

# Sustainable Energy Action Plan (SEAP) A Bola



MELISSA CONSULTORÍA E INGENIERÍA AMBIENTAL S.L.

## Sustainable Energy Action Plan (SEAP) A Bola

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**Annex I. Baseline Emission Inventory (Full Document)**

**Annex II. Participation and communication actions**

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## 1. INTRODUCTION

The **Sustainable Energy Action Plan (SEAP)** is a part of the Provincial agreement for the energy sustainability –signed between the Provincial Council of Ourense and 19 municipalities of the province, A Bola included- whose objectives are to cooperate in environmental policies, to optimize expenses on the energy consumption, and to promote the integrated management of economic, social and cultural development with the help of a "sustainable cooperation". In particular, it reflects the commitment to reduce CO<sub>2</sub> equivalent emissions by at least a 20% by 2020.

In addition, the **SEAP** development responds to the **50000 &1 SEAP** project whose objective is to integrate the energy systems management (EnMS) with the Sustainable Energy Action Plans according to the norm **ISO50001**, ensuring its effecting development. The systemic approach that provides this norm allows to achieve a continuous improvement of the energy efficiency and the energy use and consumption which is essential for the establishment of appropriate indicators that allow documenting and improving energy efficiency.

According to the technical requirements, this document is divided into three basic blocks:

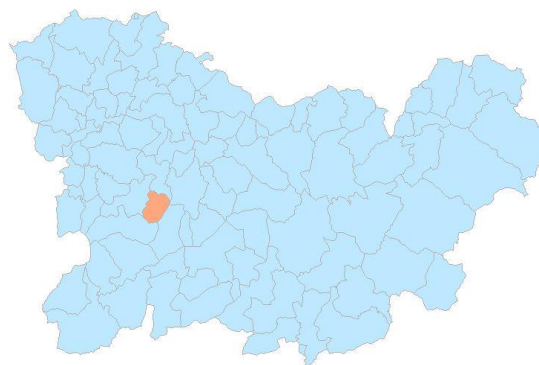
- **Baseline Emission Inventory (BEI)**. It includes a quantification of the CO<sub>2</sub> equivalent emissions from the energy consumption executed by Concello of A Bola for the selected reference year. The BEI allows the identification of the main anthropogenic sources of CO<sub>2</sub> and other greenhouse effect gasses in the Concello, providing the necessary information for the establishment of a local energy diagnosis from which you schedule and prioritize the measures of the Action Plan that will enable to reduce these emissions.
- **Energy diagnosis**. From the information provided in the **BEI** it's carried out a detailed analysis and diagnosis of the energy situation locally, including the identification and evaluation of the measures taken to date by the Concello related to the reduction of the GHG emissions and the projected emissions scenarios. This diagnostic allows to highlight the strategic sectors which exert a greater effort to minimize their impact on climate change at local level.
- **Sustainable Energy Action Plan (SEAP)**. Planning, organization, definition and prioritization of the measures to be carried out until the year 2020 to achieve the goal of reducing the anthropogenic emissions of CO<sub>2</sub> equivalent in A Bola at least a 20% from the reference year considered. In addition, a monitoring plan it is included based on indicators in order to ensure proper monitoring and implementation of the measures, and the analysis of their effectiveness in relation to the reduction of energy consumption and GHG emissions.

This entire document is structured according to the sectors and fonts that the European technical guides indicate, regarding the development of **SEAP** and the **Covenant of Mayors Committed to local sustainable energy**<sup>1</sup>.

## 2. GENERAL CHARACTERIZATION OF CONCELLO

A Bola is located southwest of the province of Ourense, in the region of Tierra de Celanova. The municipality covers an area of 34.9 km<sup>2</sup> extending through the foothills of the eastern side of the Sierra del Leboeiro, at the foot of the peaks of Forriolo, Monte Calvo and San Cibrao. Currently the municipality has 1350 inhabitants (INE. Municipal Register of inhabitants 2014) distributed in 8 administrative districts, more than thirty city centers and another thirty scattered. The population has a high rate of aging, above the regional average.

Figure 1.- A Bola situation in Ourense province



The primary sector has a high weight in the productive structure of A Bola, highlighting the livestock -bovine mainly- and agriculture-activities such as maize, wheat, rye or potato- and an important production of chestnuts thanks to the strong presence of chestnut trees, with pines and oaks, in their forests. The tertiary sector has a low level of implementation due to the proximity of the regional capital, Celanova, which polarizes most of the sector. Moreover, it highlights the situation of the municipality within the Biosphere Reserve "Allariz area", declared in June 29 of 2005, covering an area of 21482 hectares that affects the municipalities of Allariz, Vilar de Santos, A Bola and Rairiz de Veiga.

It is a municipality with good connections in general, thanks to the presence of the AG-31 road west of the town, connecting the town to the A-52 up to Currás. The municipality is crossed by the OU-531 (Cortegada-Xinzo de Limia) or the OU-300 (A Bola-Allariz) secondary roads. Still, access to certain city centers of the municipality is in poor condition, due to the high spread of the same.

<sup>1</sup> <http://www.pactodelosalcaldes.eu/Biblioteca.257.html>

### 3. BASELINE EMISSION INVENTORY (BEI)

Bellow a summary of the BEI is attached prepared for the Concello of A Bola. The complete inventory is attached as Appendix 1.

#### 3.1. Reference year. General indicators

According to the availability of the data and the actions carried out by the Concello of A bola on energy, **2007** is selected as the reference year. This is the year in which it is carried out the calculation of baseline emissions, and for which emissions reduction is compared to 2020. The general indicators of the socioeconomic conditions of the municipally for the reference year considered and nearest date of the elaboration of this document are shown in the following table:

**Table 1.- Basic socioeconomic indicators of A Bola. Comparison of the reference year (2007) and the present.**

			Year 2007	Present*
Population. Nº of inhabitants (municipal population census)			1497	1350
Municipal area km <sup>2</sup> (IGN)			34.9	34.9
Urban estates (land registry)			1939	1966
Housing census (population and housing census. 2011. INE)	Occupied dwellings	Main	551	551
		Secondary	382	382
	Empty dwellings		308	308
Population entities (INE. census.)	Local administrative district		8	8
	Population areas		32	32
	Scatters		39	39
Vehicle fleet (Home Office. Traffic department)	Private cars		765	774
	Trucks and vans		89	122
	Buses		7	7
	Motorcycles		33	47
	Industrial tractors		0	0
	Others		19	26
Nº Hospitals (Ministry of Health, Social Services and Equality)			0	0
Nº Health care facilities			1	1
Nº educational centers (educational counseling)	Child and primary education		0	0
	Primary education+ ESO education		0	0
	ESO education y not compulsory education		0	0
Nº of infrastructure and local facilities (Ministry of finance and public administration)	Library		0	1
	Pensioner home		0	0
	Culture house		0	0
	Social/civic center		0	4
	Museum		0	0
	Theatre/Cinema		0	0
	Sport complexes		0	0
	Outdoor pool		0	0
	Sports fields		1	1
	Indoor sports complex		0	0
	Playgrounds		1	1
	Tourist accommodation (Council of culture and tourism)	Hotels		0
Hostel		0	0	
Rural tourism		0	0	
Business services (Socioeconomic annual inventory La Caixa)	Offices deposit entity		1	1
	Retail business		16	7
	Restoration activities and bars		3	3
Others	Elderly centers		0	1
	Childcare		1	1
	Municipal´s youth Hostels		0	0

\* For each variable we have considered available data closest to the current date (Year 2015)  
Source: Instituto Gallego de Estadística (IGE)

### 3.2. Areas and sectors considered

The sectors included in the BEI of the Concello of A Bola are those for which it was considered that local politics can exert greater influence in reducing energy consumption, and consequently, in reducing CO<sub>2</sub> and other GHG gasses emissions. These are:

- **Building, equipment/facilities:**

- **Buildings, equipment/ municipal facilities.** Buildings and facilities owned by the Concello of A Bola.
- **Buildings, equipment/ tertiary facilities.** Buildings, equipment / (non-municipal) facilities for the service sector, as in the case of offices of private companies, banks, commercial and retail activities, hospitals etc.
- **Residential buildings.** Buildings mainly destined for residential use.

The buildings, equipment and industrial facilities of the municipality (focused mainly on the exploitation of local resources) have not been considered for the preparation of the BEI because it has not been possible to characterize the situation in the Concello of A Bola for the reference year considered.

- **Public lighting.** Lighting municipally owned or managed by the Concello of A Bola including public street lighting, public parks, street lights, etc.

- **Transport:**

- **Municipal fleet.** Vehicles owned or used by the local authority.
- **Public transportation.** Vehicles use for passenger transport (bus, tram, metro, urban rail transport, etc.).
- **Private or commercial transport.** Privately owned vehicles dedicated to moving people and good for private purposes.

- **Waste management.** Emissions not related to energy, such as CH<sub>4</sub> from the rubbish dump. Energy consumption and the emissions related with the solid waste treatment installations are included in the category "building, equipment/facilities".

- **Wastewater management.** Emissions not related with the energy, such as CH<sub>4</sub> and NO<sub>2</sub> emissions, resulting from the wastewater treatment. Energy consumption and the emissions related with wastewater installations are included in the category "building, equipment/facilities".

On the other hand, the BEI considers the **local production of electricity (<20 MW)** including photovoltaic installations, wind energy, cogeneration or improvement of existing local power generation.

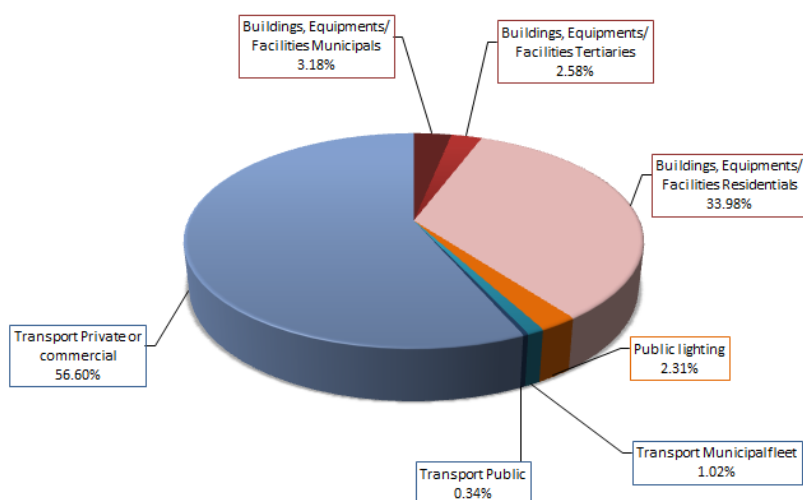
### 3.3. Energy consumption

The energy consumption of the municipality of A Bola for the year 2007 are summarized in the following table:

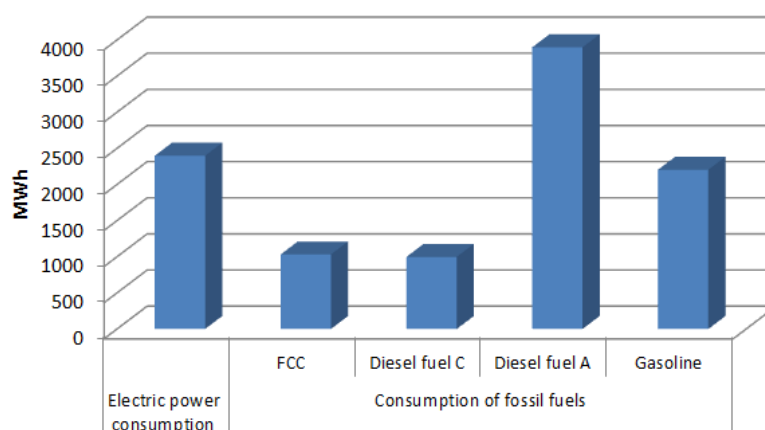
**Table 2.- Energy consumption (MWh) of the municipality of A Bola by sectors and sources. Year 2007**

		Buildings, Equipments/ Facilities			Public lighting	Transport			Subtotal
		Municipals	Tertiaries	Residentials		Municipal fleet	Public	Private or commercial	
Electric power consumption		233.373	169.758	1751.120	242.767				2397.018
Consumption of fossil fuels	FCC		54.221	976.515					1030.736
	Diesel fuel C	100.870	47.563	848.744					997.177
	Diesel fuel A					102.787	35.305	3759.122	3897.214
	Gasoline					5.011		2198.219	2203.230
Subtotal		334.243	271.542	3576.379	242.767	107.798	35.505	5957.341	<b>10525.375</b>

**Figure 2.- Distribution of energy consumption by SEAP sectors. A Bola. Year 2007**



**Figure 3.- Distribution of energy consumption by source. A Bola. Year 2007**



As it is derived from previous graphs, the higher energy consumption in the municipality is derived from private and commercial transport followed by residential buildings. Tertiary and municipal buildings and public lighting have a lesser impact on municipal energy consumption. Regarding to energy sources electricity consumption and diesel vehicles are globally the most important.

