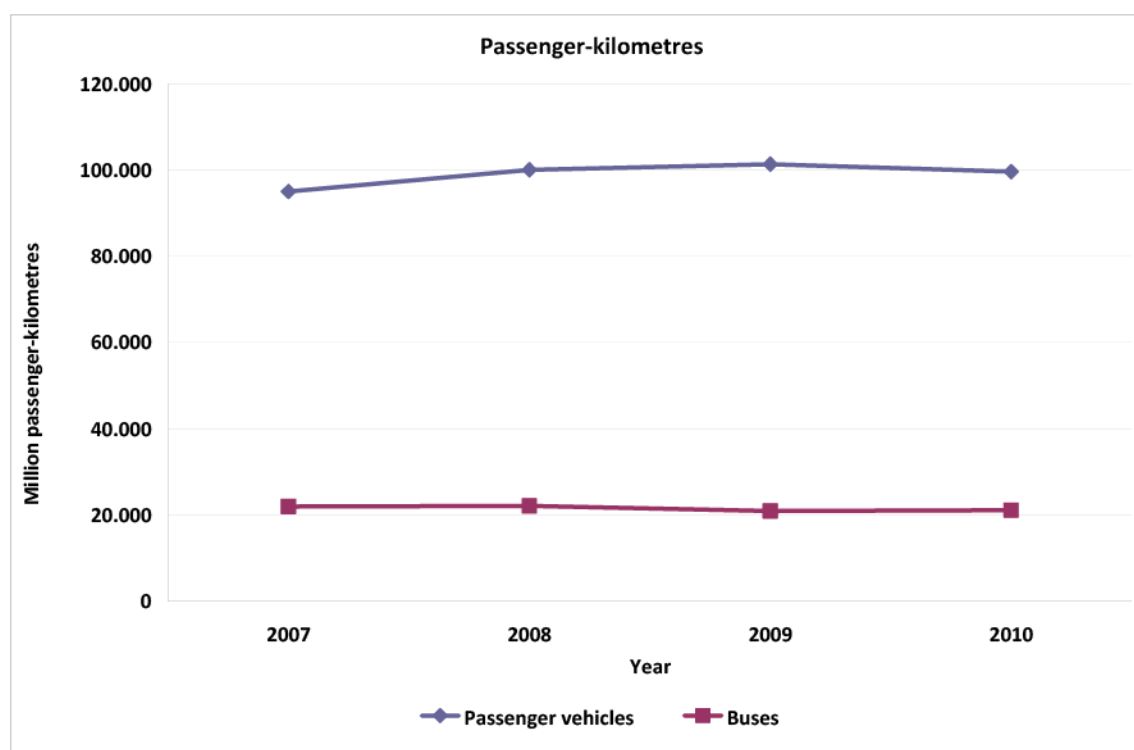
2.3. Data for the transport sector

Eurostat's statistics on transport loads in the transport sector are also of interest (Source: EU Transport in figures, Statistical Pocketbook 2012, European Commission). In particular, according to Table 5 and Graphs 8-10, passenger kilometres of the METRO, ATHENS-PIRAEUS ELECTRIC RAILWAYS (ISAP) AND TRAM in the metropolitan area of Athens present a gradual increase during the period under consideration. On the contrary, passenger kilometres of buses have a declining trend, with the exception of the period 2007-2008 where there is a marginal increase. Taking into account Graph 2, demonstrating a significant reduction in final energy consumption in the transport sector, it is necessary to further investigate the methodology for the calculation of passenger kilometres through research in the transport sector. The new methodology should take into account, to a greater extent, the particular economic and social conditions caused by the economic downturn reflecting their actual impact on passenger movement and leading to more accurate estimations of specific figures.

