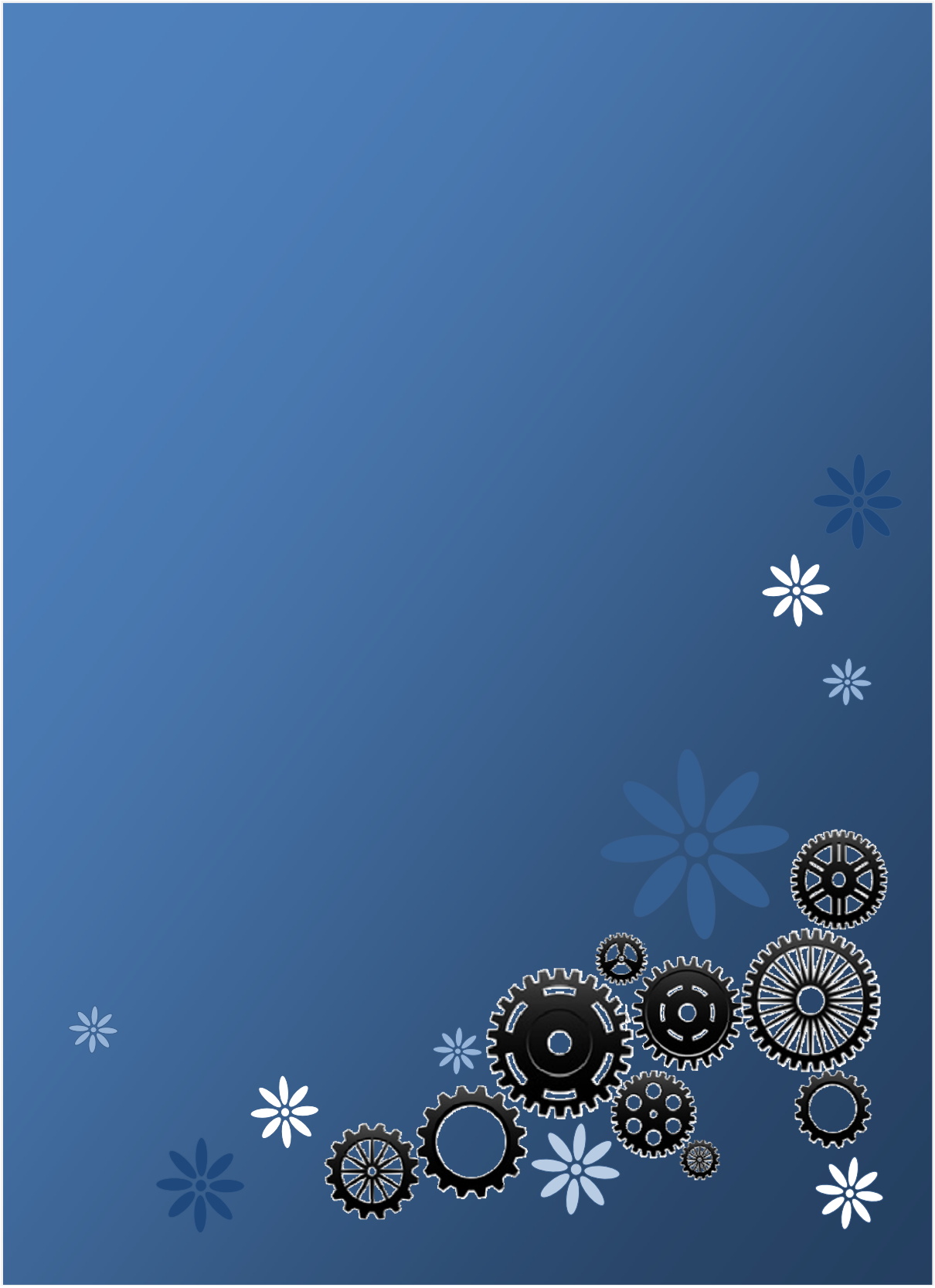
PLANO DE AÇÃO PARA A SUSTENTABILIDADE ENERGÉTICA EXECUTIVE SUMMARY



VIANA DO CASTELO

PREAMBLE

The county of Viana do Castelo is located within the Alto Minho region, characterized by its green sceneries, picturesque villages and steep hills.

From a scenic point of view, in Viana do Castelo, coexist distinct types of landscapes - riparian areas; mountains; coastal areas and plains. Typically Minhoto, luxuriantly green, possessor of fertile soils; of abundant vegetation and of a coastline of approximately 24km, Viana do Castelo was, from early on, intensely occupied by humans which, throughout the millennia, shaped its landscape. Inhabited since prehistory, Viana do Castelo encloses a vast and diverse archaeological-historical heritage. The *Citânia de Santa Luzia* or *Ruínas da cidade velha de Santa Luzia*; the *Igreja de Santa Cruz (São Domingos)*; the *Igreja de São Cláudio*; the *Misericórdia de Viana do Castelo*; the *Paços Municipais de Viana do Castelo*; the *Palácio dos Viscondes de Carreira* or *dos Távoras* or *Câmara Municipal de Viana do Castelo*; the *Casa de João Velho* or *dos Arcos*; the *Casa de Miguel de Vasconcelos* or *Casa dos Medalhões* and the *Chafariz da Praça da Rainha* are splendid examples of Viana's heritage, being classified by IGESPAR as National Monuments.

The Montedor's rock carvings; the *Monte do Castelo do Neiva* or *Castro de Moldes*; the *Castro de Sabariz*; the *Moinho do Petisco*; the *Moinho do Marinheiro* or *Moinho de Cima*; the *Pelourinho de Feira* or *Pelourinho de Lanheses*; the *Casa dos Werneck*; the *Casa dos Costa Barros* (Manueline-style building facade); the *Casa da Praça* or *Casa da Capela das Malheiras*; the *Casa da Torre das Neves* or *Casa da Torre de Nossa Senhora das Neves*; the *Fortim da Areosa*; the *Fortim de Montedor* or *Forte Paçô*; the *Forte* or *Castelo de Santiago da Barra*; the *Castelo de Portuzelo*; the *Convento de São João de Cabanas* (including forest and surroundings); the *Igreja Paroquial de Santa Leocádia de Geraz do Lima*; the *Igreja Matriz de Viana do Castelo*; the *Igreja de Nossa Senhora do Carmo* (including cloister and chapel therein with its woodcarving and imaginary); the *Cruzeiro do Adro do Convento de São Francisco do Monte* and the *Cruzeiro de Santa Marta* are other examples of the county's wealthy archaeological-historical heritage being classified by IGESPAR as Real Estate of Public Interest.

Being a coastal county, Viana do Castelo played an important strategic defensive role and, during the Portuguese Discoveries, became an important trading post - the flourishing maritime trade with Northern Europe involved the exportation of wines, fruits and salt, and the importation of silverware, textiles, tapestries and glass.

Also famous for its *Romaria de Nossa Senhora da Agonia (Senhora d'Agonia*) – which takes place in the city of Viana do Castelo, on an annual basis, during the month of August – for its religious procession at sea; for its riverside streets, decorated with carpets of flowers, as well as for its ethnographic costumes richly adorned with typical filigree, Viana do Castelo is, therefore, a county rich and diverse that, due to its characteristics and specificities, distinguishes itself from its counterparts.

The sensitivity for the "environmental" cause and the willingness to promote a simultaneously sustained and sustainable development are notorious and have driven the local authority's activities. Aware of the role it plays and its responsibility towards the people of Viana do Castelo, either as actor or as a model-entity and motivator, the municipality of Viana do Castelo decided to accept the challenge launched by the European Commission and, at its 29th April, 2011 meeting, decided to endorse the Covenant of Mayors, committing itself, like its European counterparts, to:

- go beyond the objectives set by the EU for 2020, reducing the CO_2 emissions in our respective territories by at least 20%;
- submit a Sustainable Energy Action Plan including a baseline emission inventory which outlines how the objectives will be reached;
- submit an implementation report at least every second year following the submission of the Action Plan for evaluation, monitoring and verification purposes;
- organise Energy Days or City Covenant Days, in co-operation with the European Commission and with other stakeholders, allowing citizens to benefit directly from the opportunities and advantages offered by a more intelligent use of energy, and to regularly inform the local media on developments concerning the action plan;
- attend the annual European Union Conference of Mayors, giving its contribution.

Accordingly, Viana do Castelo has promoted several actions which culminated in the drafting and approval of this document - entitled "*Plano de Ação para a Sustentabilidade Energética de Viana do Castelo*". In terms of content, this action plan makes a brief description of the county of Viana do Castelo, characterizes its energy consumption and production and indicates a set of actions/measures whose implementation will lead to a progressive CO_2 emissions reduction and, subsequently, to an improvement of Viana do Castelo's energy and environmental performance.

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Overall strategy

Plan content and structure

The "*Plano de Ação para a Sustentabilidade Energética de Viana do Castelo*" (hereinafter referred to by PASEVC) is a strategic document that shows how Viana do Castelo will honour the commitment of reducing its CO_2 emissions to 20% below the 2008 level by 2020.

With a geographic scope of action of 318.6 km^2, the PASEVC is an instrument of the outmost importance for improving the energy and environmental performance of Viana do Castelo. Being based on a thorough research and data treatment - that culminated in the drafting of the "*Inventário de Referência das Emissões de Viana do Castelo*" (hereinafter referred to by IREVC) - the PASEVC gathers and systematizes a set of measures and actions whose implementation will enable Viana do Castelo to meet its Covenant of Mayors' pledge. Because it is a plan for the whole territory, PASEVC includes:

- measures that rely entirely on the internal responsibility of the City Hall of Viana do Castelo (from now on referred to by MVC) or that can be implemented by entities participated by the MVC;
- measures in whose implementation the MVC has no intervention on, despite their contribution to the objectives set.

The structure of this document is as described in Table 1.

Table 1 - Structure of the document and a brief description of its contents.