### 3.4. CO<sub>2</sub> equivalent emissions

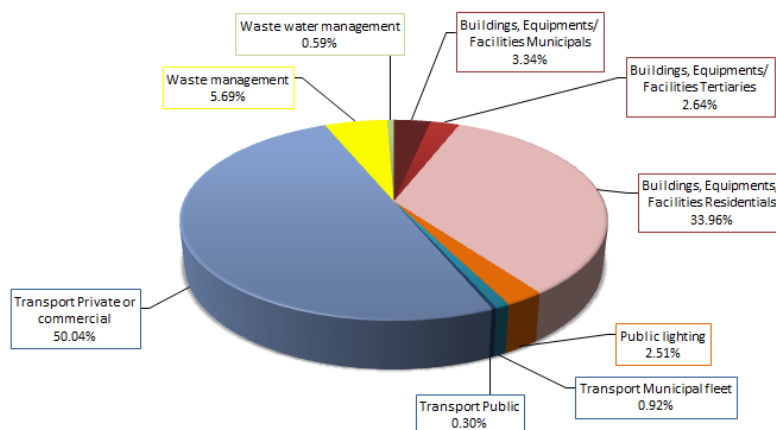
The distribution of the CO<sub>2</sub> equivalent emissions for the municipality of A Bola for the year 2007 are summarize in the following table:

**Table 3.- CO<sub>2</sub> equivalent emissions (Tons) of the municipality of A Bola by sectors and sources. Year 2007**

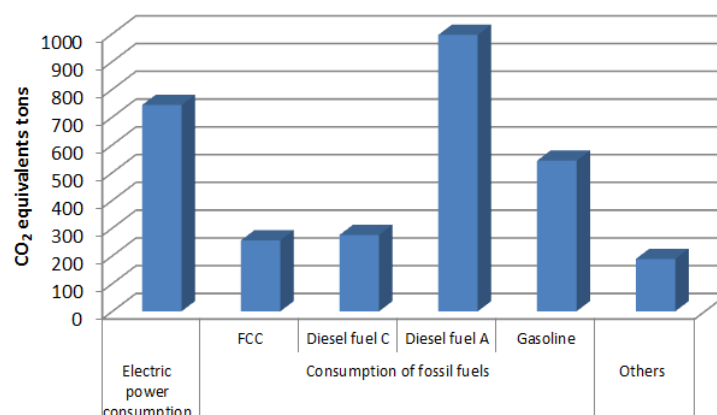
	Buildings, Equipments/ Facilities			Public lighting	Transport			Waste management	Waste water management	Subtotal
	Municipals	Tertiaries	Residentials		Municipal fleet	Public	Private or commercial			
Electric power consumption	72.346	52.625	542.847	75.258						743.076
Consumption of fossil fuels	FCC	13.427	241.811							255,238
	Diesel fuel C	27.860	13.137	234.421						275,418
	Diesel fuel A				26.260	9.020	960.371			986,631
	Gasoline				1.234		541.264			542,498
Others								170.876	17.826	188.702
<b>Subtotal</b>	<b>100.206</b>	<b>79.188</b>	<b>1019.079</b>	<b>75.258</b>	<b>27.494</b>	<b>9.020</b>	<b>1501.635</b>	<b>170.876</b>	<b>17.826</b>	<b>3000.579</b>

**Total tons of CO<sub>2</sub> equivalent emitted in the municipality of A Bola in 2007 are estimated at 3000.579 with a per capita rate of 2.004 tons of CO<sub>2</sub> equivalent / inhabitant.**

**Figure 4.- Distribution of CO<sub>2</sub> equivalent emissions by SEAP sectors**





**Figure 5.- Distribution of CO<sub>2</sub> equivalent emissions by energy source**

The sectors that further contribute to the CO<sub>2</sub> equivalent emissions are private and commercial transport –especially diesel emissions from vehicles–, the residential and tertiary buildings –especially electricity consumption–, the management and waste treatment processes –due to the lack of valuation–, municipal buildings and the street lighting. By sources diesel consumption in vehicles and electricity consumption are the largest contributors to these emissions.

### 3.5. Local Electricity Production

In the municipality of A Bola there aren't facilities for local production of electricity with a power less than 20 MW.

## 4. ENERGY DIAGNOSE

### 4.1. Main results of the BEI

The total tons of CO<sub>2</sub> equivalent emitted in the municipality of A Bola in 2007 are estimated at 3000.579 with a per capita rate of 2.004 tons of CO<sub>2</sub> equivalent/inhabitant.

The sectors that further contribute to the CO<sub>2</sub> equivalent emissions are private and commercial transport –especially diesel emissions from vehicles–, the residential and tertiary buildings –especially electricity consumption–, the management and waste treatment processes –due to the lack of valuation–, municipal buildings and the street lighting. By sources diesel consumption in vehicles and electricity consumption are the largest contributors to these emissions.

Consequently, to achieve the target of reducing by at least 20% of CO<sub>2</sub> equivalent emissions locally, in relation to the reference year, it is required the establishment of measures to prevent the emissions of CO<sub>2</sub> equivalent at least 600.116 tons.

## 4.2. Identification and evaluation of measures taken to date

Since the year of reference to the present, in the municipality of A Bola its have developed some measures to reduce energy consumption, minimize emissions or to drive renewable energy. It has installed a biomass boiler in municipal buildings and have renovated several electric switchboards in several population areas: Barrio, San Simón, Forriolo, Campo de Veiga, Soutomel, Cacabelos, Chaus, Requeixo, Casal de Feas, Prado.

It is unknown the local incidence of subsidies and public aid managed by the Energy Institute of Galicia (INEGA), such is the case of:

- Renove Plans (2008-2012): electrical appliances, windows, air conditioning equipment and interior lighting equipment. Energy Institute of Galicia (INEGA). Regional ministry of economy and industry. Xunta de Galicia.
- Grants to projects for energy saving and efficiency in companies in the sectors of industry and services.
- Grants for renewable energy projects, financed jointly by the European Agricultural Fund for Rural Development (EAFRD)
- Renove Plans (2008-2012): Efficient vehicles. Energy Institute of Galicia (INEGA). Regional ministry of economy and industry. Xunta de Galicia.
- Others.

## 4.3. Energy planning at different scales. Projected emission scenarios

The policies, plans, strategies and commitments of local, regional and state level that influence the current energy situation and its evolution until 2020 are:

### ■ A Bola

- Action Plan. Agenda 21.
- Covenant of Mayors Committed to local sustainable energy.

### ■ Council of Ourense:

- Provincial Pact for Sustainability.
- Participa Plan. CLIMATLANTIC proyect.

### ■ Galicia:

- Galician Strategy on Climate Change.
- Galician Action Plan on Climate Change.
- Galician Energetic Plan
- Savings and Energy Efficiency Plan
- Grants and subsidies of the Energy Institute of Galicia (INEGA).

### ■ Spanish State:

- Spanish Strategy for Climate Change and Clean Energy horizon 2007-2012-2020.
- Action Plan for Energy Saving and Efficiency 2011-2020.

- National Action Plan for Renewable Energy (PANER) and Renewable Energy Plan 2011-2020 (PER).
- Planning of the Electricity and Gas Sectors.
- Action Plan for Energy Saving and Efficiency 2008-2012
- Technical Building Code. Energy saving.
- Regulations and requirements on energy efficiency<sup>2</sup>
- Grants, subsidies and projects of the Institute for Diversification and Saving of Energy (IDAE).

The projected scenarios take into account all these policies and strategies and the results of the BEI and measures implemented in the municipality on energy efficiency and savings, sustainable mobility and promoting alternative energies. Accordingly, the projected scenarios for SEAP sectors considered are:

#### ■ **Buildings, equipment/facilities.**

- **Municipal.** To date it has only been installed a biomass boiler in municipal buildings. Looking ahead it is expected to continue to implement energy efficiency measures and use of alternative energy-considering energy policies being promoted at local and state level-. In any case, the relative contribution of these emissions at the local level is small.
- **Tertiary.** Generally, considering that the demand for services is increasing progressively, and that the implementation of measures for energy saving and efficiency, at least in the private services sector is still small, an increase of emissions is expected in the future.
- **Residential.** The residential sector, according to the increasing technical requirements and measures expected in the energy sector -at state and regional level-, presents a favorable scenario even though comfort requirements are increasing.
- **Public lighting.** Generally, the subsidies granted by the INEGA and others entities -to projects for energy savings and efficiency related to the renewal of public lighting installations- project a favorable scenario to reduce consumption locally.
- **Transport.** The transport does not seem to present a favorable trend due to the high dependence on mobility in private vehicles that the inhabitants of the municipality have, the poor public transportation and the progressive increase of the vehicle fleet - increase rate of motorization-. And this despite the fact

<sup>2</sup> Among other regulations:

Real Decreto 235/2013, de 5 de abril, por el que se aprueba el procedimiento básico para la certificación de la eficiencia energética de los edificios.

Real Decreto 1890/2008 es el Reglamento de Eficiencia Energética en Instalaciones de Alumbrado Exterior y sus Instrucciones técnicas complementarias EA-01 a EA-07.

Real Decreto 1027/2007 por el que se aprueba el Reglamento de Instalaciones Térmicas en los Edificios (RITE).

Real Decreto 314/2006 por el que se aprueba el nuevo Código Técnico de la Edificación, que contempla medidas concretas en materia de eficiencia energética e integración de las energías renovables.

that, in general, technical improvements and increased demand in vehicles and fuels are helping to minimize CO<sub>2</sub> emissions from transport.

- **Waste management.** The Plan of Urban Waste Management of Galicia (PGRUG) 2010-2020 takes into account the reduction in waste production and a higher valuation of the waste, which would lead to lower emissions. However, this same plan also considers an increase in energy valuation which would result in higher emissions.
- **Waste water management.** It is not expectable substantial changes, in any case, it may decrease due to the loss of population.

#### 4.4. General diagnosis

The energy diagnosis of the municipality made under the Local Agenda 21 in 2008 highlighted the following:

##### Weakness:

- Difficulties in bringing environmental information to the population.
- The dispersion of the population in rural areas hinders the allocation and distribution of containers and waste collection.
- Lack of information and environmental awareness.
- Lack of clean point.
- Absence of natural gas network.
- Low quality in the supply of energy in A Bola.
- Excessive dependence on non-renewable resources.

##### Threats:

- Continuing increase in solid waste generation.
- Possible mismatch between demand for electricity and the distribution capacity of the network.
- Low development of renewable energies.
- Exhaustion or excessive cost of nonrenewable resources.

##### Strengths:

- Existence of an environmental department
- Existence of a specific budget for environment in A Bola.
- Existence of a pick up of bulky waste in A Bola.
- Low production of industrial waste.
- Accession program collection of agricultural plastics.
- Low energy consumption in rural areas.
- Crowd of resources for renewable energy production (water, wind, sun and biomass).

##### Opportunities:

- Awareness campaigns for recycling.
- Liberalization of the gas and electricity trade.
- Possibility of installing solar panels within the program promoting solar energy.
- Ability to use aid and subsidies for the implementation of renewable energies.
- Aid for the reduction of climate change.

This **SWOT** is now complete with the results of the BEI, the inventory of measures implemented to date and projected emission scenarios:

#### Weakness:

- High dependence on diesel and electricity consumption both buildings and facilities, and transport.
- High population dispersion with heavy reliance on mobility in motorised private transport.
- Aging and loss of population.
- Low capacity of the local government for intervention in the residential and tertiary energy sectors.
- Obsolescence of the public lighting equipment.
- Aged vehicles of municipal fleet.

#### Threats:

- Increase of energy consumption in strategic sectors such as residential and tertiary.
- Cessation of subsidies on energy efficiency and alternative energy or increased competition to qualify for them.
- Increase of energetic dependence.

#### Strengths:

- Good features for the use of renewable energy from water, sun, wind, geothermal and biomass.

#### Opportunities:

- Use of subsidies and aids resulting from the policies and plans for energy efficiency and promotion of renewable energies in all sectors.
- Increase and competitiveness of gas and electricity companies with a greater choice of companies that guarantee the supply of green energy.
- Application of the new Technical Building Code (empowerment of installing solar panels on buildings).
- Progressive increase in the valuation of waste.

## 5. ACTION PLAN

### 5.1. Preliminary considerations

The Action Plan is developed taking into account, in general, the requirements of the Covenant of Mayors for Sustainable Energy and the specifications in the ISO 50001 for the implementation of a Management System for Energy. On the other hand, it considers particularly the results of BEI and energy assessment carried out by the municipality of A Bola. Accordingly, the SEAP is based on:

- The good energy practices carried so far in the municipality and in others municipalities with similar socio-economic contexts.
- The need to set priorities and select actions and measures by considering, among other things, the risk of success or failure of the actions and measures in the local context in which they occur.
- The importance of adjust the measures to the existing legal requirements.
- The importance of supporting the selection of measures in the energy diagnosis and BEI made for each of the SEAP areas and sectors.
- The need to establish a clear calendar, define responsibilities and to estimate a budget adjusted to local resources, considering the possibilities of financing.
- The need to establish and adequate monitoring system that allows to evaluate and to control the degree of development and execution of the SEAP while allowing for the adoption of new measures to improve and adapt to the changing reality.