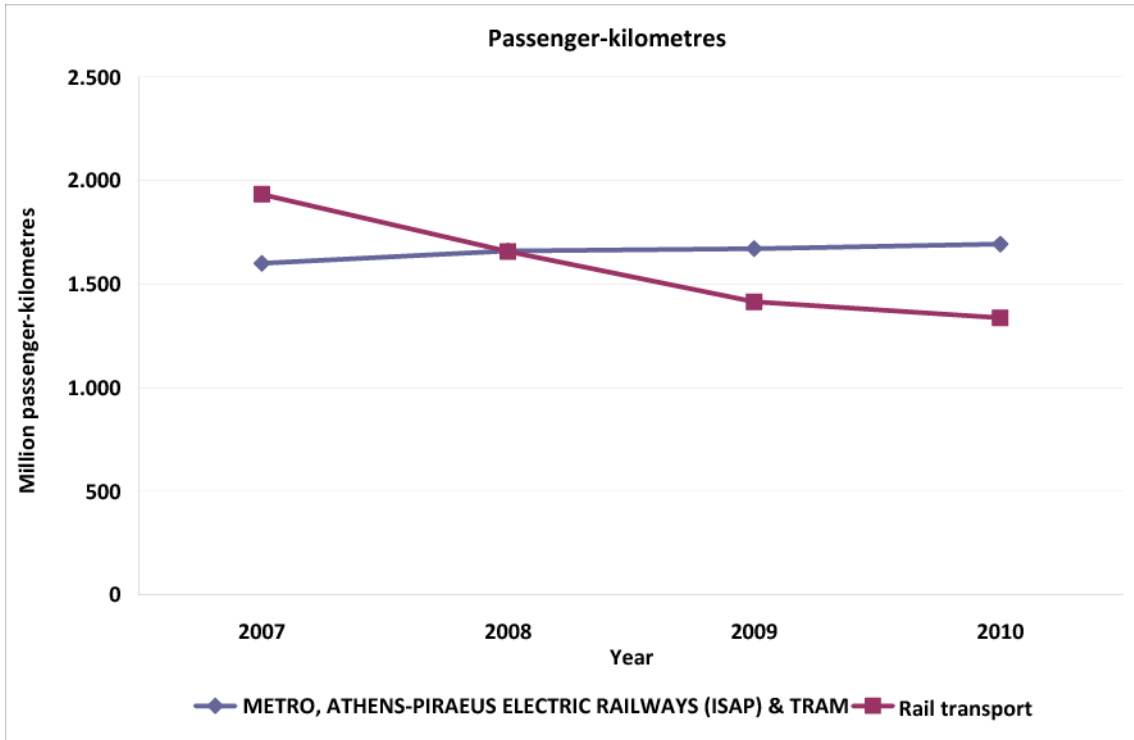
Freight transport by road increases on an annual basis throughout the reporting period (with the exception of the period 2008-2009 showing a marginal decrease), whereas freight rail transport decreases, except for the period 2009-2010. Given that the main freight volume is transported by road, total tonne kilometres increase in the period under consideration with the exception of some differentiations in the period 2008-2009. As these are estimations and projections of transport loads from previous studies (note the lack of available data for 2011), it is neither feasible nor safe to draw further conclusions as to the qualitative characteristics of both freight and passenger transport loads.

	2007	2008	2009	2010	2011
Passenger kilometres, passenger vehicles (million pkm)	95,000	100,000	101,300	99,600	NA
Passenger kilometres (million pkm)	22,000	22,100	20,919	21,100	NA
Passenger kilometres, METRO/ATHENS-PIRAEUS ELECTRIC RAILWAYS (ISAP) & TRAM (million pkm)	1,600	1,660	1,671	1,693	NA
Passenger kilometres rail transport (million pkm)	1,933	1,657	1,414	1,337	NA
Total passenger kilometres	120,533	124,417	125,304	123,730	NA
Tonne kilometres, road transport (million tkm)	21,729	24,346	24,228	25,256	NA
Tonne kilometres, rail transport (million tkm)	835	786	552	614	NA
Total tonne kilometres (million tkm)	22,564	25,132	24,780	25,870	NA
Combined transport kilometres (pkm + tkm)	143,097	150,549	150,084	149,600	NA