Chapter	Subchapter	Contents
Territorial framework	-	Brief characterization of the county of Viana do Castelo both geographical and statistical.
Covenant of Mayors _ context and opportunity	Current context and vision for the future	Presentation of the vision for the county of Viana do Castelo in 2020 and of the reasons for the accession to the initiative Covenant of Mayors.
	Organisational aspects	Description of the methodology adopted in the preparation of both the IREVC and the PASEVC. Particular emphasis is given to the structure and "*modus operandi*" of the technical team and to the procedures adopted in order to assure the involvement of both stakeholders and citizens.
Current context and vision for the future	Synthesis of the diagnosis	Specification of: the origin of the data used; the assumptions made and the calculation methods used for the preparation of the IREVC. Moreover, characterization of both energy consumption and associated CO_2 emissions referring to 2008 (baseline year selected) and to Viana do Castelo.
	Towards 2020	Portray of both macro and local framework of the PASEVC. Description of the strategy that will enable the county of Viana do Castelo to meet the desired targets of CO_2 emissions (among other information, it is specified: which measures and actions need implementing; whose responsible for their implementation; which sources of funding are available for planned investments and how Viana do Castelo will monitor and evaluate the implementation of the PASEVC).
Conclusions	-	Brief summary of the main conclusions of the IREVC and of the PASEVC.
References and sources of information	-	List of the sources of information consulted in the preparation of both the IREVC and the PASEVC.

Still regarding IREVC and PASEVC content it is important to refer that, on their preparation, sources of CO_2 emissions other than those solely and exclusively related with the use and/or processing of energy weren't taken into account nor was it considered the potential contribution of sinks of CO_2 or of other greenhouse gases (GHG) to the aimed CO_2 emissions decrease.

A further comment to refer that, in the drafting of the IREVC and of the PASEVC, it was taken into account the content of the various supporting documents to the implementation of the initiative Covenant of Mayors by the signatories, produced by the Secretariat of the Covenant of Mayors, in particular the information necessary to fill in the "SEAP template". Accordingly it should be noted that the PASEVC has the year 2020 as time horizon and was structured taking into account the following sectors and subsectors:

- BUILDINGS, EQUIPMENTS / FACILITIES & INDUSTRIES
  "Municipal buildings, equipment/facilities"; "Tertiary (non municipal) buildings, equipment/facilities"; "Residential buildings"; "Municipal public lighting"
- TRANSPORT
  "Municipal fleet"; "Private and commercial transport"
- LAND USE PLANNING
  "Strategic urban planning"; "Transport/mobility planning"; "Standards for refurbishment and new development"
- PUBLIC PROCUREMENT OF PRODUCTS AND SERVICES
  "Energy efficiency requirements/standards"
- WORKING WITH CITIZENS AND LOCAL ACTORS
  "Advisory services"; "Financial support and grants"; "Awareness raising and local networking"; "Training and Education"

Objective(s) and Targets

As previously mentioned, through the implementation of the PASEVC, Viana do Castelo aims to reduce its CO_2 emissions to 20% below the 2008 level, by the year 2020.

Current framework and vision for the future

Environment has been regarded, for quite some time, as a priority by the municipality of Viana do Castelo. In Viana do Castelo, it is noticeable a well-organized and a long term effort on behalf of both the recovery and preservation of the territory's natural heritage and the improvement of municipal networks - from sewerage to water supply to footpaths, for example.

As far as Energy is concerned, for obvious reasons, energy consumption is, and has been for quite some time, a major concern of the municipality. Accordingly, over the years, several actions have been promoted aiming to enhance both energy efficiency and the usage of energy sources progressively more "environmentally friendly". For their intrinsic impact, emphasis should be given to the following domains and measures:

- Municipal public lighting – adjustment of operating hours; light bulb replacement; installation of dimmers, usage of LED technology;
- Mobility – construction of electric mobility inducing infrastructures; replacement of energy-inefficient vehicles by others hybrid and electric;
- Energy source – shift from heating oil and liquid gas to natural gas; placement of solar panels.

Aiming to do more and better for the sake of the county's sustainable development it is now important to define an integrated and concerted action strategy, guided by an accurate diagnosis, which deals solely and exclusively with energy issues and aims to reduce the county's energy consumption (with the subsequent effects on climate change).

Being aware of its role in mitigating the effects on the climate change, the municipality of Viana do Castelo decided, at its April 29th, 2011 meeting, to accept the European challenge and to sign the Covenant of Mayors. As a corollary of this act, Viana do Castelo committed itself to:

- go beyond the objectives set by the EU for 2020, reducing the CO_2 emissions in its respective territory by at least 20%;
- submit a Sustainable Energy Action Plan including a baseline emission inventory which outlines how the objectives will be reached, within one year of the adhesion date;
- submit an implementation report at least every second year following the submission of the Action Plan for evaluation, monitoring and verification purposes;
- organise Energy Days or City Covenant Days, in co-operation with the European Commission and with other stakeholders, allowing citizens to benefit directly from the opportunities and advantages offered by a more intelligent use of energy, and to regularly inform the local media on developments concerning the action plan;
- attend and contribute to the annual EU Conference of Mayors for a Sustainable Energy Europe.

Promoting energy efficiency and the use of renewable energy resources thus became understood as fundamental, aiming Viana do Castelo at "*being, in 2020, a model county in terms of energy, where the sustainable use of energy resources guide the performance, drive innovation, quality, attractiveness and competitiveness of both territory and entities there based, and enhance the quality of life of all those resident".*

Organizational and financial aspects

Coordination and organisational structures created/assigned

Given its profile and experience, the municipality of Viana do Castelo took over the coordination of the initiative Covenant of Mayors and carried out all the necessary procedures in order to obtain information on energy consumption and production, as well as to involve different sectors of activity in the development of both the IREVC and the PASEVC.

Staff capacity allocated

Aiming to ensure: all technical support; the production of all documentation and the organization of all necessary activities, and thus, ensure compliance with the targets set by Viana do Castelo upon the adhesion to the initiative Covenant of Mayors, a technical and multidisciplinary team was formed comprising the following institutions and elements:

- Municipality of Viana do Castelo (MVC) – besides the Mayor, Eng. José Maria Costa, and the alderman responsible for: Urban Management and Planning; Economic Development and Mobility (Traffic and Transportation), Arq. Luís Nobre, the municipality of Viana do Castelo allocated five elements of its senior staff to the initiative Covenant of Mayors;
- Serviços Municipalizados de Saneamento Básico de Viana do Castelo (SMSBVC) – besides the chairman of the board of directors, Eng. Vítor Lemos, one element of this municipal enterprise senior staff was allocated to the initiative Covenant of Mayors;
- Agência Regional de Energia e Ambiente do Alto Minho (AREA Alto Minho) – two elements of this energy agency collaborated with the Municipality of Viana do Castelo.

This technical team met as often as necessary in order to: define a joint action strategy; allocate responsibilities at each stage of the process; set targets and timings for implementation, assess obtained results and introduce adjustments whenever needed.

Furthermore, there was an involvement of the municipality of Viana do Castelo at three distinct stages of the process, namely: adhesion to the Covenant of Mayors (on April 29th, 2011); consolidation of the action plan and formal approval of the PASEVC (on October 17th, 2012).

Involvement of stakeholders and citizens

During the first year of adhesion, in addition to the municipality's employees, citizens and stakeholders [1] were involved. In order to inform, both citizens and stakeholders, about the commitments made by Viana do Castelo in the ambit of the Covenant of Mayors a set of information was produced and made available. Information and awareness sessions were also organized aiming to: present this European initiative; explain the Covenant of Mayors' implications and to collect contributions for the elaboration of both the IREVC and the PASEVC. Subsequently, was established a direct and individualized contact aiming to gather more detailed information for the elaboration of the action plan (thus, the PASEVC was the result of fairly participated consultation process enriched by the contributions given by various entities). Additionally, in order to mobilize citizens and institutions and to encourage the implementation of "environmentally friendly" solutions, several and diverse initiatives were promoted. For their contribution to the objectives of the PASEVC, emphasis should given to the placement of information alluding to the Covenant of Mayors on the municipality's official website and to the publication of several news on the municipality's official website, on local press and on social networks.

Foreseen financing sources for the investments within your action plan

Considering the measures within the PASEVC and given the specific financial instruments presently available, it can be foreseen that the annual public funding sources will be the Energy Efficiency Fund (EEF) and the funds to be allocated through the National Strategic Reference Framework (QREN). As far as private investment is concerned, the annual sources of funding may arise from incentives systems and from the Plan for Promoting Efficiency in Consumption (PPEC).

On the other hand, the JESSICA initiative (Joint European Support for Sustainable Investment in City Areas) and the ELENA Program (European Energy Local Assistance) could also support the implementation of some of the actions recommended in the PASEVC.

Finally and although not being, in itself, a source of funding, it must be pointed out the contribution that is to be expected from energy service companies (ESCOs) for the implementation of the PASEVC. At present, following the publication of the Council of Ministers Resolution No. 2 / 2011 of 01.12.2011, it is possible to hire energy service companies (ESCOs) to implement measures that lead to the improvement of energy efficiency in public buildings and equipments allocated to the provision of public services. Therefore, given the current Portuguese economic and financial situation, it is likely that such contracts may be celebrated in order to finance some of the investments within the PASEVC.

Planned measures for monitoring and follow-up

As previously mentioned (see the content of the item "Staff capacity allocated"), some resources were allocated to the preparation of the IREVC and of the PASEVC, by the MVC, by the SMSBVC and by AREA Alto Minho. Among other tasks, these entities collected, processed and systematized a great set of information on the consumption of various energy vectors and its consumers as well as on energy production and its producers. Furthermore, these entities: promoted and participated in information and awareness sessions; produced and disseminated information concerning the initiative Covenant of Mayors; compiled and systematized the various contributions, from various sectors, for the PASEVC. They are, therefore, motivated and familiar with the requirements of the Covenant of Mayors and with the commitments made. Therefore, it is expected that these same resources become involved in the tracking, monitoring and evaluation of the implementation of the PASEVC.

From an operational standpoint, the implementation of the PASEVC will be monitored and an implementation report will be submitted, at least every second year following the submission of the Action Plan, for evaluation, monitoring and verification purposes. To achieve this, a network of information exchange will be established and a "Centre for energy and environmental sustainability of the county of Viana do Castelo" will be created.