### 5.2. Objectives, sectors and strategic lines

The Sustainable Energy Action Plan (SEAP) of the municipality of A Bola focuses on achieving by 2020 a **basic objective**:

**Reduce by at least a 20% of CO<sub>2</sub> equivalent emissions in A Bola.** Considering the estimates emissions of the reference year (2007), this goal will be achieve if measures to prevent the emission of at least 600.116 tons of CO<sub>2</sub> equivalent are adopted.

This basic objective is based on two complementary objectives:

**Minimize energy consumption in the municipality** with special emphasis on power consumption and fossil fuels, especially diesel fuel A.

**Increase the level of implementation of renewable energies** with a large improvement margin considering the environmental and socio-economic context.

The strategic and action lines are structured according to SEAP areas and sectors, taking into account:

- **SEAP field.** The largest volume of emissions at the local level is derived from the private sector (private and commercial transport and residential and tertiary buildings) so the capacity of direct intervention by the local administration should focus on measures aimed at information, public awareness and the development of policies and actions that facilitate and encourage habits of life under a sustainable energy model. Issues such as sustainable mobility, energy saving and green power consumption are essential.
- **City Council field.** Although the contribution to the overall volume of emissions is generally less relevant it is essential to develop sustainable energy actions taking into account the capacity of direct intervention of the local administration, the need to set an example and demonstrate to citizens the commitment to sustainable energy, the possibility of applying for grants and subsidies or benefits of obtaining a cost savings in the medium term.

Accordingly, the following strategic lines are considered:

#### TRANSVERSAL LINES

##### EO STRUCTURE AND ORGANIZATION



Since energy consumption and GHG emissions are cross-curricular phenomena that affect globally to the municipal organization and most of the areas of the municipal life, it is essential to designate and provide competences to the energy management structure of the municipality which will be responsible for the promotion, implementation and monitoring of measures in the field of sustainable energy that are developed on the municipality by participating in meetings, committees, plenary sessions, etc.

##### CPSF COMMUNICATION, PARTICIPATION, AWARENESS AND EDUCATION



The City Council should carry out a campaign of internal communication (employees and local agents) and external (general population) on the commitments and objectives to minimize energy consumption, promote the development and implementation of renewable energy and sustainable mobility to reduce CO2 emissions locally.

Also channels must be enabled so the communication can be bidirectional so that so that all the inhabitants of the municipality can make comments or suggestions for the continuous improvement of the SEAP.

On the other hand, the city must develop measures aimed at awareness, skills development and training in the energy sector of the public employees and workers, and the general population. And this is essential considering that according to the BEI of the municipality the sectors that more contribute to the

GHG emissions are the private and commercial transport and the residential and tertiary buildings for which the city has less capacity for a direct intervention. The local administration must ensure:

- Inform about measures, procedures and requirements established by the SEAP.
- Specify the roles and responsibilities of the different actors involved in the achievement of the objective of reducing emissions.
- Report about the benefits and advantages of the green energy, energy efficiency, etc.
- To channel the aids and to value the benefits of improving energy performance.
- Etc.

**CP****PUBLIC PROCUREMENTS OF PRODUCTS AND SERVICES**

One of the best tools available to the local administration to reach transversely the objectives in terms of reducing emissions and energy consumption, energy efficiency and promotion of renewable energies, is to establish conditions or requirements in this regard in the contracting on its products and services, especially those directly related to energy consumption. This, besides having a direct impact on the contract to which it refers, contributes to sensitize local suppliers (in many cases the companies are located in the municipality itself) has an exemplary effect and, in many cases, can be a cost savings in the midterm.

*SECTORAL LINES***EEI<sub>M</sub>****BUILDINGS, EQUIPMENT/FACILITIES MUNICIPAL**

Although their contribution to reducing emissions globally is limited, due to the greater importance of other sectors such as residential or tertiary, it is essential to accomplish the commitment to reduce emissions locally developing measures in municipal buildings and facilities to serve as references. This references aim to:

- Implant renewable energy: solar photovoltaic and solar thermal for DHW in municipal buildings (mainly sports buildings). Support funding with existing aids and public subsidies.
- Implant biomass thermal equipment replacing diesel boilers. Support funding with existing aids and public subsidies.
- Control energy efficiency certificates for public buildings and develop measures to improve the energy rating obtained. In each case, it can be develop:



- Improvements in enclosures.
- Improvement / renewal of appliances and heating systems (heating, cooling, DHW, etc.).
- Improvement / renovation in the lighting equipment.
- Optimization of operating conditions (For example: detectors, timers, Chrono-thermostats, etc.) and occupation.
- Others.
- Train public employees on good practices for reducing consumption and energy efficiency.

**EEI<sub>RT</sub>****BUILDINGS, EQUIPMENT/FACILITIES** RESIDENTIAL-TERTIARY

Their contribution to the local emission reduction can be very important, because they are the sectors -along with transport- that further contribute to CO<sub>2</sub> emissions locally. However, it should be noted the limited capacity of intervention of the local government on these sectors, aiming the actions towards:

- Develop agreements with industries to facilitate their involvement in the development of SEAP.
- Develop information and awareness campaigns for energy saving, replacement of underperforming lighting, renovation of air conditioning, use of green energy , the replacement of boilers and DHW by biomass or improved the envelope of buildings (Communication programs based on handouts, lectures, etc.). Introduce and facilitate access to existing public funds in these matters (For example grants offered by the INEGA).
- Develop promotional campaigns for solar photovoltaic and thermal energy. Introduce and facilitate the access to existing public funds in these matters (For example grants offered by the INEGA) and to value the possibility of establishing municipal incentives. (For example a discount on taxes or municipal fees).
- Control the energy certification of residential and tertiary buildings. Bonus or incentive for reforms to achieve an improvement in the energy rate - demonstrable by the certificate energy before and after-.
- Ensure effective implementation of the Technical Building Code (The promotion of the installation of solar panels on buildings) in the new building to be built.
- Inform and encourage consumption of the denominated "green energy".
- Others.

**AP****PUBLIC LIGHTING**

Their contribution to the local emission reductions can be important. Therefore, it is necessary to develop policies and measures to:

- Replace mercury vapor lamps to other lower energy consumption technologies and generalize the implementation of solutions that guarantee lower consumption of luminaries and traffic lights. Existing subsidies and public aid must be used. (INEGA)
- Establish control systems of public lighting, as can be flow regulators or astronomical clocks.
- Others.

**TPTE<sub>M</sub> TRANSPORT MUNICIPAL FLEET**

Although its contribution to total emissions is not significant at the municipal level, the commitment to reduce requires the adoption of exemplary measures in the municipal fleet - especially linked to the diesel consumption-. Measures must be taken aim to:

- Replacing fossil fuels with biofuels.
- Renew the fleet of municipal vehicles with the purchase of hybrid or electric vehicles.
- Make efficient driving courses (Eco-driving).
- Optimize the use of the vehicles (For example: control and programming of journeys and management and control of fuel consumption).
- Others.

**TPTE<sub>PPC</sub> TRANSPORT PUBLIC-PRIVATE-COMMERCIAL**

The BEI shows that this is the sector that further contributes to CO<sub>2</sub> emissions at the municipal level (50% of inventoried emissions come from this sector). However, the capacity of intervention of the local administration is limited and, in any case, should aim to:

- Implant a public bike rental system and promote sustainable mobility.
- Promote the use of shared vehicles for local trips.
- Promote improvements in public transport services.
- Establish incentives / benefits for the less polluting vehicles. (For example: Reserve parking spaces in the city center, advantages in taxes, etc.)
- Demand sustainable mobility criteria for City Council supply companies.
- Carry out information and awareness campaigns on sustainable mobility habits.
- Ensure efficient driving (eco-driving).
- Others.

## RSU

## MUNICIPAL SOLID WASTE



Their contribution to the local emission reduction can be significant, considering that the 5,7% of emissions inventoried in the municipality for the reference year are associated with related waste treatment processes. In any case the measures that are developed in this line must go directed, in the line than it raises the Plan of Management of Urban Residues of Galicia 2010-2020, in diminishing the production of residues in origin, impelling the composting and recycling and to guarantee a suitable separation of residues to optimize his later valuation.

## 5.3. SEAP Measures / Actions

### 5.3.1 List of Measures / Actions

The measures to be developed for each strategic line and sector are:

CODE	MEASURE
<b>EO</b>	<b>STRUCTURE AND ORGANIZATION</b>
<b>EO 1</b>	DEFINITION OF AN ADEQUATE ORGANIZATIONAL STRUCTURE AND COMPETENCE
<b>CPSF</b>	<b>COMMUNICATION, PARTICIPATION, AWARENESS AND EDUCATION</b>
<b>CPSF 1</b>	SEAP COMMUNICATION AND PARTICIPATION PLAN UNTIL 2020
<b>CP</b>	<b>PUBLIC PROCUREMENTS OF PRODUCTS AND SERVICES</b>
<b>CP 1</b>	PROCUREMENT OF GOODS AND SERVICES APPLYING CRITERIA OF LOW CARBON FOOTPRINT, PROMOTING ENERGY EFFICIENCY AND RENEWABLE ENERGY.
<b>EEI<sub>M</sub></b>	<b>BUILDINGS, EQUIPMENT/FACILITIES</b> MUNICIPAL
<b>EEI<sub>M</sub> 1</b>	ENERGY CERTIFICATION OF BUILDINGS / MUNICIPAL FACILITIES AND ACTIONS TO IMPROVE THE QUALIFICATION.
<b>CPSF</b>	EDUCATION OF LOCAL EMPLOYEES ON GOOD ENERGY PRACTICES IN BUILDINGS AND FACILITIES.
<b>EEI<sub>M</sub> 2</b>	
<b>EEI<sub>RT</sub></b>	<b>BUILDINGS, EQUIPMENT/FACILITIES</b> RESIDENTIAL-TERTIARY
<b>EEI<sub>RT</sub> 1</b>	IMPROVE TERTIARY AND RESIDENTIAL BUILDINGS ENERGY QUALIFICATION
<b>EEI<sub>RT</sub> 2</b>	PROMOTION AND INCENTIVE OF RENEWABLE ENERGY (PHOTOVOLTAIC, SOLAR THERMAL, BIOMASS, OTHERS)
<b>EEI<sub>RT</sub> 3</b>	EFFECTIVE CONTROL AND APPLICATION OF THE BASIC ENERGY SAVING REQUIREMENTS OF THE TECHNICAL BUILDING CODE IN NEW CONSTRUCTION BUILDINGS AND OPERATIONS ON EXISTING BUILDINGS. DEVELOPMENT OF THE ORDINANCE.
<b>CPSF</b>	
<b>EEI<sub>RT</sub> 4</b>	CAMPAIGN FOR ENERGY SAVING IN THE HOMES AND SERVICES
<b>AP</b>	<b>PUBLIC LIGHTING</b>
<b>AP 1</b>	AUDIT OF PUBLIC LIGHTING
<b>AP 2</b>	RENEWAL OF PUBLIC LIGHTING OUTDOOR FACILITIES
<b>TPTE<sub>M</sub></b>	<b>TRANSPORT</b> MUNICIPAL FLEET
<b>TPTE<sub>M</sub> 1</b>	USE OF BIOFUEL
<b>TPTE<sub>M</sub> 2</b>	MUNICIPAL FLEET RENEWAL
<b>CPSF</b>	
<b>TPTE<sub>M</sub> 3</b>	CONTROL OF ROUTES AND FUEL CONSUMPTION. TRAINING IN EFFICIENT DRIVING (ECO-DRIVING)
<b>TPTE<sub>PPC</sub></b>	<b>TRANSPORT</b> PUBLIC-PRIVATE-COMMERCIAL
<b>TPTE<sub>PPC</sub> 1</b>	ENCOURAGE AND PROMOTION WALKING AND CYCLING MOBILITY
<b>TPTE<sub>PPC</sub> 2</b>	PUBLIC TRANSPORT SYSTEM ON DEMAND
<b>TPTE<sub>PPC</sub> 3</b>	INCENTIVES AND DISSEMINATION. RENEWAL OF VEHICLES
<b>TPTE<sub>PPC</sub> 4</b>	CAR SHARING PLATFORM "CARPOOLING"
<b>CPSF</b>	
<b>TPTE<sub>PPC</sub> 5</b>	AWARENESS AND CAMPAIGNS FOR SUSTAINABLE LOCAL MOBILITY
<b>RSU</b>	<b>MUNICIPAL SOLID WASTE</b>
<b>CPSF</b>	
<b>RSU 1</b>	INCENTIVES AND AWARENESS TO REDUCE THE WASTE PRODUCTION IN THE ORIGIN. PROMOTE RECYCLING AND THE EFFECTIVE SEPARATION OF THE WASTE.