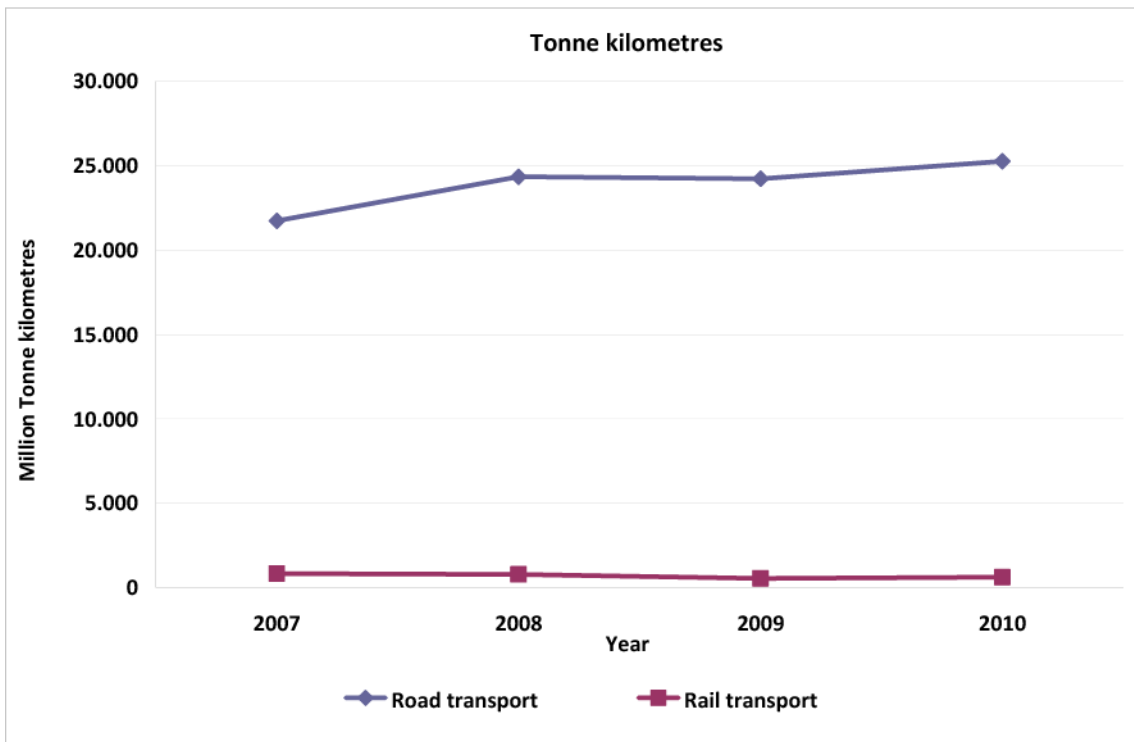
Table 5: Freight and passenger traffic per type of transportation (NA: Not Available).