[1] For PASEVC purposes, stakeholders are an array of local and regional actors considered by the municipality to be 'strategically important'.

Since the implementation of PASEVC is essentially an interactive and joint process, it is expected that the reports and conclusions arising from its monitoring will be disclosed and discussed with all partners from different sectors and with the Viana do Castelo's citizens, thus becoming a means to assess the degree of compliance, to promote discussion and to improve the PASEVC's execution. The municipality of Viana do Castelo through its website and other communication tools at its disposal will assure the compilation and dissemination of obtained results.

Regarding municipal energy consumption and production – i.e. those associated with the "Municipal buildings, equipment/facilities" and "Municipal Fleet" - the monitoring of the measures/actions within the PASEVC will be carried out by some of the elements of Viana do Castelo's covenant of mayors' technical team. In order to meet all the necessary requirements, in the standards and procedures already implemented in the municipality of Viana do Castelo adjustments will be introduced and issues related to the monitoring and implementation of the PASEVC will be incorporated.

Finally, it should be noted that the PASEVC:

- is a medium-long term plan;
- involves a broad number and a wide variety of players;
- is based on a set of assumptions that are likely to change from now until 2020,

therefore, it may be necessary to make some alterations to its content in order to adjust it to the different realities that might arise during the course of its implementation. The opportunity to apply corrective actions should be systematic and always aim to improve and not just be an expression for the correction of deviations or errors, may they be motivated by a lack of information or the natural changes that occur in the society, whose nature may be technological, structural or economic.

Baseline Emission Inventory

According to the SEAP template instructions, statistical data was gathered, processed and then allocated to the following categories and subcategories:

- "Buildings, equipment/facilities and industries": *"Municipal buildings and equipment/facilities"; "Tertiary (non municipal) buildings, equipment/facilities"; "Residential buildings"; "Municipal public lighting";*
- "Transport": *"Municipal fleet"; "Public transport"; "Private and commercial transport".*

Synthesis of the Diagnosis

The IREVC is a prerequisite to the development of PASEVC. In this document and according to the content of the supporting documents produced by the Secretariat of the Covenant of Mayors, both energy production and consumption should be characterized for a given baseline year. However, due to lack of complete, official and reliable statistical information which allow to determine and characterize Viana do Castelo 2008th "energy production" it was only possible to incorporate on the IREVC the information alluding to "energy consumption".

Because it integrates a large set of quantitative information, alluding both to the energy consumption and to their associated CO_2 emissions, specified by energy carrier and by category of consumption, the IREVC allows, on one hand to identify the nature of the issuers of CO_2 and, on the other, to adjust to Viana do Castelo a strategic plan which aims to improve this territory's energy and environmental performance. In the future, IREVC will be an instrument of paramount importance assessing both the implementation of the PASEVC as well as the effectiveness of measures adopted.

Methodology

In order to maximize the reliability of the IREVC, official statistical information, published by DGEG, was used whenever possible. In the case of the municipal energy consumption – i.e. that associated with "Municipal buildings and equipment/facilities" and "Municipal fleet" - were considered those concerning the operation of the local authority itself and the consumption values were obtained through interpretation of the various invoices related to the energy consumption incurred in the year 2008 [2]. Thus, it was processed the information listed in Table 2.

Table 2 – List of the information processed and its origin.

Designation	Indicator used	Period	Source of information
Electricity	Electricity consumption (kWh) by economic sector of activity	1994-2008	DGEG
	Electricity consumption (kWh) by type	2008	DGEG
	-	2008	MVC and SMSBVC (supplier invoices)
Natural Gas	Natural Gas Consumption (10^3Nm^3) *per* county	2001-2008	
	-	2008	MVC and SMSBVC (supplier invoices)
Fossil Fuel / Bio fuel	Fuel Consumption *per* county (tonnes)	1990-2007	DGEG
	Sales of liquid and gaseous fuels (tonnes) by location and type of fuel	1990-2008	INE
	Sales of Petroleum Products in the Internal Market by county and economic sector of activity in 2008 (tonnes)	2008	DGEG
	-	2008	MVC and SMSBVC (supplier invoices)

[2] 2008 was the chosen baseline year for the inventory, being this the closest year to 1990 for which the most comprehensive and reliable data could be collected.

The data was processed for each energy carrier and four types of analysis were promoted, namely:

- evolutionary analysis of the consumption in the county of Viana do Castelo for the time series of available data;
- percentage distribution of the consumption in 2008 in the county of Viana do Castelo by sector of economic activity;
- percentage distribution of the consumption in 2008 in the county of Viana do Castelo by category;
- disaggregation of energy consumption registered and of its associated CO_2 emissions, for 2008 in the county of Viana do Castelo, by category.

It's important to state that:

- for the conversion of the various units of measure available to MWh, were used the conversion factors and net calorific values available on the website of DGEG;
- for calculating CO_2 emissions, it was used, whenever possible, emission factors contained in the "*Technical Annex to the SEAP template instructions document: the emission factors*" - when unavailable, were used those contained in Order No. 17313/2008 of June 26.

Concerning the activity sectors considered on the preparation of the IREVC and, subsequently, the PASEVC, and given the freedom which is given to the "Covenant of Mayors" signatories to include or exclude "Industry", Viana do Castelo chose to exclude it. It should however be referred that the criteria used to select which sectors of activity correspond to the category "Industry" was, in essence, the one used by INE in preparing the "*Contas nacionais*" (namely the "E.6.2 *Contas da Energia*" of the "E.6 *Contas Satélite do Ambiente*"). Thus, the statistical sections / divisions processed are those listed in Table 3.

Table 3 - List of sectors included in the analysis of the IREVC and the PASEVC

Section	Designation	Section /division relationship
A	Agriculture, forestry and fishing	01+02+03
E	Water supply; sewerage, waste management and remediation activities	36+38
F	Construction	41+42+43
G	Wholesale and retail trade, repair of motor vehicles and motorcycles	45+46+47
H	Transportation and storage	49+50+52
I	Accommodation and food service activities	55+56
J	Information and communication	58+59+60+61+62
K	Financial and insurance activities	64+65+66
L	Real estate activities	68
N	Administrative and support service activities	70+72+75+77+79+81+82
O	Public administration and defence; compulsory social security	84
P	Education	85
Q	Human health and social work activities	86+87+88
R	Arts, entertainment and recreation	90+91+93
S	Other service activities	94+96
T	Activities of households as employers; undifferentiated goods – and services – producing activities of households for own use	98
U	Activities of extraterritorial organizations and bodies	99

Thus:

- on the analysis carried out and wherever possible, in addition to being considered the total consumption was considered the partial consumption (resulting on the deduction of the "Industry" consumption);
- on the disaggregated consumption analysis - either by sector or by category - was processed only the partial consumption.

Consumption and Emissions

Electricity

The graph in Figure 1 reflects the evolution of the electricity consumption registered in the county of Viana do Castelo.

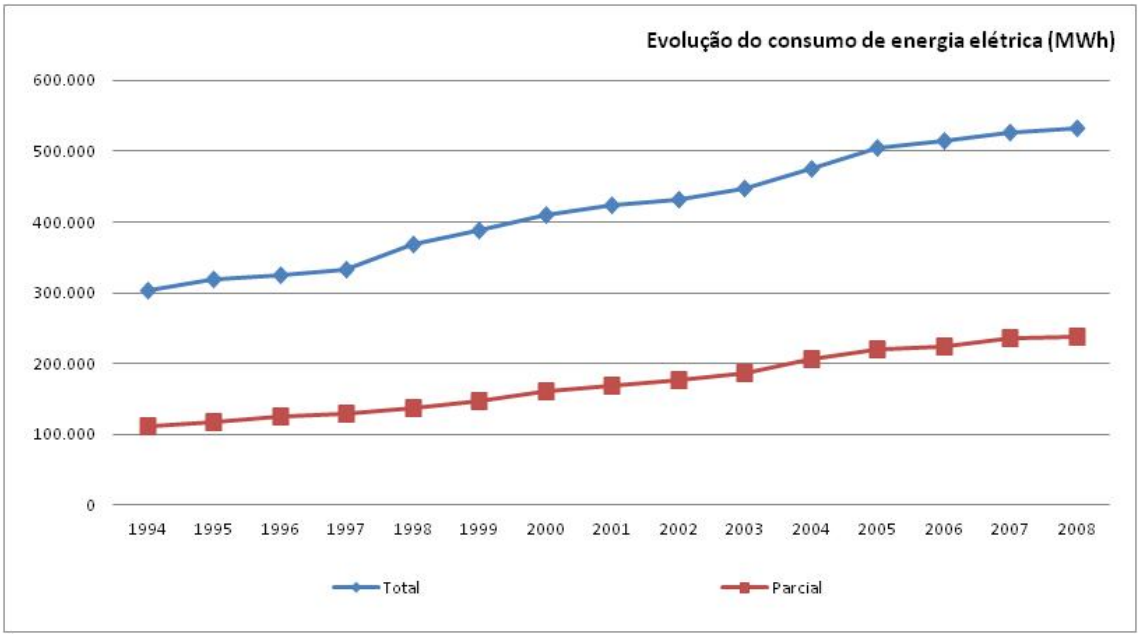

Figure 1 - Evolution of electricity consumption in Viana do Castelo (total and partial).
(Source: http://www.dgeg.pt)

Through analysis of the graph in Figure 1 it can be concluded that electricity consumption in the county of Viana do Castelo steadily increased until 2008 - year which registered the highest consumption level of this energy carrier. Moreover, by comparing total and partial values one can perceive that the evolutionary trend is analogous and that the contribution from "Industry" is quite significant - on average, "Industry" is responsible for approximately 59% of total electricity consumption in Viana do Castelo.

By processing available statistical data on electricity consumption, in 2008 and in Viana do Castelo, with and without "Industry" (total and partial, respectively) the graph in Figure 2 is obtained.