### 5.3.2 Sheets of the Measures / Actions


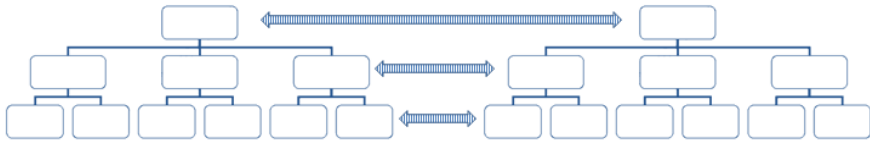
It has been developed a description sheet in which aspects such as the priority of its development, the description of the aspects it comprises, the agents involved and responsible for its implementation, the execution schedule, the budget, the main sources of financing and how much they contribute to the goals of reducing emissions and consumption are specified for each measure.

#### Structure and Organization (EO)



##### SEAP Measures/ Actions:

		Reduction of CO <sub>2</sub> emissions	Energy consumption Reduction	Renewable energies implementation
<b>EO 1</b>	DEFINITION OF AN ADEQUATE ORGANIZATIONAL STRUCTURE AND COMPETENCE	X	X	X

<b>EO</b>		<b>STRATEGIC LINE:</b> STRUCTURE AND ORGANIZATION	<b>SEAP SECTOR:</b> All. Transversal
<b>EO 1</b>		<b>DEFINITION OF AN ADEQUATE ORGANIZATIONAL STRUCTURE AND COMPETENCE</b>	<b>PRIORITY:</b> <b>HIGH</b>
<b>OBJECTIVE:</b>			
The main objective of the measure is to achieve effective implementation of the SEAP ensuring the existence of an adequate competence and organizational structure to ensure a proper implementation of the measures outlined in the Action Plan.			
<b>DESCRIPTION OF THE MEASURE:</b>			
<p>A Bola City Council and the Provincial Council of Ourense must agree on the competence and functional framework for the SEAP development, defining responsibilities, specifying procedures and making available to the Action Plan the adequate human and material resources. All this under the Provincial Sustainability Pact signed between the Provincial Council of Ourense and the municipality of A Bola.</p>			
			
<p>The possibility of creating a <i>municipal energy manager</i> or a <i>local energy management unit</i> responsible for the implementation, monitoring and control of the different measures of energy action of the SEAP, including the monitoring and control of energy consumption.</p> <p>Possibility of establishing a framework agreement for cooperation and assistance for potential delegation of outdoor lighting services, energy procurement or management of certain actions of the SEAP. The Lack of staff to develop this type of energy management at the local level could be mitigated by qualified personnel from agreements with universities and training centers.</p>			
<b>RESPONSIBILITIES:</b>			
<p><b>Agents Involved:</b></p> <ul style="list-style-type: none"> <li>A Bola City Council</li> <li>Provincial Council of Ourense</li> </ul> <p><b>In Charge:</b></p> <ul style="list-style-type: none"> <li>A Bola City Council</li> <li>Provincial Council of Ourense</li> </ul>			
<b>Need of contractual relationship:</b>			
NO			
<p><b>Contract Type:</b> -</p> <p><b>Award procedure:</b> -</p>			
<b>SCHEDULE:</b>			
<p><b>Frequency:</b> -</p> <p><b>Start date:</b> 2016</p> <p><b>Finish date:</b> 2020</p>			
<b>COSTS:</b>			
<p><b>Costs (€):</b> -</p> <p><b>Funding:</b> -</p> <p><b>Rate of return :</b> -</p>			
<b>BENEFITS:</b>			
<p><b>Annual emissions avoided (tCO<sub>2</sub>):</b> -</p> <p><b>Annual energy savings (MWh):</b> -</p> <p><b>Annual renewable energy production (MWh):</b> -</p> <p><b>Accumulated avoided emissions to 2020 (tCO<sub>2</sub>):</b> -</p> <p><b>Accumulated energy savings to 2020 (MWh):</b> -</p> <p><b>Accumulated Production renewable energies to 2020(MWh):</b> -</p>			
<b>MONITORING INDICATORS:</b>			
<p><b>Indicator:</b> Existence of organizational and procedural framework for the application of the SEAP in the municipality of A Bola and the Council of Ourense.</p> <p><b>Units:</b> presence / absence</p>			


## Communication, Participation, Awareness and Education (CPSF)



The effective implementation of the SEAP requires the active participation of all sectors and interested parts making it essential to launch a communication campaign aimed at informing of its existence and of the measures it entails. Also with special character, linked to the different sectors of activity specific actions will be carried out on communication, education and training. These actions are specified in each of the strategic guidelines established for a better organization and understanding, while considering a development of this strategic direction and action line.

### SEAP Measures/ Actions:

		Reduction of CO <sub>2</sub> emissions	Energy consumption Reduction	Renewable energies implementation
<b>CPSF 1</b>	SEAP COMMUNICATION AND PARTICIPATION PLAN UNTIL 2020	X	X	X

<b>CPSF</b>		<b>STRATEGIC LINE:</b> COMMUNICATION, PARTICIPATION, AWARENESS AND EDUCATION	<b>SEAP SECTOR:</b> All. Transversal
<b>CPSF 1</b>		<b>MEASURE:</b> SEAP COMMUNICATION AND PARTICIPATION PLAN UNTIL 2020	<b>PRIORITY:</b> <b>HIGH</b>
<b>OBJECTIVE:</b>			
Spread the SEAP actions and developments for general information and ensure the necessary involvement of sectors.			
<b>DESCRIPTION OF THE MEASURE:</b>			
<p>A Bola City Council and the Provincial Council of Ourense must develop a communication plan that will accompany the different phases of development of the SEAP until 2020. This action plan will include measures to disseminate and communicate extensively and intensively the state and the development of the SEAP to all interested parts (employees and local managers, general population social and productive actors, etc.) to make it into a working and management tool that allows developing it. Among other actions it should be done:</p> <ul style="list-style-type: none"> <li>- <b>Regularly maintain a page or web space of the SEAP.</b></li> <li>- <b>Organize an "Energy Day" or "Day of the Covenant of Mayors."</b></li> <li>- Periodically disseminate press releases to the media with the progress and milestones of the SEAP.</li> <li>- Disseminate of the SEAP on social media</li> <li>- Hold meetings and public events around the Sustainable Energy.</li> <li>- Sign agreements / arrangements with implicated sectors (traders, transporters, community / neighborhood associations, etc.).</li> <li>- Develop and disseminate information and awareness (code of good energy practices, development of leaflets, etc.)</li> <li>- Others</li> </ul> <p>Some of the awareness and training activities are developed specifically in the SEAP sectors that should be oriented to. Although it is considered a development of this measure / action.</p>			
<b>RESPONSIBILITIES:</b>			
<p><b>Agents Involved:</b></p> <ul style="list-style-type: none"> <li>■ A Bola City Council</li> <li>■ Provincial Council of Ourense</li> </ul> <p><b>In Charge:</b></p> <ul style="list-style-type: none"> <li>■ A Bola City Council</li> <li>■ Provincial Council of Ourense</li> </ul>			
<b>Need of contractual relationship:</b>			
Without specifying			
<p><b>Contract Type:</b> -      <b>Award procedure:</b> -</p>			
<b>SCHEDULE:</b>			
<p><b>Frequency:</b> -      <b>Start date:</b> 2016      <b>Finish date:</b> 2020</p>			
<b>COSTS:</b>			
<p><b>Costs (€):</b> 4000 €      <b>Funding:</b> A Bola City Council Provincial Council of Ourense FEDER      <b>Rate of return :</b> -</p>			
<b>BENEFITS:</b>			
<p><b>Annual emissions avoided (tCO<sub>2</sub>):</b> -</p> <p><b>Annual energy savings (MWh):</b> -      <b>Accumulated avoided emissions to 2020 (tCO<sub>2</sub>):</b> -</p> <p><b>Annual renewable energy production (MWh):</b> -      <b>Accumulated energy savings to 2020 (MWh):</b> -</p> <p><b>Accumulated Production renewable energies to 2020(MWh):</b> -</p>			
<b>MONITORING INDICATORS:</b>			
<p><b>Indicator:</b> N° of dissemination, communication and participation of the SEAP.      <b>Units:</b> N°</p> <p>Number of socioeconomic factors and citizens who participated in the actions or manifest knowledge of SEAP.</p>			



## Procurements of Products and Services (CP)



### SEAP Measures/ Actions:

		Reduction of CO <sub>2</sub> emissions	Energy consumption Reduction	Renewable energies implementation
CP1	PROCUREMENT OF GOODS AND SERVICES APPLYING CRITERIA OF LOW CARBON FOOTPRINT, PROMOTING ENERGY EFFICIENCY AND RENEWABLE ENERGY.	X	X	X


<b>CP</b>		<b>STRATEGIC LINE:</b> PUBLIC PROCUREMENTS OF PRODUCTS AND SERVICES	<b>SEAP SECTOR:</b> All. Transversal
<b>CP 1</b>		<b>MEASURE:</b> PROCUREMENT OF GOODS AND SERVICES APPLYING CRITERIA OF LOW CARBON FOOTPRINT, PROMOTING ENERGY EFFICIENCY AND RENEWABLE ENERGY.	<b>PRIORITY:</b> <b>HIGH</b>
<b>OBJECTIVE:</b>			
Minimize carbon footprint of the City Council, reduce consumption and promote renewable energy.			
<b>DESCRIPTION OF THE MEASURE:</b>			
<p>The local administration must establish conditions or requirements for the reduction of CO<sub>2</sub> emissions, energy efficiency and promotion of renewable energies in the recruitment of their products and services, especially those directly related to energy consumption. This, besides having a direct impact on the contract to which it refers, contributes to sensitize to the local suppliers (many companies are located in the municipality itself) has an exemplary effect and, in many cases, can be a economic saving in midterm.</p> <p>Here some suggestions and options that can be developed according to local needs and the type of contract (works, management utilities, supplies, advice and assistance, services, etc.) are collected:</p> <ul style="list-style-type: none"> <li>■ Green electricity supply. Establish electrical contracts in which it is ensured that the 100% of the energy provided is from renewable sources with the original certification of origin according to the National Energy Commission (CNE). The City can register on the application of INEGA, Energy Institute of Galicia "Optimizer billing of electricity in municipal facilities" (<a href="http://appsinega.xunta.es/ofaem/">http://appsinega.xunta.es/ofaem/</a>). This application provides a study of consumption, highlighting the potential savings (optimizing the contracted power, energy demand, etc.) and appropriate procurement of electricity supply needs.</li> <li>■ Maintenance and management of public lighting. Adjustment of the Exterior Lighting facilities to the Regulation on energy efficiency in external lighting installations and Supplementary Technical Instructions EA-01 to EA-07 Energy (REEIAE. Royal Decree 1890/2008 of 14 November). Progressive replacement LED luminaire technology. Control and regulation of the lighting criteria and technologies for energy efficiency. The IDAE, Institute for Energy Diversification and Saving of Energy, has some model specifications</li> <li>■ Acquisition of office equipment, appliances, others with energy labels that accredit their maximum efficiency (A +, A ++, A +++, labeled "Energy Star").</li> <li>■ Acquisition or renting of efficient and innovative vehicles (hybrid or electric vehicle) or consuming alternative fuels, such as natural gas, LPG and biofuels</li> <li>■ Management and maintenance of public services and facilities with an improving energy efficiency, progressive reduction of emissions and promoting renewable energies criteria</li> <li>■ General contracting. Justification of measures to reduce carbon footprint.</li> <li>■ Others.</li> </ul> <p>These criteria and conditions may be included in the contract, technical specifications, criteria for selection of bidders, the contract award criteria or the terms of execution.</p>			
<b>RESPONSIBILITIES:</b>			
<b>Agents Involved:</b>		<b>In Charge:</b>	
<ul style="list-style-type: none"> <li>■ A Bola City Council</li> <li>■ Provincial Council of Ourense</li> </ul>		<ul style="list-style-type: none"> <li>■ A Bola City Council</li> <li>■ Provincial Council of Ourense</li> </ul>	
<b>Need of contractual relationship:</b>			
Without specifying			
<b>Contract Type:</b> -		<b>Award procedure:</b> -	
<b>SCHEDULE:</b>			
<b>Frequency:</b> -		<b>Start date:</b> 2016	<b>finish date:</b> 2020
<b>COSTS:</b>			
<b>Costs (€):</b> No cost		<b>Funding:</b> -	<b>Rate of return :</b> -

CP	STRATEGIC LINE: PUBLIC PROCUREMENTS OF PRODUCTS AND SERVICES	SEAP SECTOR: All. Transversal
CP 1	MEASURE: PROCUREMENT OF GOODS AND SERVICES APPLYING CRITERIA OF LOW CARBON FOOTPRINT, PROMOTING ENERGY EFFICIENCY AND RENEWABLE ENERGY.	PRIORITY: <b>HIGH</b>
<b>BENEFITS:</b>		
<p><b>Annual emissions avoided (tCO<sub>2</sub>):</b> <b>50.74</b></p> <p><b>Annual energy savings (MWh):</b> 171.20</p> <p><b>Annual renewable energy production (MWh):</b> Unquantified</p> <p><i>Reduction hypothesis:</i> The application of this measure can have very different effects depending on the services or products demanded in the period considered. However, in general it is assumed that it will help to reduce at least a 25% of the emissions associated with buildings and facilities, lighting and municipal fleet</p> <p><b>Accumulated avoided emissions to 2020 (tCO<sub>2</sub>):</b> 202.96</p> <p><b>Accumulated energy savings to 2020 (MWh):</b> 684.81</p> <p><b>Accumulated Production renewable energies to 2020(MWh):</b> Unquantified</p>		
<b>MONITORING INDICATORS:</b>		
<p><b>Indicator:</b> Nº and % of public contracts that have included criteria for low carbon footprint, energy efficiency and promoting renewable energies.</p> <p><b>Units:</b> Nº and %</p>		