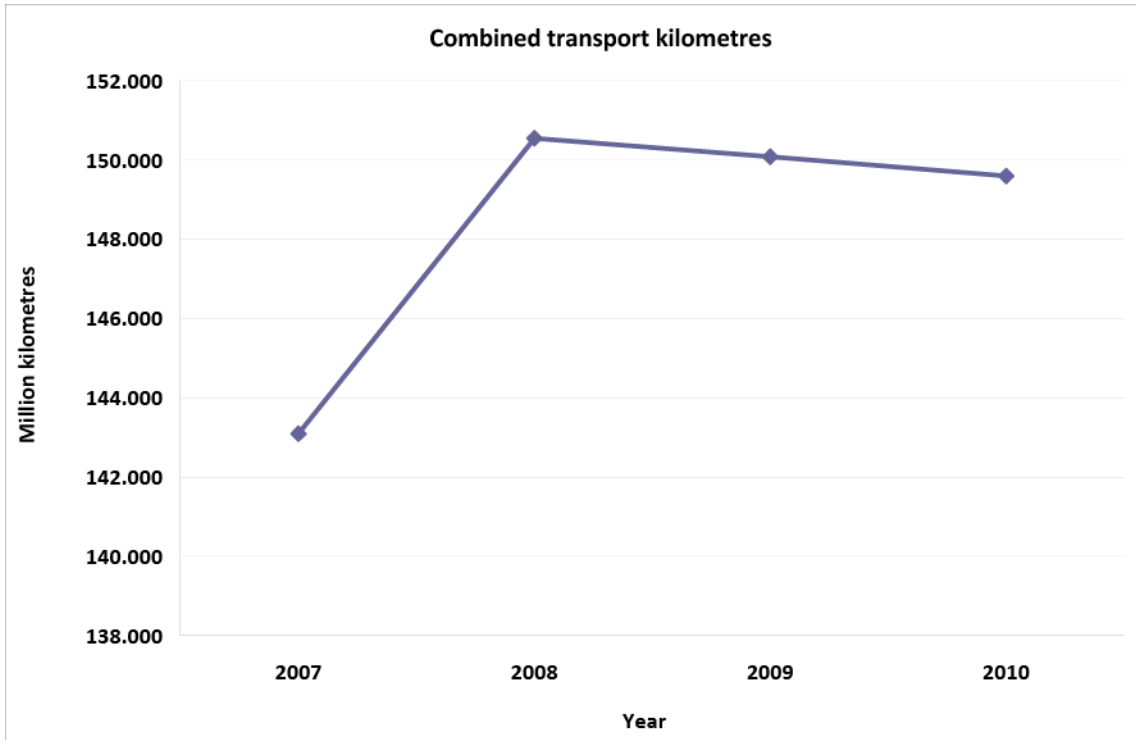
Graph 8: Passenger kilometres of passenger vehicles and buses.



Graph 9: Passenger kilometres METRO, ATHENS-PIRAEUS ELECTRIC RAILWAYS, TRAM and rail transport.



Graph 10: Tonne kilometres by type of transport.



Graph 11: Combined transport kilometres.