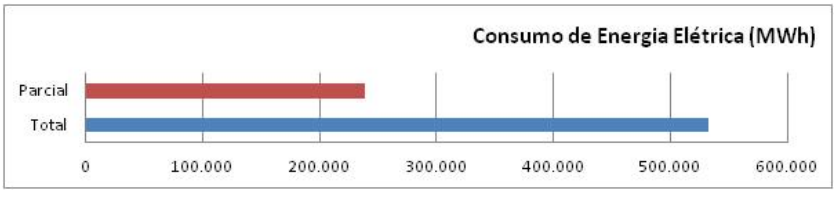

Figure 2 – Electricity consumption in 2008 and in Viana do Castelo (total and partial values).
(Source: http://www.dgeg.pt)

After deducting electricity consumption from "Industry" and splitting the remaining fraction by sector of economic activity, the graph in Figure 3 is obtained.

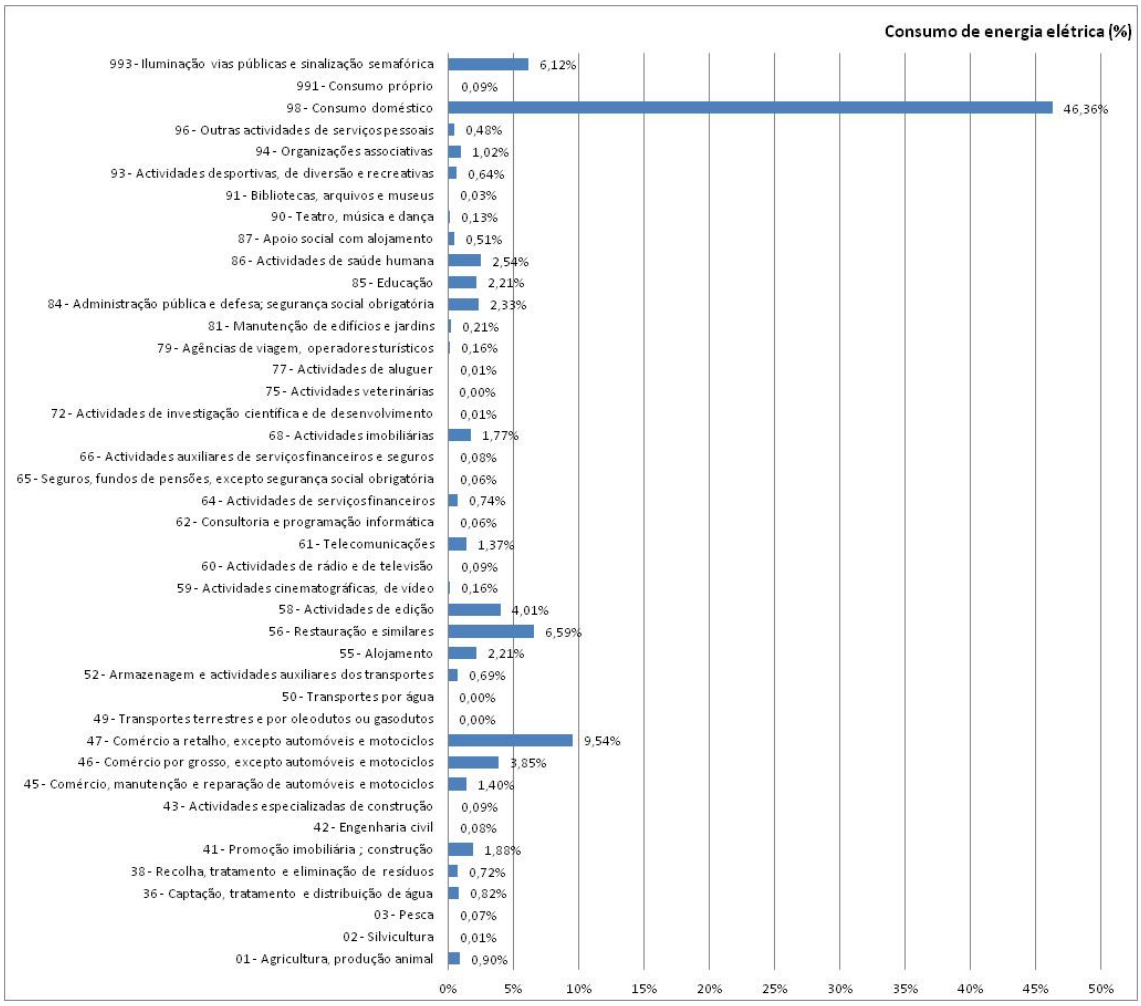

Figure 3 - Distribution of electricity consumption percentage by sector of economic activity.

Comparing each sector's energy consumption, it is possible to perceive that in Viana do Castelo in 2008 the sector which registered the highest values was "98 – Undifferentiated goods and services-producing activities of private households for own use"; followed by "47 - Retail trade, except of motor vehicles and motorcycles" and then by "56 - Food and beverage service activities" - with percentages of 46.36, 9.54 and 6.59%, respectively.

Splitting the consumption values for the energy carrier in question and for the year 2008 by category yields the following percentage distribution (see graph in Figure 4).

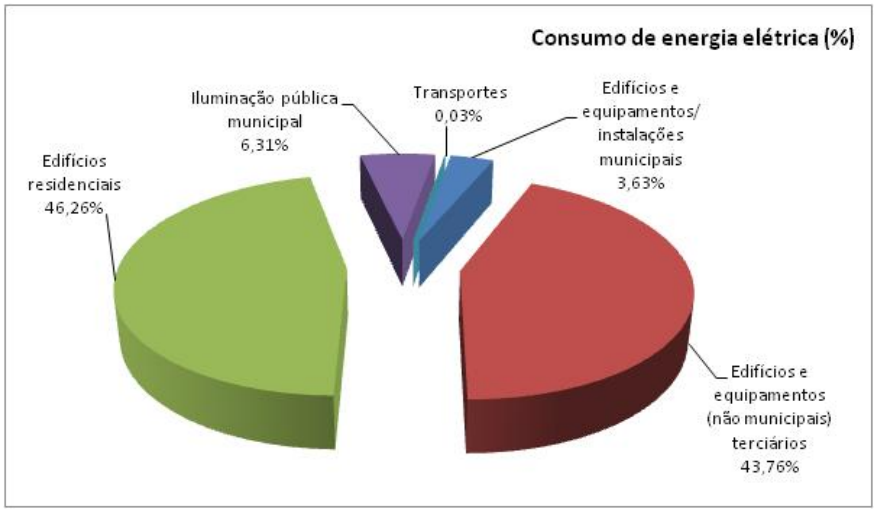

Figure 4 - Disaggregation of electricity consumption, registered in 2008 and in Viana do Castelo, by category.

As expected, in the county of Viana do Castelo in 2008, the most electricity consuming category corresponds to "Residential buildings" – with a percentage of, approximately, 46.26% [3]. It should also be stated that the percentage of the category "Municipal public lighting" is greater than that of the "Municipal buildings, equipment/facilities" – 6.31 and 3.63% respectively.

Table 4 summarizes the disaggregation, by category, of the registered electricity consumption and its associated CO_2 emissions.

Table 4 - Final energy consumption and its associated CO_2 emissions, for the energy carrier "electricity", disaggregated by category.

Category	Final Energy Consumption (MWh)	CO_2 Emissions (t)
Municipal buildings, equipment/facilities	8632.89	3185.54
Tertiary (non municipal) buildings, equipment/facilities	104086.84	38408.05
Residential buildings	110040.10	40604.80
Municipal public lighting	15019.07	5542.04
Transport	80.76	29.80

A further comment to reference that, in determining the CO_2 emissions associated with energy carrier "electricity", the emission factor used was 0.369 t CO_2/MWh.

Natural Gas

The graph in Figure 5 reflects the evolution of natural gas consumption registered in the municipality of Viana do Castelo since this fossil fuel was first marketed in 2005.

[3] The percentage values of electricity consumption in the category "Residential buildings" and in the sector of economic activity "98 – Undifferentiated goods and services-producing activities of private households for own use" - 46.36 and 46.26%, respectively - differ because the electricity consumption value associated with "Municipal public lighting" collected by the municipality is higher than that provided by DGEG - 15,019.07 vs 14,519.96 MWh ... with the subsequent affectation in the distribution percentage for the remaining categories.

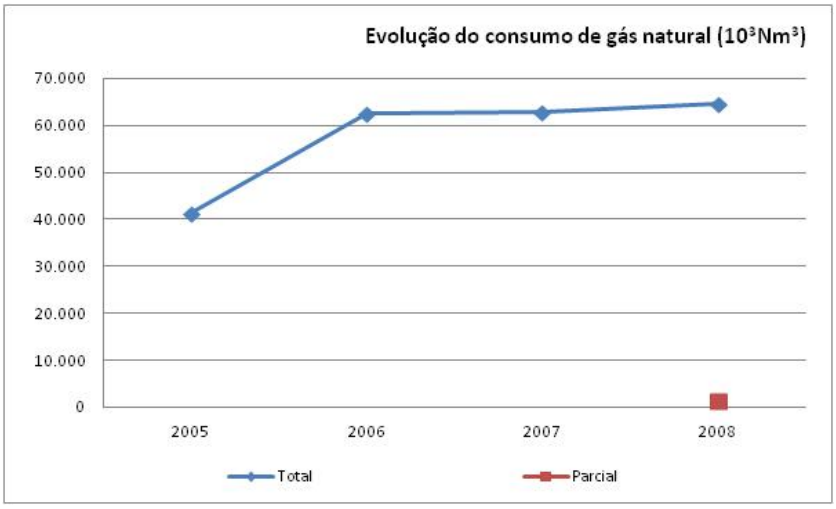

Figure 5 - Evolution of natural gas consumption registered in the municipality of Viana do Castelo (total and partial).
(Source: http://www.dgeg.pt)

The analysis of the total natural gas consumption in the municipality of Viana do Castelo shows a significant increase of the values recorded from 2005 to 2008 followed by a plateau from then onwards.

Given the fact that DGEG only has available information for the year 2008, of statistical nature, on the disaggregation of natural gas consumption by sector of economic activity, only for this year it is possible to deduce the consumption of natural gas from "Industry".