Buildings, Equipment and Facilities Municipal (EEI<sub>M</sub>)

## SEAP Measures/ Actions:

		Reduction of CO <sub>2</sub> emissions	Energy consumption Reduction	Renewable energies implementation
<b>EEI<sub>M</sub> 1</b>	ENERGY CERTIFICATION OF BUILDINGS / MUNICIPAL FACILITIES AND ACTIONS TO IMPROVE THE QUALIFICATION	X	X	
<b>CPSF EEI<sub>M</sub> 2</b>	EDUCATION OF LOCAL EMPLOYEES ON GOOD ENERGY PRACTICES IN BUILDINGS AND FACILITIES	X	X	

<b>EEI<sub>M</sub></b>		<b>STRATEGIC LINE:</b> BUILDINGS, EQUIPMENT/FACILITIES MUNICIPAL	<b>SEAP SECTOR:</b> BUILDINGS, EQUIPMENT/FACILITIES
<b>EEI<sub>M</sub> 1</b>		<b>MEASURE:</b> ENERGY CERTIFICATION OF BUILDINGS / MUNICIPAL FACILITIES AND ACTIONS TO IMPROVE THE QUALIFICATION	<b>PRIORITY:</b> <b>HIGH</b>
<b>OBJECTIVE:</b> Legal compliance, saving, energy efficiency and the promotion of renewable energies			
<b>DESCRIPTION OF THE MEASURE:</b>			
<p>Royal Decree 235/2013, of 5 April, approving the basic procedure for certifying the energy efficiency of buildings establishes the obligation to obtain the energy certification to all public buildings with a useful floor area over 250 m<sup>2</sup> and usually frequented by the public (E.g. City Hall building, residence, etc.). Therefore, taking advantage of the need for compliance with this legal mandate, it will be held an initial energy audit whose data will form the basis for the Energy Certificate for each building / municipal facility, showing:</p> <ul style="list-style-type: none"> <li>- Technical data and assessment of the building energy characteristics (thermal covering, heating systems, lighting systems, use, etc.).</li> <li>- Basic legislation.</li> <li>- Energy consumption and its equivalent on CO<sub>2</sub> emissions.</li> <li>- Energy rating of the building (energy label) as the reference procedures and methodologies.</li> <li>- Recommended actions to improve the rating / recommendations for savings and energy efficiency: identification, design and valuations of them.</li> <li>- Tests, checks and inspections undertaken by the certifying technician.</li> </ul> <p>Energy certificate for each building / installation is obtained using recognized procedures and records. Once certified, the energy label must be displayed in a prominent and conspicuous location.</p> <p>Subsequently, depending on the energy marks obtained for each building / municipal facility and recommended actions to improve this rating (eg: Improving the energy efficiency of the thermal envelope, improving the energy efficiency of heating and lighting, replacement conventional energy by biomass, geothermal or aerothermal in thermal installations, etc.) should carry out a specific plan of action with the program of actions that must be addressed in each case until 2020, including investment to be undertaken. For each building / municipal facility should improve the rating by at least one level.</p> <p>It is recommended, among other publications:          "Energy Efficiency in Municipal Units". Spanish Federation of Municipalities and Provinces (FEMP)  <a href="http://www.redciudadesclima.es/uploads/documentacion/97a9d2195549da7f51cd21c7a4ffec7a.pdf">http://www.redciudadesclima.es/uploads/documentacion/97a9d2195549da7f51cd21c7a4ffec7a.pdf</a>          "Study of energy optimization in municipal sector of Galicia". Galician Energy Institute (INEGA)  <a href="http://www.redciudadesclima.es/uploads/documentacion/97a9d2195549da7f51cd21c7a4ffec7a.pdf">http://www.redciudadesclima.es/uploads/documentacion/97a9d2195549da7f51cd21c7a4ffec7a.pdf</a></p>			
<b>RESPONSIBILITIES:</b>			
<b>Agents Involved:</b>		<b>In Charge:</b>	
<ul style="list-style-type: none"> <li>■ A Bola City Council</li> <li>■ Provincial Council of Ourense</li> </ul>		<ul style="list-style-type: none"> <li>■ A Bola City Council</li> <li>■ Provincial Council of Ourense</li> </ul>	
<b>Need of contractual relationship:</b>			
YES. Local administration –private company contract			
<b>Contract Type:</b>		<b>Award procedure:</b>	
Services / Supplies / Works		to determinate	
<b>SCHEDULE:</b>			
<b>Frequency:</b> -		<b>Start date:</b> 2015	<b>Finish date:</b> 2020
<b>COSTS:</b>			
<b>Costs (€):</b>	50000.00 € (including the implementation of the improvement measures)	<b>Funding:</b> A Bola City Council Grants INEGA (Galician Energy Institute) (Ex: Grant projects biomass thermal equipment) IDAE grants FEADER / FEDER / LIFE	<b>Rate of return :</b> 20 years
<b>BENEFITS:</b>			
<b>Annual emissions avoided (tCO<sub>2</sub>):</b>		<b>40.08</b>	
<i>Reduction hypothesis:</i> The application of this measure can have varied effects depending on the buildings / facilities in which it is applied. However, in general it is assumed that can help reduce 40% of the emissions associated with buildings and facilities.			
<b>Annual energy savings (MWh):</b>		133.70	
<b>Annual renewable energy production (MWh):</b>		-	
<b>Accumulated avoided emissions to 2020 (tCO<sub>2</sub>):</b>		160.33	
<b>Accumulated energy savings to 2020 (MWh):</b>		534.79	
<b>Accumulated Production renewable energies to 2020(MWh):</b>		-	
<b>MONITORING INDICATORS:</b>			
<b>Indicator:</b>	Nº Energy Audits conducted Nº Energy Certificates obtained Nº of Performances executed to improve rating		<b>Units:</b> Nº


<b>CPSF EEI<sub>M</sub></b>  <b>CPSF-EEI<sub>M</sub> 2</b>		<b>STRATEGIC LINE:</b> COMMUNICATION, AWARENESS AND TRAINING BUILDINGS, EQUIPMENT/FACILITIES MUNICIPAL	<b>SEAP SECTOR:</b> BUILDINGS, EQUIPMENT/FACILITIES									
	<b>MEASURE:</b> EDUCATION OF LOCAL EMPLOYEES ON GOOD ENERGY PRACTICES IN BUILDINGS AND FACILITIES	<b>PRIORITY:</b> <b>HIGH</b>										
<b>OBJECTIVE:</b> Report on the implementation of the SEAP and the need to optimize the use of energy (savings and efficiency).												
<b>DESCRIPTION OF THE MEASURE:</b> <p>Train and inform to municipal officials and employees of the SEAP, the existing good practices to reduce unnecessary consumption in the field of municipal buildings and the energy situation of the buildings. At least one course or conference to deal with these issues must be taken.</p> <p>Keep in mind that the energy saving potential of many municipal buildings and facilities depend on responsible practices for lighting systems, air conditioning and electrical equipment.</p> <p>The IDAE, Institute for Energy Diversification and Saving of Energy offers some courses (<a href="http://www.aprendecomooahorrarenergia.es">www.aprendecomooahorrarenergia.es</a>) In addition to the courses that promotes the INEGA, Galician Energy Institute (<a href="http://www.inega.es/informacion/formacion/">http://www.inega.es/informacion/formacion/</a>). Other sources for training: Guide for the energy efficient behavior of public employees in the workplace (<a href="https://www.agenciaandaluzadelaenergia.es/sites/default/files/guia_ahorro_energetico_09_14102010.pdf">https://www.agenciaandaluzadelaenergia.es/sites/default/files/guia_ahorro_energetico_09_14102010.pdf</a>) or Practical Guide of the Energy. Efficient and responsible consumption (<a href="http://dl.idae.es/Publicaciones/11046%20Guia%20Practica%20Energia%203%20Ed.rev%20y%20actualizada%20A2011.pdf">http://dl.idae.es/Publicaciones/11046%20Guia%20Practica%20Energia%203%20Ed.rev%20y%20actualizada%20A2011.pdf</a>).</p> <p>Placing information signs in visible places it is recommended.</p> <p>This measure is considered a development performance of the communication and participation plan of the SEAP until 2020 (CPSF 1).</p>												
<b>RESPONSIBILITIES:</b> <table border="0"> <tr> <td> <b>Agents Involved:</b> <ul style="list-style-type: none"> <li>A Bola City Council</li> <li>Provincial Council of Ourense</li> </ul> </td> <td> <b>In Charge:</b> <ul style="list-style-type: none"> <li>A Bola City Council</li> <li>Provincial Council of Ourense</li> </ul> </td> </tr> </table> <p style="text-align: center;"><b>Need of contractual relationship:</b> NO/YES. Local administration – private company contract</p> <table border="0"> <tr> <td> <b>Contract Type:</b> Services         </td> <td> <b>Award procedure:</b> to determinate         </td> </tr> </table>				<b>Agents Involved:</b> <ul style="list-style-type: none"> <li>A Bola City Council</li> <li>Provincial Council of Ourense</li> </ul>	<b>In Charge:</b> <ul style="list-style-type: none"> <li>A Bola City Council</li> <li>Provincial Council of Ourense</li> </ul>	<b>Contract Type:</b> Services	<b>Award procedure:</b> to determinate					
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<b>COSTS:</b> <table border="0"> <tr> <td> <b>Costs (€):</b> 300 €         </td> <td> <b>Funding:</b> City Council Provincial Council of Ourense FEDER / FSE         </td> <td> <b>Rate of return :</b> -         </td> </tr> </table>				<b>Costs (€):</b> 300 €	<b>Funding:</b> City Council Provincial Council of Ourense FEDER / FSE	<b>Rate of return :</b> -						
<b>Costs (€):</b> 300 €	<b>Funding:</b> City Council Provincial Council of Ourense FEDER / FSE	<b>Rate of return :</b> -										
<b>BENEFITS:</b> <table border="0"> <tr> <td> <b>Annual emissions avoided (tCO<sub>2</sub>):</b> </td> <td> <b>5.01</b> </td> <td>           Reduction hypothesis: According to the publication Achieving energy efficiency Through Behaviour change: what does it take ?. European Environment Agency. May 2013. (<a href="http://www.eea.europa.eu/publications/achieving-energy-efficiencythrough-behaviour">http://www.eea.europa.eu/publications/achieving-energy-efficiencythrough-behaviour</a>) with such measures emissions from municipal buildings and facilities can be reduced a 5%.         </td> </tr> <tr> <td> <b>Annual energy savings (MWh):</b> 16.71         </td> <td> <b>Accumulated avoided emissions to 2020 (tCO<sub>2</sub>):</b> 20.04         </td> <td> <b>Accumulated energy savings to 2020 (MWh):</b> 66.85         </td> </tr> <tr> <td> <b>Annual renewable energy production (MWh):</b> -         </td> <td> <b>Accumulated Production renewable energies to 2020(MWh):</b> -         </td> <td></td> </tr> </table>				<b>Annual emissions avoided (tCO<sub>2</sub>):</b>	<b>5.01</b>	Reduction hypothesis: According to the publication Achieving energy efficiency Through Behaviour change: what does it take ?. European Environment Agency. May 2013. ( <a href="http://www.eea.europa.eu/publications/achieving-energy-efficiencythrough-behaviour">http://www.eea.europa.eu/publications/achieving-energy-efficiencythrough-behaviour</a> ) with such measures emissions from municipal buildings and facilities can be reduced a 5%.	<b>Annual energy savings (MWh):</b> 16.71	<b>Accumulated avoided emissions to 2020 (tCO<sub>2</sub>):</b> 20.04	<b>Accumulated energy savings to 2020 (MWh):</b> 66.85	<b>Annual renewable energy production (MWh):</b> -	<b>Accumulated Production renewable energies to 2020(MWh):</b> -	
<b>Annual emissions avoided (tCO<sub>2</sub>):</b>	<b>5.01</b>	Reduction hypothesis: According to the publication Achieving energy efficiency Through Behaviour change: what does it take ?. European Environment Agency. May 2013. ( <a href="http://www.eea.europa.eu/publications/achieving-energy-efficiencythrough-behaviour">http://www.eea.europa.eu/publications/achieving-energy-efficiencythrough-behaviour</a> ) with such measures emissions from municipal buildings and facilities can be reduced a 5%.										
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<b>Annual renewable energy production (MWh):</b> -	<b>Accumulated Production renewable energies to 2020(MWh):</b> -											
<b>MONITORING INDICATORS:</b> <table border="0"> <tr> <td> <b>Indicator:</b> N° of information / training events developed N° informative posters placed N° information guides distributed         </td> <td> <b>Units:</b> N°         </td> </tr> </table>				<b>Indicator:</b> N° of information / training events developed N° informative posters placed N° information guides distributed	<b>Units:</b> N°							
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**Buildings, Equipment and Facilities Residential-Tertiary (EEI<sub>RT</sub>)****SEAP Measures/ Actions:**