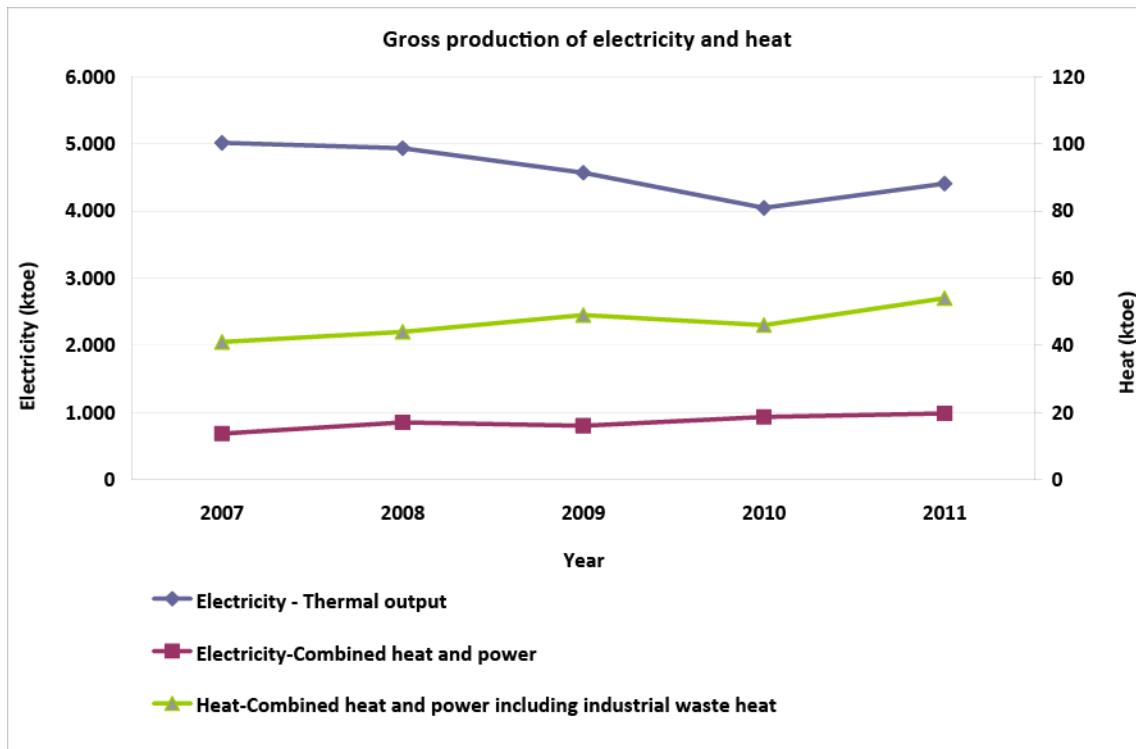
2.4. Heat and power data

According to official data from the Ministry of the Environment, Energy and Climate Change and from Eurostat, electricity generation from thermal power plants (Graph 12) showed a decreasing trend from 2007 to 2010, leading to a reduction of 19.3%. However, electricity generation increased by 9.0% in 2011 as compared to 2010. As shown in Table 6, this increase is due to the increase of electricity exports by 40.1% in 2011 as compared to 2010 and the reduction of electricity imports by 15.7% in the same period.

Electricity and heat generation through combined heat and power (CHP) plants showed an increasing trend in the period 2007-2011 amounting to 43.8% and 31.7% respectively. In like manner, electricity generation increased by 5.8% and heat generation increased by 17.4% in 2011 as compared to 2010. This increase in electricity and heat generation from combined power and heat plants is directly related to the operation of lignite thermal power plants, which contributed to the increase in electricity generation from thermal power plants in 2011 as compared to 2010 (Table 7). Finally, note that the heat generated by combined power and heat plants covers a very small percentage (1.4%) of the total heating needs of the domestic sector.

Energy (ktoe)	2007	2008	2009	2010	2011
Gross electricity generation from thermal power plants	5,013	4,931	4,568	4,044	4,406
Gross electricity generation from CHP plants	687	854	803	934	988
Gross heat generation from CHP plants	41	44	49	46	54
Electricity imports	551	651	653	732	617
Electricity exports	177	169	278	242	339
Electricity available for consumption	4,745	4,871	4,704	4,567	4,454

Table 6: Data on electricity and heat generation in the period 2007-2011.



Graph 12: Gross Heat and Power Generation.

Table 7 presents the fuel and energy forms used by thermal power plants in the period 2007-2011.

Fuel-energy form (ktoe)	2007	2008	2009	2010	2011
Solid fuel	8,333	7,945	8,223	7,567	7,681
Natural gas	2,453	2,495	1,817	2,061	2,390
Oil	2,183	2,147	1,631	1,255	1,186
RES	33	33	55	47	57
Industrial waste	6	4	4	32	28
Total	13,008	12,624	11,730	10,962	11,342

Table 7: Fuel consumption by thermal power plants.

The use of solid fuels in thermal power plants declined by 7.8% in the period 2007-2011, whereas an increase of 1.5% was observed in 2011 as compared to 2010 due to the increase of electricity output. A similar sustained declining trend is observed in the case of oil with a total reduction of 45.7% in the period 2007-2011. The use of oil in thermal power plants decreased by 5.5% in 2011 as compared to 2010. Natural gas shows a steadily increasing penetration, with the exception of a decline in 2009, reaching an overall increase of 2.6% in the period 2007-2011. However, the use of natural gas has increased by 16.0% in 2011 as compared to 2010.

The increasing trend in the use of Renewable Energy Sources (RES) is also noteworthy since, despite the 2010 reduction, RES use increased by 21.3% in 2011 as compared to 2010 mainly due to the increase in the use of biogas from landfills. The overall increase in the use of RES by thermal power plants in the period 2007-2011 amounts to 72.7%. Finally, in spite of the seven-fold increase recorded in 2010 as compared to 2009, the use of industrial waste decreased by 12.5% in 2011 as compared to 2010.