By processing available statistical data on natural gas consumption, in 2008 and in Viana do Castelo, with and without "Industry" (total and partial, respectively) the graph in Figure 6 is obtained.

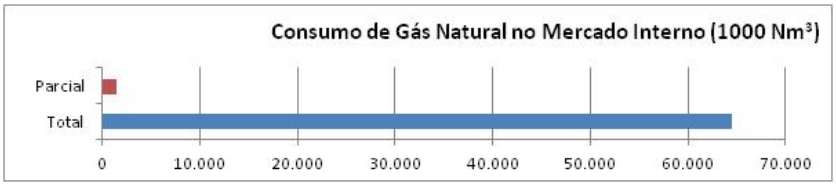

Figure 6 – Natural gas consumption in 2008 and in Viana do Castelo (total and partial values).
(Source: http://www.dgeg.pt)

Thus, comparing total and partial values, it is possible to perceive that, in 2008 and in the case of Viana do Castelo, the differential is of 97.82%, - i.e. the use of natural gas in other sectors of economic activity other than "Industry" is insignificant.

Once deducted the natural gas consumption from "Industry" and split the remaining fraction by sector of economic activity, the graph in Figure 7 is obtained.

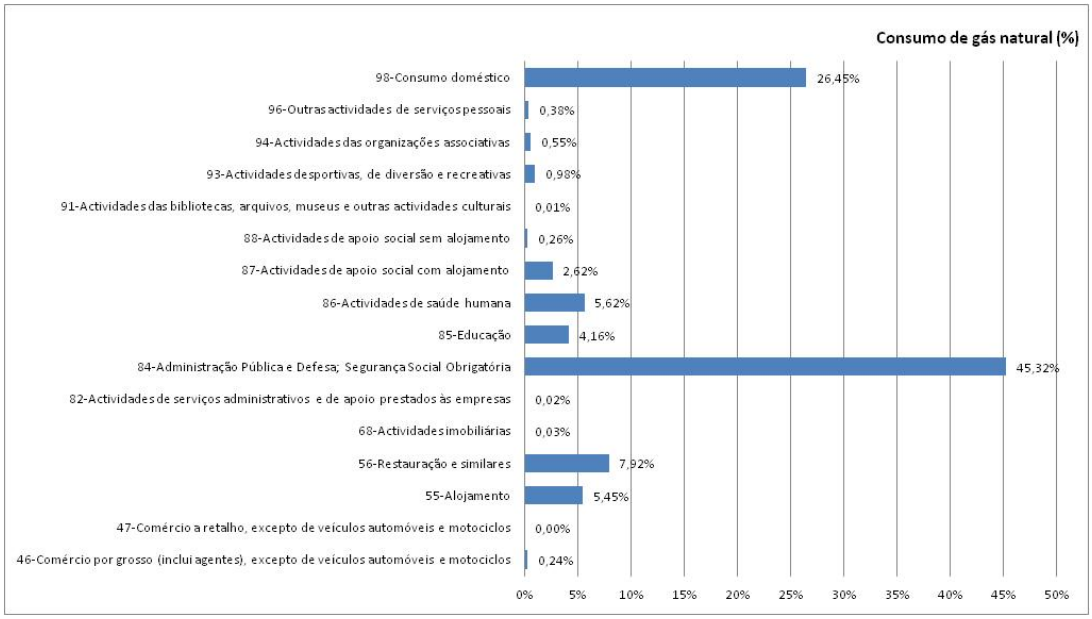

Figure 7 - Distribution of the percentage of natural gas consumption by sector of economic activity.

Through the analysis of the information in the graph in Figure 7 it can be perceived that most of the natural gas consumption registered in the municipality of Viana do Castelo in 2008 is associated with the sector of economic activity "84 - Public administration and defence; compulsory social security", followed by "98 – Undifferentiated goods and services-producing activities of private households for own use" - with percentages of, respectively, 45.32 and 26.45%.

Disaggregating consumption values related to the energy carrier in question and to the year 2008 by category yields the following distribution percentage (see graph in Figure 8).

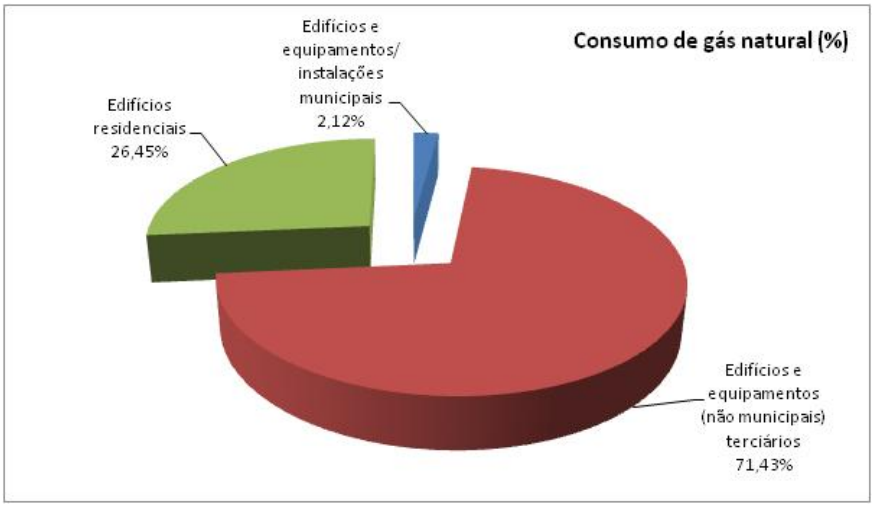

Figure 8 - Disaggregation of natural gas consumption, registered in 2008 and in Viana do Castelo, by category.

Graph in Figure 8 indicates that 71.43% of the total natural gas consumption refers to the category "Tertiary (not municipal) buildings, equipment/facilities", corresponding, the remaining fraction, to the categories "Residential buildings" and "Municipal buildings, equipment/facilities" - with percentages of about, respectively, 26.45 and 2.12%.

Table 5 summarizes the disaggregation by category of the consumption of natural gas and associated CO_2 emissions.

Table 5 - Final energy consumption and its associated CO_2 emissions, for the energy carrier "natural gas", disaggregated by category.

Category	Final Energy Consumption (MWh)	CO_2 Emissions (t)
Municipal buildings, equipment/facilities	346.86	70.07
Tertiary (non municipal) buildings, equipment/facilities	11684.61	2360.29
Residential buildings	4326.17	873.89

A further comment to refer that, in determining the CO_2 emissions associated with energy carrier "natural gas" the emission factor used was 0.202 t CO_2/MWh.

Fossil fuels

In the particular case of fossil fuels, it should be noted that once crossed the information available on the websites of DGEG and of INE, the values for the indicators "Fuel Consumption by Municipality (tonnes)" and "Sales of liquid and gas (tonnes) of the companies by location and type of fuel" are equal, so it can be inferred that those institutions have considered, for statistics purposes, that:

- all the fuel acquired in Viana do Castelo was consumed in Viana do Castelo;
- all the fuel consumed in Viana do Castelo was acquired in Viana do Castelo.

Although this does not necessarily reflect the reality of Viana do Castelo, in the absence of other reliable information - which allowed a more rigorous way to measure the real consumption of this energy carrier and allocate it to the various sectors - in order to prepare the IREVC was used the data corresponding to "Sales of Petroleum Products in the Internal Market by county and economic sector of activity in 2008", from DGEG - it should however be referred that this indicator is strongly influenced by the price *per* unit which is practiced by the economic agents involved.

The graph in Figure 9 reflects the evolution of fossil fuel consumption/sales, total and disaggregated by fuel, registered in the county of Viana do Castelo in the period 1990-2008.

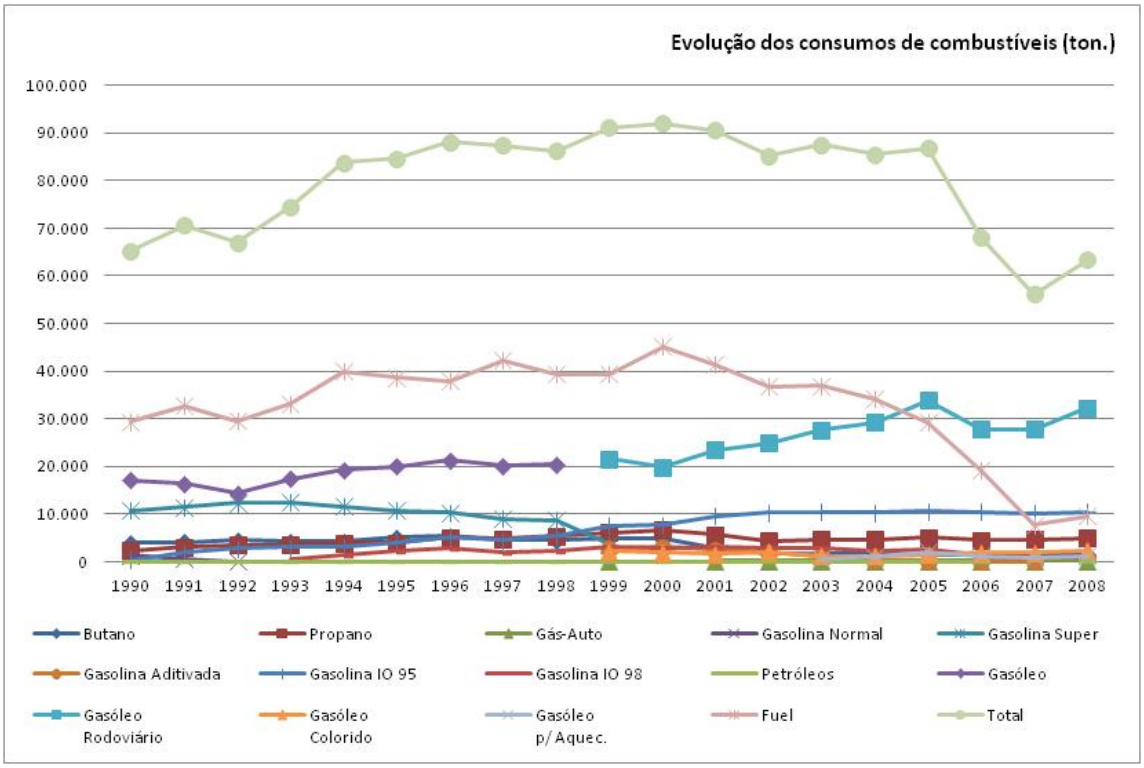

Figure 9 - Evolution of fossil fuels consumption/sales registered in Viana do Castelo (total and disaggregated by type of fuel).
(Source: http://www.dgeg.pt)

The analysis of the information in the graph in Figure 9 shows that:

- there is a significant variation in the consumption/sales of petroleum products during the period 1990-2008;
- the oscillation registered on the total fossil fuel consumption was mainly driven by the variations which occurred in the consumption of "thick fuel oil 1%" and "diesel" - maximum and minimum peaks corresponding, respectively, to the years 2000 and 2007;
- until 2004 the most consumed/sold fossil fuel in the county of Viana do Castelo was "thick fuel oil 1%" - from then onwards the most sold / consumed fossil fuel became "diesel";
- there was a substantial decrease in "thick fuel oil 1%" consumption/sales from 2003 onwards, having recorded its minimum value in 2007;
- "diesel" sales recorded its maximum value in 2005;
- except for "thick fuel oil 1%" and "diesel" the consumption/sales of fossil fuels remained relatively unaltered within the period 2001-2008.