		Reduction of CO <sub>2</sub> emissions	Energy consumption Reduction	Renewable energies implementation
<b>EEI<sub>RT</sub> 1</b>	IMPROVE TERTIARY AND RESIDENTIAL BUILDINGS ENERGY QUALIFICATION	X	X	X
<b>EEI<sub>RT</sub> 2</b>	PROMOTION AND INCENTIVE OF RENEWABLE ENERGY (PHOTOVOLTAIC, SOLAR THERMAL, BIOMASS, OTHERS) AND NATURAL GAS	X		X
<b>EEI<sub>RT</sub> 3</b>	EFFECTIVE CONTROL AND APPLICATION OF THE BASIC ENERGY SAVING REQUIREMENTS OF THE TECHNICAL BUILDING CODE IN NEW CONSTRUCTION BUILDINGS AND OPERATIONS ON EXISTING BUILDINGS. DEVELOPMENT OF THE ORDINANCE.	X	X	X
<b>CPSF EEI<sub>RT</sub> 4</b>	CAMPAIGN FOR ENERGY SAVING IN THE HOMES AND SERVICES	X	X	

<b>EEI<sub>RT</sub></b>	<b>STRATEGIC LINE:</b> BUILDINGS, EQUIPMENT/FACILITIES RESIDENTIAL AND TERTIARY		<b>SEAP SECTOR:</b> BUILDINGS, EQUIPMENT/FACILITIES
<b>EEI<sub>RT</sub> 1</b>	<b>MEASURE:</b> IMPROVE TERTIARY AND RESIDENTIAL BUILDINGS ENERGY QUALIFICATION		<b>PRIORITY:</b> <b>HIGH</b>
<b>OBJECTIVE:</b> Encouragement for the improvement of the energy rating of residential and commercial buildings.			
<b>DESCRIPTION OF THE MEASURE:</b> A Bola City Council will conduct the necessary incentives to encourage and facilitate the development of actions to promote the improvement of the energy rating of the tertiary and residential buildings. Among other actions: <ul style="list-style-type: none"> <li>- Improving the energy efficiency of the thermal cover.</li> <li>- Improving the energy efficiency of heating and lighting.</li> <li>- Replacing conventional energy with biomass / wind power / geothermal energy in thermal plants.</li> <li>- Installing solar panels.</li> <li>- Others</li> </ul> For this purpose the following actions will be taken: <ul style="list-style-type: none"> <li>- Discount on taxes and municipal fees (Ex: IBI, building permit, etc.) for those buildings that justify an improvement in their energy rating.</li> <li>- Disseminate of the aids from the the INEGA (ex: replacement of biomass / wind power / geothermal boilers, Renove plans (windows, appliances, elevators, etc.), renewable energy projects, and others.).</li> <li>- Dissemination of the aids from the IDAE, Institute for Energy Diversification and Saving of Energy (eg aid program for energy rehabilitation of existing buildings (PAREER-CRECE program), Program for the implementation of projects of thermal biomass in buildings, others.).</li> </ul>			
<b>RESPONSIBILITIES:</b>			
<b>Agents Involved:</b> <ul style="list-style-type: none"> <li>■ A Bola City Council</li> <li>■ Provincial Council of Ourense</li> </ul>		<b>In Charge:</b> <ul style="list-style-type: none"> <li>■ A Bola City Council</li> <li>■ Provincial Council of Ourense</li> </ul>	
<b>Need of contractual relationship:</b> NO			
<b>Contract Type:</b> -		<b>Award procedure:</b> -	
<b>SCHEDULE:</b>			
<b>Frequency:</b> -		<b>Start date:</b> 2016	<b>Finish date:</b> 2020
<b>COSTS:</b>			
<b>Costs (€):</b> 750 € (The cost of improvements and Certifications is assumed by the owners eligible for aids / subsidies identified)	<b>Funding:</b> City Council Provincial Council of Ourense INEGA, Energy Institute of Galicia IDEA, Institute for Diversification and Saving of Energy FEDER/ FEADER	<b>Rate of return :</b> -	
<b>BENEFITS:</b>			
<b>Annual emissions avoided (tCO<sub>2</sub>):</b>		<b>54.91</b>	
<b>Annual energy savings (MWh):</b> 192.40		<b>Accumulated avoided emissions to 2020 (tCO<sub>2</sub>):</b> 219.65	
<b>Annual renewable energy production (MWh):</b> Unquantified		<b>Accumulated energy savings to 2020 (MWh):</b> 769.58	
		<b>Accumulated Production renewable energies to 2020(MWh):</b> Unquantified	
<b>MONITORING INDICATORS:</b>			
<b>Indicator:</b> Number and% of residential and tertiary buildings that prove an improvement in their energy rating.		<b>Units:</b> Nº and %	



EEI <sub>RT</sub>		<b>STRATEGIC LINE:</b> BUILDINGS, EQUIPMENT/FACILITIES RESIDENTIAL AND TERTIARY	<b>SEAP SECTOR:</b> BUILDINGS, EQUIPMENT/FACILITIES
		<b>MEASURE:</b> PROMOTION AND INCENTIVE OF RENEWABLE ENERGY (PHOTOVOLTAIC, SOLAR THERMAL, BIOMASS, OTHERS)	<b>PRIORITY:</b> <b>HIGH</b>
<b>EEI<sub>RT</sub> 2</b>			
<b>OBJECTIVE:</b> Encourage the implementation of technology for the utilization of renewable energy in buildings / residential facilities and services.			
<b>DESCRIPTION OF THE MEASURE:</b> A Bola City Council will conduct the necessary incentives to encourage and facilitate the implementation of <b>renewable energy</b> in buildings / installations in the residential sector and services. Especially: <ul style="list-style-type: none"> <li>- Implementation of thermal and photovoltaic solar energy.</li> <li>- Implementation of aerothermal and geothermal.</li> <li>- Replacement of conventional energy biomass heating systems.</li> </ul> For this purpose the following actions will be taken: <ul style="list-style-type: none"> <li>- Discount on taxes and municipal fees (Ex: IBI, building permit, etc.) for those buildings that implement this technology.</li> <li>- Dissemination of aid from the INEGA, among others: Grants to projects revitalizing rural areas of Galicia for renewable energy projects, co-financed by the European Agricultural Fund for Rural Development (Feader); Grants to projects of biomass thermal equipment financed by the European Agricultural Fund for Rural Development (Feader); Aid program for energy rehabilitation of existing buildings in the residential sector (housing and hotel use).</li> <li>- Dissemination of the possibility of hiring of green electricity (certified origin from renewable sources)</li> <li>- Dissemination of advantages, guides and relevant documentation, including: "Energy efficiency and renewable energies in rehabilitation of buildings." Energy Efficiency and Sustainability Technology Centre; "Solar thermal energy to neighboring communities." IDEA; "Solar thermal energy for houses." IDEA; Others.</li> </ul>			
<b>RESPONSIBILITIES:</b>			
<b>Agents Involved:</b>		<b>In Charge:</b>	
<ul style="list-style-type: none"> <li>■ A Bola City Council</li> <li>■ Provincial Council of Ourense</li> </ul>		<ul style="list-style-type: none"> <li>■ A Bola City Council</li> <li>■ Provincial Council of Ourense</li> </ul>	
<b>Need of contractual relationship:</b> NO			
<b>Contract Type:</b> -		<b>Award procedure:</b> -	
<b>SCHEDULE:</b>			
<b>Frequency:</b> -		<b>Start date:</b> 2016	<b>Finish date:</b> 2020
<b>COSTS:</b>			
<b>Costs (€):</b> 750 € (The cost of improvements and Certifications is assumed by the owners eligible for aids / subsidies identified)		<b>Funding:</b> City Council Provincial Council of Ourense INEGA, Energy Institute of Galicia IDEA, Institute for Diversification and Saving of Energy FEDER/ FEADER	<b>Rate of return :</b> -
<b>BENEFITS:</b>			
<b>Annual emissions avoided (tCO<sub>2</sub>):</b>		<b>150.84</b>	
<b>Annual energy savings (MWh):</b> -		<b>Accumulated avoided emissions to 2020 (tCO<sub>2</sub>):</b> 603.36	
<b>Annual renewable energy production (MWh):</b> 578.11		<b>Accumulated energy savings to 2020 (MWh):</b> -	
		<b>Accumulated Production renewable energies to 2020(MWh):</b> 2312.45	
<b>MONITORING INDICATORS:</b>			
<b>Indicator:</b>	Number and% of residential and tertiary buildings that prove that they have an energy installation for the use of renewable energy.		<b>Units:</b> Nº and %

EEI <sub>RT</sub>	STRATEGIC LINE: BUILDINGS, EQUIPMENT/FACILITIES RESIDENTIAL AND TERTIARY	SEAP SECTOR: BUILDINGS, EQUIPMENT/FACILITIES
		PRIORITY: <b>HIGH</b>
EEI <sub>RT</sub> 3	MEASURE: EFFECTIVE CONTROL AND APPLICATION OF THE BASIC ENERGY SAVING REQUIREMENTS OF THE TECHNICAL BUILDING CODE IN NEW CONSTRUCTION BUILDINGS AND OPERATIONS ON EXISTING BUILDINGS. DEVELOPMENT OF THE ORDINANCE.	
OBJECTIVE:		
Verify the compliance of the basic requirements of energy saving that the CTE establish for new buildings and existing buildings interventions.		
DESCRIPTION OF THE MEASURE:		
<p>The Technical Building Code (CTE) provides the basic quality requirements to be fulfilled by buildings to complement the basic requirements of safety and habitability trying to improve the quality of the building, and to promote innovation and sustainability (Royal Decree 314 / 2006 of March 17, approving the Technical Building Code ). The rational use of energy is one of the aspects that compromises, as five demands (as the last update<sup>3</sup>):</p> <ul style="list-style-type: none"> <li>- HE 0 Limitation of the energy consumption.</li> <li>- HE 1 Limitation of energy demand.</li> <li>- HE 2 Efficiency of thermal installations.</li> <li>- HE 3 Energy efficiency of lighting installations.</li> <li>- HE 4 Minimum solar contribution to domestic hot water.</li> <li>- HE 5 Minimum photovoltaic contribution of electrical energy.</li> </ul> <p>According to the study "Evaluación del potencial de energía solar térmica y fotovoltaica derivado del cumplimiento del Código Técnico de la Edificación. Estudio técnico PER 2011 - 2020" of the Institute for Diversification and Saving of Energy (IDAE), from the year 2011 the 100% of completed homes will be affected by the CTE. T</p> <p>he City Council shall verify the inclusion of the minimum requirements of energy saving (HE) established in the Technical Building Code (CTE) in all new buildings and / or interventions on existing buildings that are carried out in his term municipal, demanding its compliance to issue the necessary licenses or authorizations. To this effect it may develop ordinances following the model developed in the PROXECTO RETALER "MODELO DE ORDENANZA MUNICIPAL PARA A MELLORA DA EFICIENCIA ENERXÉTICA E PROMOCIÓN DAS RENOVABLES EN CONCELLOS" (<a href="http://planificacion.depourense.es/inde.g.php/es/component/rubberdoc/doc/94/raw">http://planificacion.depourense.es/inde.g.php/es/component/rubberdoc/doc/94/raw</a>).</p>		
RESPONSIBILITIES:		
<p><b>Agents Involved:</b></p> <ul style="list-style-type: none"> <li>■ A Bola City Council</li> <li>■ Provincial Council of Ourense</li> </ul> <p><b>In Charge:</b></p> <ul style="list-style-type: none"> <li>■ A Bola City Council</li> <li>■ Provincial Council of Ourense</li> </ul> <p><b>Need of contractual relationship:</b></p> <p>NO</p> <p><b>Contract Type:</b></p> <p><b>Award procedure:</b></p>		
SCHEDULE:		
<p><b>Frequency:</b> - <b>Start date:</b> 2016 <b>Finish date:</b> 2020</p>		
COSTS:		
<p><b>Costs (€):</b> Own funds <b>Funding:</b> City Council Provincial Council of Ourense <b>Rate of return :</b> -</p>		
BENEFITS:		
<p><b>Annual emissions avoided (tCO<sub>2</sub>):</b> <b>16.47</b></p> <p><b>Annual energy savings (MWh):</b> Unquantified</p> <p><b>Annual renewable energy production (MWh):</b> 57.72</p> <p>Reduction hypothesis: It is estimated that this measure can reduce emissions of tertiary and residential buildings and facilities in at least 1.5%.</p> <p><b>Accumulated avoided emissions to 2020 (tCO<sub>2</sub>):</b> 65.90</p> <p><b>Accumulated energy savings to 2020 (MWh):</b> Unquantified</p> <p><b>Accumulated Production renewable energies to 2020(MWh):</b> 230.88</p>		
MONITORING INDICATORS:		
<p><b>Indicator:</b> Number and% of buildings that comply the minimum requirements of energy saving (HE) established in the CTE.</p> <p><b>Units:</b> Nº and %</p> <p>Adoption of an Ordinance for energy efficiency and promoting renewable energies in new buildings or existing buildings interventions.</p> <p>Presence and absence</p>		

<sup>3</sup> Order FOM / 1635/2013 of 10 September, which updates the DB-HE "Energy saving" basic document, the Technical Building Code, approved by Royal Decree 314/2006 of March 17. It partially transposes into Spanish law Directive 2010/31 / EU of the European Parliament and of the Council of 19 May 2010, with regard to the requirements for energy efficiency in buildings, established in Articles 3, 4, 5, 6 and 7, and Directive 2009/28 / EC of the European Parliament and of the Council of 23 April 2009, concerning the requirement of minimum levels of energy from renewable sources in buildings, established in their Article 13.