3. SETTING THE TARGET FOR IMPROVING ENERGY EFFICIENCY

3.1. General framework and target methodology

Pursuant to Article 3 of Directive 2012/27/EU, each Member State shall set an indicative national energy efficiency target for 2020, based on either primary or final energy consumption, primary or final energy savings, or energy intensity.

When setting the Greek national energy efficiency target for 2020 the following parameters were also taken into account:

- that the 2020 energy consumption for the EU-27 has to be no more than 1,474 Mtoe of primary energy or no more than 1,078 Mtoe of final energy;
- the measures provided for in Directive 2012/27/EU;
- the measures adopted to reach the national energy saving targets under Law 3855/10 in application of Directive 2006/32/EC.

A key element of the process for setting the national target was the identification of critical parameters and measures that should be taken into account in order to assess the development of the national energy system.

In particular, the procedure for calculating the national indicative target takes into account the national circumstances affecting primary and final energy consumption, as well as the projections for the development of the fundamentals of the Greek economy by 2020 and the energy mix as established to date. In addition, the development of the economic efficiency of technologies for energy efficiency by 2020 and the implementation of specific policies and actions in all energy sectors were taken into account for setting the national target.

In this context, the measures and actions included in the 1st and 2nd National Energy Efficiency Action Plans along with the relevant targets and actions set out in the National Renewable Energy Action Plan were also taken into account.

The quantitative analysis of the baseline scenario for setting the national energy efficiency target was carried out with the use of the mathematical models TIMES, WASP IV and COST.

The TIMES model is a bottom-up, demand-driven energy optimisation model that describes the entire energy sector of the country and, through specific assumptions about the evolution of the country's macroeconomic data, international energy prices, available energy technologies and the evolution of cost thereof as well as the course of implementation of measures for improving energy efficiency, it determines the combination of minimum cost technologies and energy types serving the useful energy demand under restrictions, such as the level of RES penetration, greenhouse gas emissions from the energy sector etc. Therefore, it is ultimately possible to simultaneously assess the energy and environmental policies on energy supply and demand.

The WASP model is used for a more detailed analysis of the power system. The WASP model indicates the least-cost power system to serve the expected electricity and power demand and ensure the economic viability of power plants.

Finally, the COST model is used for the chronological simulation of the power system operation. This model determines the load of power plants to ensure the smooth cooperation of RES plants with thermal power plants.

3.2. Assumptions of the calculation models

The key assumptions in relation to the macroeconomic and demographic data used in the calculation models of the national energy efficiency target are listed in Table 8 for the years 2010 - 2013, 2017 and 2020. These macroeconomic data include both total and per capita GDP, as well as value added at the national level and a breakdown thereof into economic activity sectors. In respect of demographic data, Table 8 indicates population and household developments for the period under consideration.

Macroeconomic Data	2010	2011	2012	2013	2017	2020
GDP (€ million at current prices)	222,152	208,532	193,749	184,062	188,767	209,290
Annual change rate of the GDP (%)		-6.13%	-7.09%	-5.00%	3.00%	3.50%
GDP per capita (€ at current prices)	19,646	18,420	17,095	16,221	16,559	18,296
Added Value (€ million at current prices)	195,223	183,137	170,521	161,995	166,137	184,199
Annual rate of change of value added (%)		-6.19%	-6.89%	-5.00%	3.00%	3.50%
Added Value (€ million at current prices): Sector Agriculture, forestry and fishing	6,300	5,910	5,503	5,227	5,361	5,944
Added Value (€ million at current prices): Sector Industry (except construction)	26,371	24,738	23,034	21,882	22,442	24,882
Added Value (€ million at current prices): Sector Construction	6,772	6,353	5,915	5,620	5,763	6,390
Added Value (€ million at current prices): Sector Wholesale and retail trade, transport, accommodation services and catering services	49,980	46,886	43,656	41,474	42,534	47,158
Added Value (€ million at current prices): Sector Information and communication	9,464	8,878	8,267	7,853	8,054	8,930
Added Value (€ million at current prices): Sector Financial and insurance activities	9,245	8,672	8,075	7,671	7,867	8,723
Added Value (€ million at current prices): Sector Real Estate	27,371	25,677	23,908	22,712	23,293	25,825
Added Value (€ million at current prices): Sector Professional, scientific and technical activities, administrative and support service activities	11,050	10,366	9,652	9,169	9,404	10,426
Added Value (€ million at current prices): Sector Public administration and defence; compulsory social security; education; human health and social work activities	39,628	37,175	34,614	32,883	33,724	37,391
Added Value (€ million at current prices): Sector Arts, entertainment and recreation services, repair of household goods and other services	9,041	8,482	7,897	7,503	7,694	8,531
Demographic Data	2010	2011	2012	2013	2017	2020
Population (thousands)	11,308	11,300	11,334	11,347	11,400	11,439
Annual growth rate (%)		-0.067%	0.299%	0.116%	0.116%	0.115%
Number of households (thousands)	3,836	3,840	3,844	3,848	3,865	3,878