Proceeding to the percentage breakdown of the amount of fossil fuels sold in Viana do Castelo in 2008 it is noticeable, as would be expected, the predominance of "diesel" sales, followed by "gasoline IO95" and "thick fuel oil 1%", with percentages of, respectively, 50.63; 16.60 and 15.10% (as shown in Figure 10).

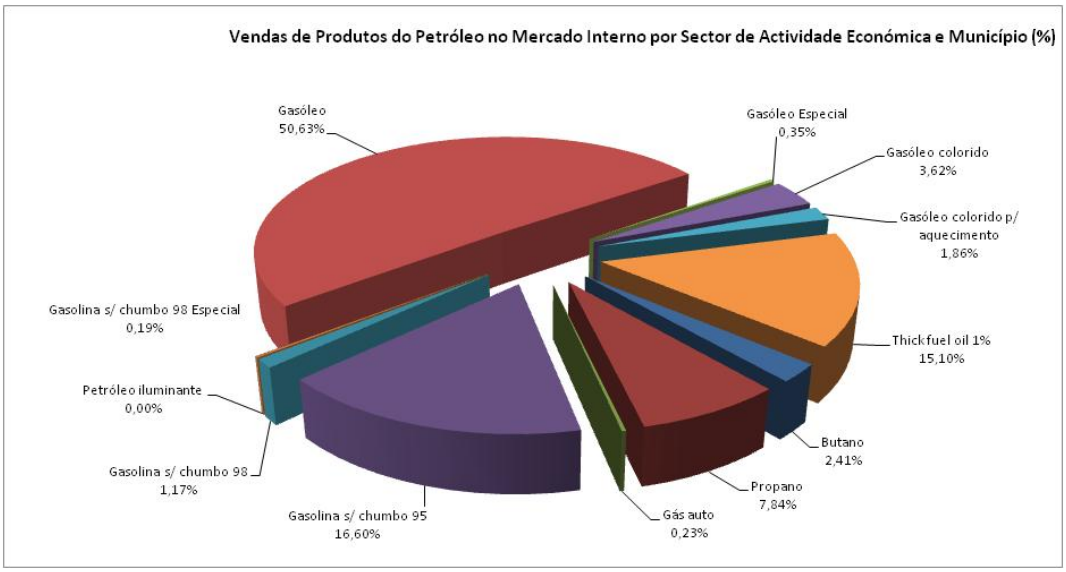

Figure 10 – Disaggregation of fossil fuels sales, registered in 2008 and in Viana do Castelo, by product.

As for the disaggregation of the sales of petroleum products in the domestic market by sector of economic activity, the information is available only for the year 2008 - hence it is not possible to carry out an evolutionary analysis by sector of economic activity.

After processing the information related to fossil fuel sales in Viana do Castelo in 2008, with and without "Industry" (total and partial, respectively) it is possible to obtain the graph in Figure 11.

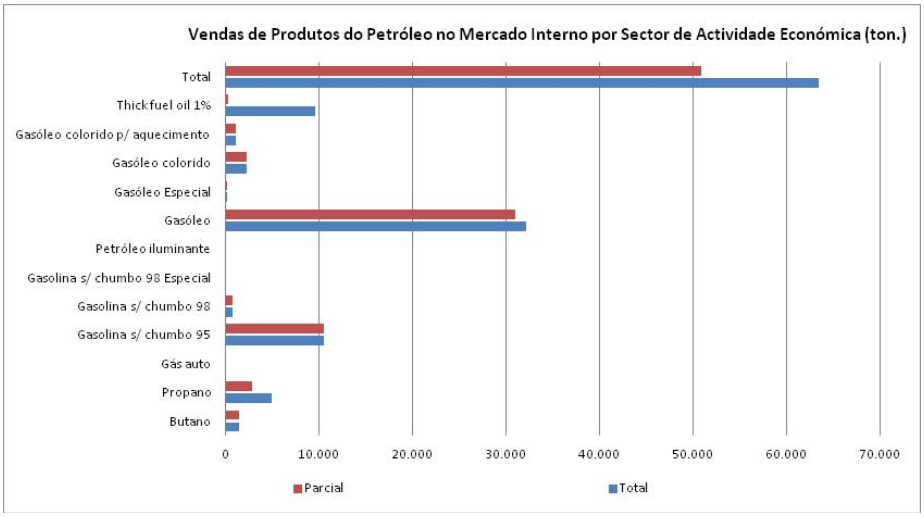

Figure 11 - Fossil fuels sales in 2008 on the county of Viana do Castelo (total and partial).
(Source: http://www.dgeg.pt)

Through interpretation of the information expressed in Figure 11 it is clear that the contribution from "Industry" to the total fuel consumption registered in the county of Viana do Castelo in 2008 is significant and that the most notorious differences are related, in descending order of importance, with the sales of "thick fuel oil 1%"; "propane" and "diesel".

Once deducted the contribution of "Industry" from the total petroleum products sales for the year 2008 in Viana do Castelo and split the remaining fraction by economic sector of activity, the graph in Figure 12 is obtained.

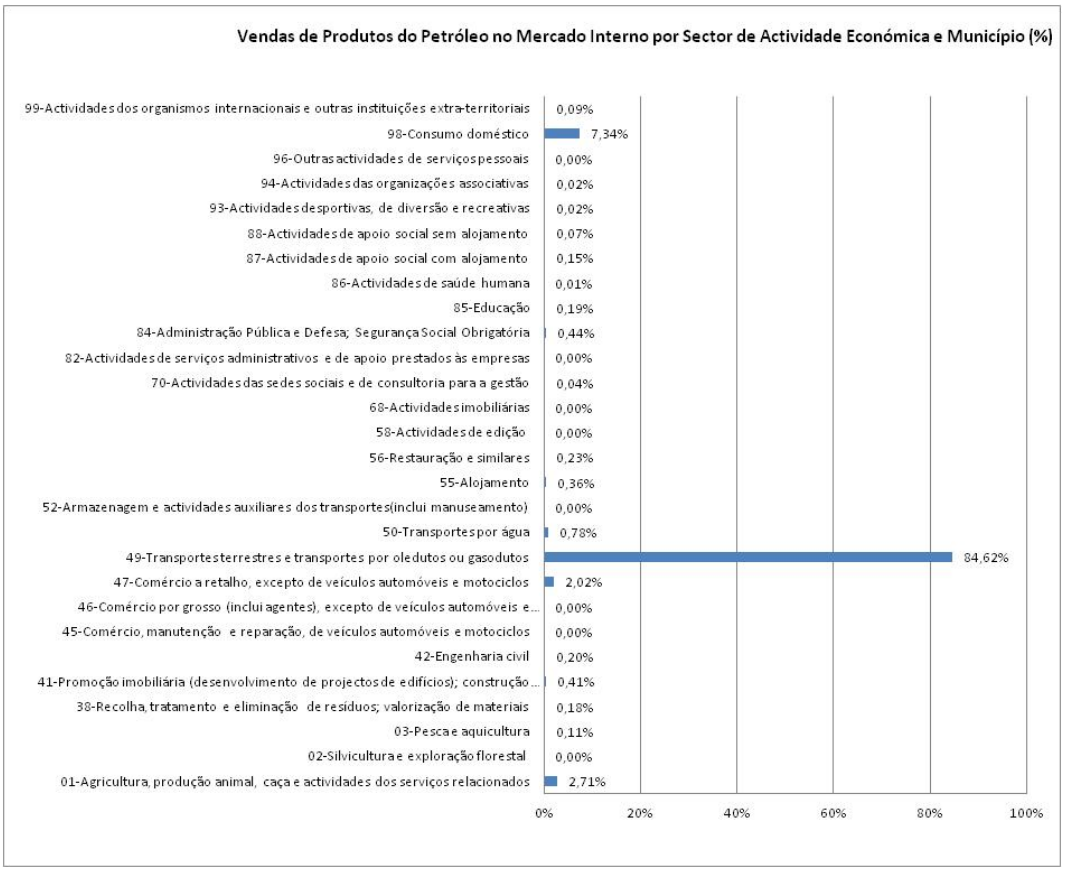

Figure 12 - Distribution of the percentage of fossil fuel sales per economic sector of activity.

By analysing the information contained in Figure 12, it can be perceived that 84.62% of the fossil fuel sales in Viana do Castelo can be allocated to the economic sector of activity "49 - Land transport and transport via pipelines". Although with significantly lower percentages – 7.34, 2.71 and 2.02%,, respectively – follow the economic sectors of activity: "98 – Undifferentiated goods and services-producing activities of private households for own use"; "01 - Crop and animal production, hunting and related service activities" and "47 - Retail trade, except of motor vehicles and motorcycles".