<b>CPSF EEI<sub>RT</sub></b>		<b>STRATEGIC LINE:</b> BUILDINGS, EQUIPMENT/FACILITIES RESIDENTIAL AND TERTIARY	<b>SEAP SECTOR:</b> BUILDINGS, EQUIPMENT/FACILITIES
		<b>MEASURE:</b> CAMPAIGN FOR ENERGY SAVING IN THE HOMES AND SERVICES	<b>PRIORITY:</b> <b>HIGH</b>
<b>CPSF-EEI<sub>RT</sub> 4</b>			
<b>OBJECTIVE:</b> Encourage energy savings in the residential sector and services.			
<b>DESCRIPTION OF THE MEASURE:</b> It will carry out an information and awareness campaign for the promotion of energy efficiency in homes and businesses, which will be implemented in: <ul style="list-style-type: none"> <li>- Disseminate by municipal channels existing public funds on Renewal of appliances, boilers, lighting, etc. (INEGA Aids, IDEA, etc.).</li> <li>- Organize activities for the dissemination of the importance of energy saving in schools.</li> <li>- Organize a campaign in the municipal public services with local headquarters.</li> <li>- Disseminate efficiency guides of the INEGA, Energy Institute of Galicia, among others:             <ul style="list-style-type: none"> <li>Practical guide to energy saving 2011 (<a href="http://www.inega.es/descargas/publicaciones/Guia_Practica_Aforro_Energia_2011.pdf">http://www.inega.es/descargas/publicaciones/Guia_Practica_Aforro_Energia_2011.pdf</a>)</li> <li>Practical Guide to Home Energy (<a href="http://www.inega.es/descargas/publicaciones/71-d-guia_practica_energia.pdf">http://www.inega.es/descargas/publicaciones/71-d-guia_practica_energia.pdf</a>)</li> <li>Energy savings in homes. Manual of good practices.</li> <li>Energy optimization study hostel sector of Galicia (<a href="http://www.inega.es/descargas/publicaciones/68-d-EstudodeoptimizacionenergeticaSectorHotelesGalic.pdf">http://www.inega.es/descargas/publicaciones/68-d-EstudodeoptimizacionenergeticaSectorHotelesGalic.pdf</a>)</li> <li>Energy savings guide for businessmen (<a href="http://www.comercio.gob.es/es-ES/comercio-interior/Guias-de-Ayuda-al-Comercio/Paginas/Gu%C3%ADa-de-ahorro-energ%C3%A9tica-dirigida-al-comerciante-.aspx">http://www.comercio.gob.es/es-ES/comercio-interior/Guias-de-Ayuda-al-Comercio/Paginas/Gu%C3%ADa-de-ahorro-energ%C3%A9tica-dirigida-al-comerciante-.aspx</a>)</li> </ul> </li> </ul> And from the IDAE, Institute for Energy Diversification and Saving of Energy, as an example: <ul style="list-style-type: none"> <li>- Posters with good advice (<a href="http://www.idae.es/inde.g.php/mod.pags/mem.detalle/releategoria.1039/id.54/relemenu.64">http://www.idae.es/inde.g.php/mod.pags/mem.detalle/releategoria.1039/id.54/relemenu.64</a>)</li> <li>- Design a <b>municipal label or distinction</b> for houses and services to prove their commitment to energy savings</li> <li>- Dissemination of grants for saving of the INEGA and other entities (ex: grants on energy efficiency projects in the sectors of industry and services).</li> <li>- Introduce the use of "Energy audit on-line" application for SMEs from INEGA. (<a href="http://appsinega.xunta.es/diagen_pyme/Login.php?ret_link=%2Fdiagen_pyme%2F&amp;type=notLogged">http://appsinega.xunta.es/diagen_pyme/Login.php?ret_link=%2Fdiagen_pyme%2F&amp;type=notLogged</a>).</li> </ul> The campaign will consider resources such as Resource for Education and Communication on Climate Change offered by the Ministry of Agriculture, Food and Environment ( <a href="http://www.magrama.gob.es/es/ceneam/grupos-de-trabajo-y-seminarios/respuestas-desde-la-educacion-y-la-comunicacion-al-cambio-climatico/">http://www.magrama.gob.es/es/ceneam/grupos-de-trabajo-y-seminarios/respuestas-desde-la-educacion-y-la-comunicacion-al-cambio-climatico/</a> ); the green homes program ( <a href="http://www.magrama.gob.es/es/ceneam/programas-de-educacion-ambiental/hogares-verdes/default.aspx">http://www.magrama.gob.es/es/ceneam/programas-de-educacion-ambiental/hogares-verdes/default.aspx</a> ); IDAE digital classroom to learn how to save energy ( <a href="http://www.aprendecomohorrenenergia.es/">http://www.aprendecomohorrenenergia.es/</a> ); others.         This measure is considered a development performance of the communication and participation plan of the SEAP until 2020 (CPSF 1).			
<b>RESPONSIBILITIES:</b>			
<b>Agents Involved:</b> <ul style="list-style-type: none"> <li>■ A Bola City Council</li> <li>■ Provincial Council of Ourense</li> </ul>		<b>In Charge:</b> <ul style="list-style-type: none"> <li>■ A Bola City Council</li> <li>■ Provincial Council of Ourense</li> </ul>	
<b>Need of contractual relationship:</b> to specify according to the needs			
<b>Contract Type:</b>		<b>Award procedure:</b>	
<b>SCHEDULE:</b>			
<b>Frequency:</b> -		<b>Start date:</b> 2016	<b>finish date:</b> 2020
<b>COSTS:</b>			
<b>Costs (€):</b> 1500 €		<b>Funding:</b> <ul style="list-style-type: none"> <li>A Bola City Council</li> <li>IDAE/INEGA</li> <li>FEDER/LIFE</li> <li>Provincial Council of Ourense</li> </ul>	<b>Rate of return :</b>
<b>BENEFITS:</b>			
<b>Annual emissions avoided (tCO<sub>2</sub>):</b>		<b>98.84</b>	
<b>Annual energy savings (MWh):</b> 346.31		<b>Accumulated avoided emissions to 2020 (tCO<sub>2</sub>):</b> 395.38	
<b>Annual renewable energy production (MWh):</b> -		<b>Accumulated energy savings to 2020 (MWh):</b> 1385.25	
		<b>Accumulated Production renewable energies to 2020(MWh):</b> -	
<b>MONITORING INDICATORS:</b>			
<b>Indicator:</b>	Nº events or informative and educational activities performed Citizenship and services. Nº of labels or "green" awards granted.		<b>Units:</b> Nº


## Public Lighting (AP)



### SEAP Measures/ Actions:

		Reduction of CO <sub>2</sub> emissions	Energy consumption Reduction	Renewable energies implementation
AP 1	AUDIT OF PUBLIC LIGHTING	X	X	
AP 2	RENEWAL OF PUBLIC LIGHTING OUTDOOR FACILITIES	X	X	

<b>AP</b>		<b>STRATEGIC LINE:</b> PUBLIC LIGHTING	<b>SEAP SECTOR:</b> PUBLIC LIGHTING
		<b>MEASURE:</b> AUDIT OF PUBLIC LIGHTING	<b>PRIORITY:</b> <b>HIGH</b>
<b>AP 1</b>			
<b>OBJECTIVE:</b>			
Know the current situation of street lighting to establish proposals and actions for energy saving and efficiency.			
<b>DESCRIPTION OF THE MEASURE:</b>			
<p>An audit of public lighting in the municipality of A Bola will be carried out from which a series of actions for energy saving and efficiency will be established. It is recommended to perform the audit in accordance with the technical specifications outlined in the Energy Audit Protocol Facility Public Lighting Exterior of the IDAE, Institute for Energy Diversification and Saving of Energy (<a href="http://www.idae.es/uploads/documentos/documentos/Protocolo_de_Auditoria_de_Alumbrado_Publico_023d5bd3.pdf">http://www.idae.es/uploads/documentos/documentos/Protocolo_de_Auditoria_de_Alumbrado_Publico_023d5bd3.pdf</a>). Among other things, the audit should include:</p> <ul style="list-style-type: none"> <li>- Facilities inventory and data collection: General information of the facilities; Terms of use; Consumer and equipment inventory; Points of light fixtures and lamps; command centers and maneuver; regulation and control.</li> <li>- Measurements: electrical quantities and levels of illumination.</li> <li>- Diagnosis: electricity rates; lighting; lamps; distribution boards, power and control systems; lighting levels; outdoor lighting ratios; maintenance.</li> <li>- Suggestions for improvement: saving measures and energy efficiency; saving on electricity; savings on cost; savings on polluted emissions; economic analysis and cost-effectiveness of the proposals.</li> </ul> <p>Improvement proposals made under this audit should ensure compliance with Royal Decree 1890/2008, of November 14, by Regulation approves energy efficiency in outdoor lighting and its complementary technical instructions EA-01 EA-07 (BOE no. 279 of 19 November) trying to achieve the highest rating (A or B).</p>			
<b>RESPONSIBILITIES:</b>			
<p><b>Agents Involved:</b></p> <ul style="list-style-type: none"> <li>■ A Bola City Council</li> <li>■ Provincial Council of Ourense</li> </ul> <p><b>In Charge:</b></p> <ul style="list-style-type: none"> <li>■ A Bola City Council</li> <li>■ Provincial Council of Ourense</li> </ul> <p><b>Need of contractual relationship:</b> YES. Local administration - private company contract</p> <p><b>Contract Type:</b> Services <b>Award procedure:</b> Minor contract. direct award</p>			
<b>SCHEDULE:</b>			
<p><b>Frequency:</b> - <b>Start date:</b> 2016 <b>Finish date:</b> 2016</p>			
<b>COSTS:</b>			
<p><b>Costs (€):</b> 5000€ (Audit, does not include the cost of the improvement actions) <b>Funding:</b> A Bola City Council INEGA National Energy Efficiency Fund. Municipal program of outdoor lighting aids. <b>Rate of return :</b> 6,5 years</p>			
<b>BENEFITS:</b>			
<p><b>Annual emissions avoided (tCO<sub>2</sub>):</b> - <b>Reduction hypothesis:</b> The audit itself does not generate emissions reductions while makes possible the knowledge of the state of basic lighting to undertake improvement actions in the future</p> <p><b>Annual energy savings (MWh):</b> - <b>Accumulated avoided emissions to 2020 (tCO<sub>2</sub>):</b> -</p> <p><b>Annual renewable energy production (MWh):</b> - <b>Accumulated energy savings to 2020 (MWh):</b> -</p> <p><b>Accumulated Production renewable energies to 2020(MWh):</b> -</p>			
<b>MONITORING INDICATORS:</b>			
<p><b>Indicator:</b> Number of audits performed <b>Units:</b> Nº</p> <p>Number of executed measures of the improvement plan €</p> <p>Investments made in measures of the improvement plan</p>			