Table 8: Table of calculation model assumptions.

3.3. Target definition

Based on the results from the implementation of the energy model for setting the national energy efficiency target, the 2020 target was defined as achieving final energy consumption of 20.5 Mtoe. The target was set on the basis of final energy consumption, bearing in mind that the latter determines energy requirements and demand. In addition, the calculation models used for forecasting the development of the energy system provide more effective simulations of final energy consumption. Furthermore, in accordance with the requirements of Directive 2012/27/EU, forecasts on primary energy consumption and estimations on the energy intensity of the Greek economy for 2020 are also provided.

The 2020 target is based on the forecasts on the development of the Greek economic figures and on the **implementation of measures, actions and programmes for improving energy efficiency** and RES penetration and **achieving energy savings both in final consumption and primary energy generation.**

It is particularly significant that 2020 final and primary energy consumption estimations are significantly lower than those recorded in 2007 (Table 9).

It is also worth mentioning that primary energy consumption for 2020 is expected to remain at the low levels seen in 2011. In particular, significant improvements are expected in the energy development model, through a combination of its structural and technological features, as well as in the operation of the energy system at the level of primary energy generation and energy demand management.

Due to the contribution of economic development to the energy system of Greece, it is estimated that there will be a significant improvement of the primary energy intensity indicator (Table 9). In particular, in 2007, before the consequences of the financial recession were actually felt and prior to the implementation of the measures for improving energy efficiency, the primary energy intensity indicator was 0.138 toe/€. It is expected that by 2020 the robust growth rate of the Greek economy will lead to an improvement of the primary energy intensity indicator amounting to 6-6.5% (i.e. lower than 0.129 toe/€), demonstrating a steady transition to a more energy-efficient economic growth.

In respect of the final energy intensity indicator (Table 9), the 2020 forecasts are similar to the 2007 levels (0.098 koe/€), i.e. having a steady development. This trend may be justified by the fact that we are now moving from the first period in which the economic recession had severe consequences on final energy consumption, to a second period in which the improvement of energy efficiency and energy savings are compensated by the relative increase in demand due to the improvement of economic figures.

Table 9 illustrates the development of energy figures and indicators of energy intensity under consideration and the outturn data of the years 2007, 2009 and 2011, along with the respective forecasts for 2020 resulting through the process of setting the national indicative target under Directive 2012/27/EU.

	2007	2009	2011	2020 (Indicative national target under Directive 2012/27/EU)
Gross inland energy consumption (Mtoe)	31.6	30.7	27.9	27.8
Primary energy consumption (Mtoe)	30.8	29.8	27	27.1
Total final energy consumption (Mtoe)	21.9	20.5	18.8	20.5
Energy intensity of primary energy consumption (koe / €)	0.138	0.129	0.130	0.129
Energy intensity of final energy consumption (koe / €)	0.098	0.089	0.090	0.098

Table 9: Development of energy figures and indicative target