It should be stated that the amounts corresponding to "98 – Undifferentiated goods and services-producing activities of private households for own use" only aggregate information regarding the gases "propane" and "butane" - in other words, they do not include fuel used by families to travel in motor vehicles (which are allocated, for statistical purposes, to the economic sector of activity "49 - Land transport and transport via pipelines").

By disaggregating the values of fossil fuel sales in 2008 by category the following percentage distribution is obtained (see Figure 13).

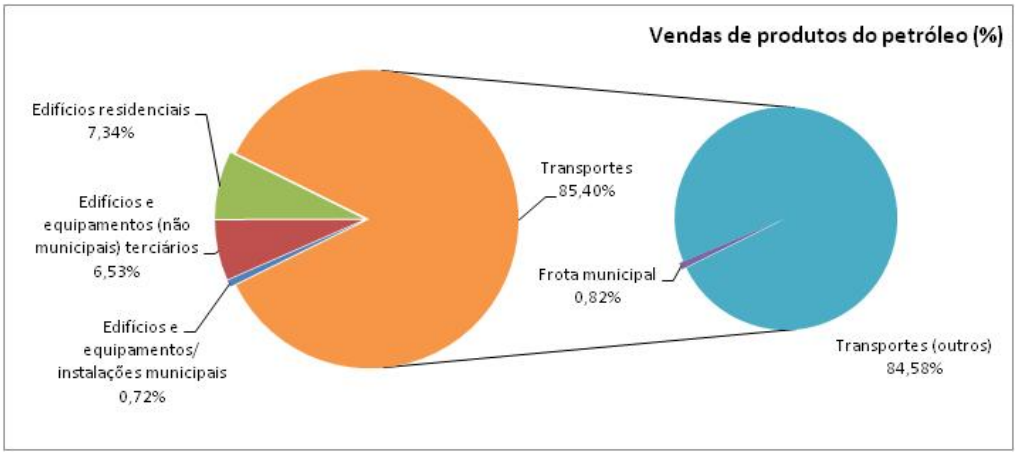

Figure 13 – Disaggregation of fossil fuel sales, registered in 2008 and in Viana do Castelo, by category.

Upon analysis of the graph in Figure 13 it is possible to perceive that the most fossil fuel consuming category corresponds to "Transport" followed by "Residential buildings" - accounted for, respectively, 85.40 and 7.34% of the total of petroleum products sales.

Table 6 summarizes the disaggregation by category of "fossil fuels" consumption, in the county of Viana do Castelo in the year 2008, and its associated CO_2 emissions.

Table 6 - Final energy consumption and its associated CO_2 emissions for the energy carrier "fossil fuels", disaggregated by category.

Category	Final Energy Consumption (MWh)	CO_2 Emissions (t)
Municipal buildings, equipment/facilities	4387.22	1098.27
Tertiary (non municipal) buildings, equipment/facilities	39657.51	10215.33
Residential buildings	44558.23	10107.69
Municipal public lighting	0.00	0.00
Transport	518326.48	135815.65

An additional comment to refer that, in determining the CO_2 emissions associated with energy carrier "fossil fuels", the emission factors used were:

- Liquid gas - 0.227 t CO_2/MWh;
- Heating oil - 0.267 t CO_2/MWh;
- Diesel - 0.267 t CO_2/MWh;
- Gasoline - 0.249 t CO_2/MWh;
- Other fossil fuels - 0.279 t CO_2/MWh.

Renewable energy

Until the year 2008, on the statistical point of view and *per* municipality, there are no records of renewable energy consumption and, in 2008, there are only those related to biodiesel. Indeed, according to the information provided by DGEG, approximately seventeen tonnes of biofuel were sold to the sector of economic activity "47 - Retail trade, except of motor vehicles and motorcycles".

Table 7 summarizes the disaggregation by category of biofuel consumption registered in the municipality of Viana do Castelo in 2008 and its associated CO_2 emissions.

Table 7 - Final energy consumption and its associated CO_2 emissions for the energy carrier "biofuels", disaggregated by category.

Category	Final Energy Consumption (MWh)	CO_2 Emissions (t)
Tertiary (non municipal) buildings, equipment/facilities	176.48	0.00

A further comment to refer that, in determining the CO_2 emissions associated with energy carrier "biofuels", the emission factor used was 0 t CO_2/MWh.

Overall Balance

Table 8 consists of a summary of the IREVC and Figure 14 shows the distribution of the percentage of the final energy consumption, in the county of Viana do Castelo and in 2008, disaggregated by energy carrier.

Table 8 - Final energy consumption and its associated CO_2 emissions, referring to all energy carriers, disaggregated by category.

Category	Final Energy Consumption (MWh)	CO_2 Emissions (t)
Municipal buildings, equipment/facilities	13366.97	4353.87
Tertiary (non municipal) buildings, equipment/facilities	155605.45	50983.67
Residential buildings	158924.50	51586.37
Municipal public lighting	15019.07	5542.04
Sub-total	342915.98	112465.94
Municipal fleet	5040.69	1352.15
Public transport		
Private and commercial transport		
Sub-total	518407.24	135845.45
Total	**861323.21**	**248311.39**

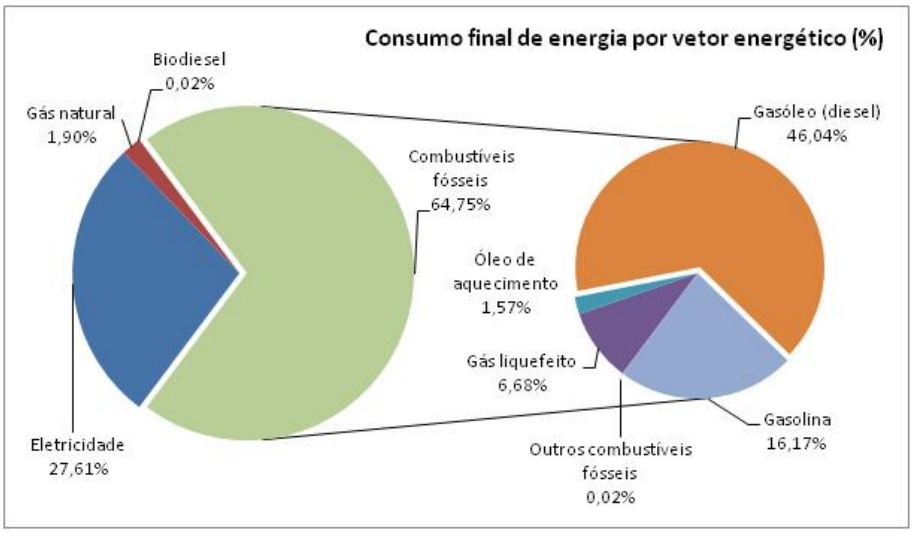

Figure 14 - Disaggregation of final energy consumption, in 2008 and in Viana do Castelo, by energy carrier.

By interpreting the figures in Table 8 it is possible to perceive that, in terms of components, "Transport" is more energy consuming than "Buildings, equipment and facilities". Regarding the categories themselves, it is important to mention that due to lack of information it is impossible to disaggregate, by category, the energy consumption related to the component "Transport". As far as the component "Buildings, equipment and facilities" is concerned, the category which registered the highest energy consumption and, subsequently, led to greater CO_2 emissions was "Residential buildings".

On the other hand, the analysis of Figure 14 shows that the most consumed energy carrier in the county of Viana do Castelo in 2008 corresponds to "fossil fuels" - with a total percentage of about 64.75% - followed by "electricity". As far as "fossil fuels" are concerned, because of its individual contribution - around 46.04% of the total energy consumption registered in 2008 in the municipality of Viana do Castelo - emphasis should be given to "diesel".

Planned actions and measures for the full duration of the plan

Towards 2020

In order to implement an action plan and aiming to enhance the success of its implementation, it is necessary to establish and detail the measures that need undertaking, translate them into indicators, which should then defined accordingly to the resources available and be implemented within an adequate timeframe. Moreover, to each measure should be assigned a person responsible for its implementation as well as set a realistic budget.

Embodying, too, a strategy of action, this time aiming to improve the energy and environmental performance of the county of Viana do Castelo, the PASEVC could not elope from these guidelines. Therefore, in accordance with the content of the document "INSTRUCTIONS: How to fill in the Sustainable Energy Action Plan template?", were listed and grouped by fields of action (such as "Municipal buildings, equipment/facilities"; "Residential buildings"; "Municipal public lighting"; "Public transport"; "Training and education", among others) a set of measures/actions whose implementation will lead to the reduction, by 20% in 2020 and in the territory of Viana do Castelo, of the CO_2 emissions. Furthermore, for each measure/action: was allocated, at least, one entity responsible; was defined a timing for implementation and were quantified energy savings and production and respective CO_2 emissions reduction.

Regarding the "municipal component" despite the final energy consumption and the CO_2 emissions corresponding to the categories "Municipal buildings, equipment/facilities" and "Municipal Fleet" being small, it was considered important to include, in the PASEVC, a set of actions of the responsibility of the MVC.

Foreseen actions

The strategy of action to be untaken in Viana do Castelo in order to reduce CO_2 emissions by 20% in 2020 is as described in Tables 9, 10, 11, 12 and 13.

Table 9 - Measures to be adopted for the sector "Buildings, equipment/facilities".

Fields of action	Designation	Description	Responsible department/entity	Implementation period	Energy saving (MWh)	Energy production (MWh)	Reduction of CO_2 emissions (ton)
Municipal buildings, equipment / facilities	Municipal buildings energy performance upgrade	Implementation of energy efficiency measures in municipal buildings aiming to improve their energy performance.	MVC/SMSBVC	2013-2020	980.00	2380.00	297.76
	Certified municipal buildings	Energy certification of municipal buildings.	MVC	2013-2020	-	-	-
	Efficient schools	School buildings energy diagnosis and implementation of the proposed measures.	MVC	2009-2020	580.00	-	179.51
	Renovation of office equipment	Gradual replacement of office equipment by others more efficient.	MVC/SMSBVC	2012-2020	120.00	-	44.28
	Standby e off-mode consumption elimination	Behavioural change of the use of office equipment by the workers in the municipal buildings/equipment and facilities.	MVC/SMSBVC	2012-2020	250.00	-	92.25
	Management and monitoring of energy	Implementation and operation of an energy monitoring and management system in municipal buildings.	MVC/SMSBVC	2013-2020	430.00	-	139.12
	Efficient water supply	Implementation of a set of measures addressing the water supply system of the county of Viana do Castelo aiming to: improve service provided; minimize losses and promote energy efficiency.	SMSBVC	2013-2020	300.00	-	110.70

Tertiary (non municipal) buildings, equipment/facilities	Building rehabilitation	Implementation of energy efficiency measures in buildings aiming to improve their energy and environmental performance.	Private	2010-2020	350.51	-	121.94
	Office equipment renovation	Gradual replacement of office equipment by others more efficient.	Private	2010-2020	159.21	-	58.75
	Renewal of electrical equipment in hotels	Replacement of inefficient appliances by others more efficient (Class A or higher).	Private	2010-2020	353.65	-	130.50
	Renewal of electrical equipment in restaurants and coffee shops	Replacement of inefficient appliances by others more efficient (Class A or higher).	Private	2010-2020	938.53	-	346.32
	Efficient lighting	Implementation of a set of measures aiming to improve the energy performance of lighting systems.	Private	2010-2015	2357.64	-	869.97
	Eco-AP implementation	Promotion of a set of energy efficiency measures that will allow the public administration buildings to reduce their energy consumption by 20%.	Public administration	2010-2020	702.07	-	242.59
	Efficient heating/cooling systems	Implementation of a set of measures aiming to improve the energy performance of heating/cooling systems.	Private	2010-2020	1056.82	-	380.86
	Solar DHW	Installation of solar thermal collectors in the tertiary sector buildings.	Private	2010-2020	189.49	-	62.85
	Management and monitoring energy systems	Implementation and operation of an energy monitoring and management system in the tertiary sector.	Private	2012-2020	1579.31	-	582.76

Residential buildings	Home renewal	Adoption of energy efficiency measures in housing, including interventions in glazed openings and insulation (walls, floors and ceilings).	Private	2010-2020	1573.27	-	510.74
	Certified buildings	Residential buildings energy certification.	Private	2010-2020	-	-	-
	Replacement of inefficient equipments	Replacement of inefficient appliances by others more efficient (Class A or higher).	Private	2010-2020	3466.00	-	1278.95
	Phase-out of incandescent lamps	Gradual replacement of incandescent light bulbs with others more efficient.	Private	2010-2020	8134.16	-	3001.51
	Intelligent lighting	Implementation of a set of measures aiming to improve the energy performance of residential indoor lighting (except incandescent light bulb replacement).	Private	2010-2020	198.07	-	73.09
	Solar DHW	Installation of solar thermal collectors in the residential sector.	Private	2010-2020	5228.34	-	1697.32
	Efficient heating/cooling systems	Implementation of a set of measures aiming to improve the energy performance of residential heating/cooling systems.	Private	2015-2020	1223.65	-	397.25
	Monitor and manage energy consumption	Replacement of the existing electricity counters by intelligent ones. Introduction of equipment that enables the optimization of electricity consumption in the residential sector.	Private	2013-2020	1595.46	-	588.73
Municipal public lighting	Optimized set time	Adjustments in the operating hours of municipal public lighting.	MVC/EDP Distribuição	2010-2011	2703.43	-	997.57
	Efficient public lighting	Implementation of a set of energy efficiency measures in municipal public lighting (ex. installation of dimmers; electronic ballasts; LED lighting, etc.).	MVC/CIM Alto Minho	2012-2014	1103.90	-	518.83
	Geo-referencing municipal public lighting network	Survey and geo-referencing of all the components that integrate Viana do Castelo's municipal public lighting network.	MVC/CIM Alto Minho/AREA Alto Minho	2013	-	-	-
	LED traffic lights	Gradual replacement of Viana do Castelo's conventional traffic lights with LED devices.	MVC	2009-2012	44.29	-	20.82

Table 10 - Measures to be adopted for the sector "Transport".

Fields of action	Designation	Description	Responsible department/entity	Implementation period	Energy saving (MWh)	Energy production (MWh)	Reduction of CO_2 emissions (ton)
Municipal fleet	Municipal fleet renewal	Gradual replacement of the municipal fleet by more energy efficient vehicles, hybrid or electric.	MVC/SMSBVC	2010-2020	200.60	-	53.44
	Bio fuel incorporation	Incorporation of bio fuel (B20) in the municipal fleet.	MVC/SMSBVC	2012-2020	97.00	-	25.90
	Right tire	Use of tires with low rolling resistance in the municipal fleet, verification and, if necessary, pressure correction.	MVC/SMSBVC	2012-2020	148.80	-	39.67
	Travel planning and coordination	Adopting measures in order to promote car sharing among municipality's employees (ex. municipal fleet management).	MVC/SMSBVC	2012-2020	199.00	-	53.04
	Incorporation of monitoring systems	Incorporation into the municipal fleet of monitoring systems (on-board computer, cruise control, GPS, etc.).	MVC/SMSBVC	2013-2020	298.10	-	79.46
Private and commercial transport	Improvement of mobility and transport systems and networks	Restructure public transport network and enhance the use of public transports.	MVC/Private	2012-2020	13439.48	-	3521.33
	Vehicle replacement	Renewal of the fleet through the purchase of more efficient and less polluting vehicles.	Private	2010-2020	46074.88	-	12070.22
	Right tire	Use of tires with low rolling resistance, verification and, if necessary, pressure correction.	Private	2010-2020	12286.64	-	3218.73
	Driving efficiently	Incorporation of monitoring systems (on-board computer, cruise control, GPS, etc.).	Private	2010-2020	26877.02	-	7040.96
	Bio fuel incorporation	Incorporation of bio fuel (B20).	Private	2013-2020	0	-	991.04
	Cycling routes and footpaths	Building infrastructures which enhance sustainable mobility (such as cycling routes and footpaths).	Private	2009-2020	767.91	-	201.17
	On-line services	Making available on-line services, using new information and communication technologies (NICT), thus decreasing the number of "mandatory" travels needed.	Private	2010-2020	2559.72	-	670.57

Table 11 - Measures to be adopted for the sector "Land use planning".

Fields of action	Designation	Description	Responsible department/entity	Implementation period	Energy saving (MWh)	Energy production (MWh)	Reduction of CO_2 emissions (ton)
Strategic urban planning	Incorporation of energy related issues in strategic urban plans (namely Viana do Castelo's PDM)	Incorporation, in the revised PDM, of solutions that potentiate a reduction of the energy consumption and associated CO_2 emissions (like: limitation, to the minimum, of the expansion of urban areas; promotion of a greater mixture of uses and proximity of services at consolidated urban zones; definition of new green corridors, cycling routes and footpaths; etc.).	MVC	2010-2020	-	-	-
Transport/ mobility planning	Transport and mobility planning	Definition of solutions aiming to improve mobility and increase the accessibility provided by the county's public transportation system, ensuring the economic sustainability of all agents involved.	MVC/CIM Alto Minho	2011-2013	-	-	-
Standards for refurbishment and new development	Pro-energy efficiency standards	Revision of the existing municipal regulations in order to incorporate issues related with energy efficiency in buildings and in public lighting (urban regeneration and new developments).	MVC	2011-2013	-	-	-

Table 12 - Measures to be adopted for the sector "Public procurement of products and services".

Fields of action	Designation	Description	Responsible department/entity	Implementation period	Energy saving (MWh)	Energy production (MWh)	Reduction of CO_2 emissions (ton)
Energy efficiency requirements/standards	Enhancing municipal green procurement	Implementing public procurement laws in the municipality of Viana do Castelo.	MVC/SMSBVC	2013-2020	0.8	-	0.26
	Enhancing green procurement	Implementing public procurement laws in the municipality of Viana do Castelo's public administration buildings.	Public administration	2008-2020	0.21	-	0.07

Table 13 - Measures to be adopted for the sector "Working with the citizens and stakeholders".

Fields of action	Designation	Description	Responsible department/entity	Implementation period	Energy saving (MWh)	Energy production (MWh)	Reduction of CO_2 emissions (ton)
Advisory services	Advice on energy issues addressing the municipality	Advise in order to promote both energy efficiency and use of renewable energy sources.	MVC/SMSBVC/ AREA Alto Minho	2012-2020	270.00	-	90.39
Financial support and grants	Award for energy efficiency in schools	Definition of an incentive system in order to promote energy efficiency in schools.	MVC	2013-2020	-	-	-
	Award for energy efficient citizens/families	Definition of an incentive system in order to promote energy efficiency in residential buildings.	MVC	2013-2020	-	-	-
	Award for energy efficiency in the tertiary sector	Definition of an incentive system in order to promote energy efficiency in the tertiary sector.	MVC	2013-2020	-	-	-
Awareness raising and local networking	Raising awareness towards energy related issues in schools	Promotion of energy and environmental awareness actions addressing Viana do Castelo's schools (production and distribution of informative material; organization of contests of ideas, among other events).	MVC/AREA Alto Minho	2013-2020	320.00	-	93.18
	Raising residents awareness towards energy related issues	Promotion of energy and environmental awareness actions addressing Viana do Castelo's citizens (ex. production and distribution of informative material).	MVC/AREA Alto Minho	2013-2020	5959.36	-	1934.64
	Awareness raising on energy related issues within the tertiary sector	Promotion of energy and environmental awareness actions addressing Viana do Castelo's tertiary sector (production and distribution of informative material; award organization; among other events).	AEVC/ Cooperatives/ MVC/AREA Alto Minho	2013-2020	4351.06	-	1578.96
	Training on Eco Driving	Implementation of eco-driving awareness actions addressed to Viana do Castelo's citizens.	MVC/Private	2013-2020	15358.29	-	4023.41
Training and education	Training on Eco Driving addressed to municipality's employees	Implementation of training on issues related to eco-driving, for municipal vehicle users.	MVC/SMSBVC	2013-2020	124.00	-	30.92
	"Greener" driving schools	Incorporation of educational contents on the topic of eco-driving at driving schools.	Private	2008-2015	5119.43	-	1341.14