<b>AP</b>	 <b>STRATEGIC LINE:</b> PUBLIC LIGHTING	<b>SEAP SECTOR:</b> PUBLIC LIGHTING
<b>AP 2</b>	<b>MEASURE:</b> RENEWAL OF PUBLIC LIGHTING OUTDOOR FACILITIES	<b>PRIORITY:</b> <b>HIGH</b>
<b>OBJECTIVE:</b>	Energy efficiency, savings and reduction of the emissions generated by the public lighting.	
<b>DESCRIPTION OF THE MEASURE:</b>	<p>Actions related to renewal of outdoor public lighting installations. In general, these are renovation projects of obsolete technologies by others newer and more efficient, using criteria of energy saving and efficiency as set out in Royal Decree 1890/2008, of 14 November, which approves the Regulation energy efficiency in outdoor lighting and its complementary technical instructions EA-01 and EA-07 (BOE no. 279 of 19 November). It is intended that the facilities get an energy rating of A or B.</p> <p>Since 2007 until today the municipality has renovated the electrical panels of certain towns. While, in 2013, was denied a INEGA grant for a ILE project. Therefore, until 2020, the City must continue to develop reform projects of the lighting so that at least the 70% of the municipal public lighting has been replaced by efficient technologies (highlighting LED technology), energy rating A or B and this in consistency and compliance with the improvement plan developed under the energy audit (AP1 measure).</p>	
<b>RESPONSIBILITIES:</b>	<p><b>Agents Involved:</b></p> <ul style="list-style-type: none"> <li>A Bola City Council</li> <li>Provincial Council of Ourense</li> <li>Galicia Energy Institute</li> </ul> <p><b>In Charge:</b></p> <ul style="list-style-type: none"> <li>A Bola City Council</li> <li>Provincial Council of Ourense</li> </ul> <p><b>Need of contractual relationship:</b></p> <p>YES. Local administration - private company contract</p> <p><b>Contract Type:</b> Supply and installation</p> <p><b>Award procedure:</b> Depending on the case (open, negotiated with / without advertising)</p>	
<b>SCHEDULE:</b>	<p><b>Frequency:</b> -</p> <p><b>Start date:</b> 2010</p> <p><b>Finish date:</b> 2020</p>	
<b>COSTS:</b>	<p><b>Costs (€):</b> 200000 €</p> <p><b>Funding:</b> City Council INEGA National Energy Efficiency Fund. Municipal program of outdoor lighting aids.</p> <p><b>Rate of return :</b> 3,5 years</p>	
<b>BENEFITS:</b>	<p><b>Development the measures envisaged in the audit</b></p> <p><b>Annual emissions avoided (tCO<sub>2</sub>):</b> <b>48.92</b></p> <p>Hypothesis reduction: The reduction to be achieved, taking into account the implementation of latest technologies, such as LED, is around 65% of consumption of street lighting.</p> <p><b>Annual energy savings (MWh):</b> 157.80</p> <p><b>Annual renewable energy production (MWh):</b> -</p> <p><b>Accumulated avoided emissions to 2020 (tCO<sub>2</sub>):</b> 195.67</p> <p><b>Accumulated energy savings to 2020 (MWh):</b> 631.19</p> <p><b>Accumulated Production renewable energies to 2020(MWh):</b> -</p>	
<b>MONITORING INDICATORS:</b>	<p><b>Indicator:</b> Number and % of regulators and lamps changed for an energy rating A or B. Number and % of city centers with outdoor lighting installations renovated by an efficiency criteria. Number and % of streets with street lighting installations renovated by an efficiency criteria. Investment in renovation projects for public lighting.</p> <p><b>Units:</b> Nº €</p>	

## Transport. Municipal Fleet (TPTE<sub>M</sub>)








### SEAP Measures/ Actions:

		Reduction of CO <sub>2</sub> emissions	Energy consumption Reduction	Renewable energies implementation
<b>TPTE<sub>M</sub> 1</b>	USE OF BIOFUEL	X		X
<b>TPTE<sub>M</sub> 2</b>	MUNICIPAL FLEET RENEWAL	X	X	X
<b>CPSF - TPTE<sub>M</sub> 3</b>	CONTROL OF ROUTES AND FUEL CONSUMPTION. TRAINING IN EFFICIENT DRIVING (ECO-DRIVING)	X	X	

<b>TPTE<sub>M</sub></b>		<b>STRATEGIC LINE:</b> TRANSPORT. MUNICIPAL FLEET	<b>SEAP SECTOR:</b> TRANSPORT
<b>TPTE<sub>M</sub> 1</b>		<b>MEASURE:</b> USE OF BIOFUEL	<b>PRIORITY:</b> <b>MEDIUM</b>
<b>OBJECTIVE:</b>			
Promote the use of renewable energy as the source of municipal energy supply, reducing CO <sub>2</sub> emissions.			
<b>DESCRIPTION OF THE MEASURE:</b>			
Most of the municipal fleet, except for the civil protection quad motorcycle, use diesel as an energy source. For this fleet the adaptation needs to use biodiesel as an energy source will be evaluated, once evaluated the appropriate changes will be made -if needed- and the use biodiesel as an energy source will begin. They may reach agreements with distributors to ensure the supply of this type of biofuel.			
<b>RESPONSIBILITIES:</b>			
<p><b>Agents Involved:</b></p> <ul style="list-style-type: none"> <li>A Bola City Council</li> <li>Provincial Council of Ourense</li> </ul> <p><b>In Charge:</b></p> <ul style="list-style-type: none"> <li>A Bola City Council</li> <li>Provincial Council of Ourense</li> </ul> <p><b>Need of contractual relationship:</b> YES. Local administration - private company contract</p> <p><b>Contract Type:</b> Supply      <b>Award procedure:</b> To determinate</p>			
<b>SCHEDULE:</b>			
<p><b>Frequency:</b> -      <b>Start date:</b> 2016      <b>Finish date:</b> 2020</p>			
<b>COSTS:</b>			
<p><b>Costs (€):</b> No extra cost compared to the current fuel purchase      <b>Funding:</b> City Council      <b>Rate of return :</b> -</p>			
<b>BENEFITS:</b>			
<p><b>Annual emissions avoided (tCO<sub>2</sub>):</b> <b>5.25</b>      <i>Reduction hypothesis: It is estimated that the consumption of biofuels could be the 20% of the total fuel consumed by the municipal fleet.</i></p> <p><b>Annual energy savings (MWh):</b> -      <b>Accumulated avoided emissions to 2020 (tCO<sub>2</sub>):</b> 21.01</p> <p><b>Annual renewable energy production (MWh):</b> -      <b>Accumulated energy savings to 2020 (MWh):</b> -</p> <p><b>Accumulated Production renewable energies to 2020(MWh):</b> -</p>			
<b>MONITORING INDICATORS:</b>			
<p><b>Indicator:</b> Liters of biofuel consumed annually by the municipal fleet.      <b>Units:</b> Liters</p>			




<b>TPTE<sub>M</sub></b>		<b>STRATEGIC LINE:</b> TRANSPORT. MUNICIPAL FLEET	<b>SEAP SECTOR:</b> TRANSPORT
<b>TPTE<sub>M</sub> 2</b>		<b>MEASURE:</b> MUNICIPAL FLEET RENEWAL	<b>PRIORITY:</b> <b>HIGH</b>
<b>OBJECTIVE:</b> Minimize consumption and CO <sub>2</sub> emissions.			
<b>DESCRIPTION OF THE MEASURE:</b> Currently the municipal fleet has an average age of 14,9 years. It is required a progressive renewal of the fleet -specially the oldest vehicles- towards more efficient and sustainable (hybrid and even electric) vehicles, taking into account existing aids and grants in this area. Specific:  <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>PIVE Plan. Incentive Program Efficient Vehicle</p>  </div> <div style="text-align: center;"> <p>MOVELE program. Integral Strategy to Promote Electric Vehicles in Spain</p>  </div> <div style="text-align: center;"> <p>Plan to Promote Environment (PIMA Aire 4)</p>  </div> <div style="text-align: center;"> <p>INEGA aids</p> </div> <div style="text-align: center;"> <p>Others</p> </div> </div> <p>The selection of vehicles will take into account the data provided by the IDEA database (<a href="http://coches.idae.es/">http://coches.idae.es/</a>) in relation to fuel consumption and features of new cars for sale in Spain.</p>			
<b>RESPONSIBILITIES:</b>			
<b>Agents Involved:</b>		<b>In Charge:</b>	
<ul style="list-style-type: none"> <li>A Bola City Council</li> <li>Provincial Council of Ourense</li> </ul>		<ul style="list-style-type: none"> <li>A Bola City Council</li> <li>Provincial Council of Ourense</li> </ul>	
<b>Need of contractual relationship:</b> To determinate			
<b>Contract Type:</b> Supply		<b>Award procedure:</b> To determinate	
<b>SCHEDULE:</b>			
<b>Frequency:</b> -		<b>Start date:</b> 2016	<b>Finish date:</b> 2020
<b>COSTS:</b>			
<b>Costs (€):</b> 70000 €		<b>Funding:</b> A Bola City Council Provincial Council of Ourense Subsidies	<b>Rate of return :</b> -
<b>BENEFITS:</b>			
<b>Annual emissions avoided (tCO<sub>2</sub>):</b>		<b>11.00</b>	
Reduction hypothesis: Depending on the model and the number of vehicles that are renewed. A complete renovation which would reduce emissions by up to 40% according to data provided by the IDEA database is assumed ( <a href="http://coches.idae.es/">http://coches.idae.es/</a> )			
<b>Annual energy savings (MWh):</b> 43.12		<b>Accumulated avoided emissions to 2020 (tCO<sub>2</sub>):</b> 43.99	
<b>Annual renewable energy production (MWh):</b> -		<b>Accumulated energy savings to 2020 (MWh):</b> 172.48	
		<b>Accumulated Production renewable energies to 2020(MWh):</b> -	
<b>MONITORING INDICATORS:</b>			
<b>Indicator:</b>	Nº of efficient and sustainable vehicles purchased and% over the total of the municipal fleet.		<b>Units:</b> Nº and %



<b>CPSF TPTE<sub>M</sub></b> 	<b>STRATEGIC LINE:</b> TRANSPORT. MUNICIPAL FLEET		<b>SEAP SECTOR:</b> TRANSPORT
	<b>MEASURE:</b> CONTROL OF ROUTES AND FUEL CONSUMPTION. TRAINING IN EFFICIENT DRIVING (ECO-DRIVING)		<b>PRIORITY:</b> <b>MEDIUM</b>
<b>CPSF -TPTE<sub>M</sub> 3</b>			
<b>OBJECTIVE</b> Minimize consumption and emissions of CO <sub>2</sub> generated by the municipal fleet.			
<b>DESCRIPTION OF THE MEASURE:</b> <p>A planning and a control of journeys made and the fuel consumption of the municipal fleet will take place in order to optimize their use and avoid unnecessary journeys or excessive consumption. For the correct application and knowledge of this monitoring program, for those public employees who use vehicles in the municipal fleet, a labor of training in efficient driving and operation of the control program to implement (need GPS recording porting routes, need to record consumption, etc.) will be carry out.</p> <p>The INEGA has an efficient driving manual (<a href="http://www.inega.es/sites/default/descargas/37-d-Manualcursoconduccioneficientegalego.pdf">http://www.inega.es/sites/default/descargas/37-d-Manualcursoconduccioneficientegalego.pdf</a>)</p> <p>The IDEA in its web page (<a href="http://coches.idae.es/">http://coches.idae.es/</a>) provides a set of guidelines to develop an efficient driving style.</p> <p>This, considering that with an efficient driving it is possible to save up to 15% in fuel consumption -with the consequent reduction in emissions-.</p> <p>This measure is considered a development performance of the communication and participation plan of the SEAP until 2020 (CPSF 1).</p>			
<b>RESPONSIBILITIES:</b> <div style="display: flex; justify-content: space-between;"> <div> <b>Agents Involved:</b> <ul style="list-style-type: none"> <li>A Bola City Council</li> <li>Provincial Council of Ourense</li> </ul> </div> <div> <b>In Charge:</b> <ul style="list-style-type: none"> <li>A Bola City Council</li> <li>Provincial Council of Ourense</li> </ul> </div> </div> <p style="text-align: center;"><b>Need of contractual relationship:</b> To determinate</p> <div style="display: flex; justify-content: space-between;"> <div> <b>Contract Type:</b> Supply         </div> <div> <b>Award procedure:</b> To determinate         </div> </div>			
<b>SCHEDULE:</b> <div style="display: flex; justify-content: space-between;"> <div> <b>Frequency:</b> -         </div> <div> <b>Start date:</b> 2016         </div> <div> <b>Finish date:</b> 2020         </div> </div>			
<b>COSTS:</b> <div style="display: flex; justify-content: space-between;"> <div> <b>Costs (€):</b> -         </div> <div> <b>Funding:</b> City Council         </div> <div> <b>Rate of return :</b> -         </div> </div>			
<b>BENEFITS:</b> <div style="display: flex; justify-content: space-between;"> <div> <b>Annual emissions avoided (tCO<sub>2</sub>):</b> <b>4.12</b> </div> <div>           Reduction hypothesis: According to the IDAE efficient driving can save up to 15% fuel. (<a href="http://coches.idae.es/portal/EstiloConduccion.aspx">http://coches.idae.es/portal/EstiloConduccion.aspx</a>)         </div> </div> <div style="display: flex; justify-content: space-between;"> <div> <b>Annual energy savings (MWh):</b> 16.17         </div> <div> <b>Accumulated avoided emissions to 2020 (tCO<sub>2</sub>):</b> 16.50         </div> </div> <div style="display: flex; justify-content: space-between;"> <div> <b>Annual renewable energy production (MWh):</b> -         </div> <div> <b>Accumulated energy savings to 2020 (MWh):</b> 64.68         </div> </div> <div style="display: flex; justify-content: space-between;"> <div> <b>Accumulated Production renewable energies to 2020 (MWh):</b> -         </div> </div>			
<b>MONITORING INDICATORS:</b> <div style="display: flex; justify-content: space-between;"> <div> <b>Indicator:</b> <ul style="list-style-type: none"> <li>Nº of information / training events developed</li> <li>Nº informative posters placed</li> <li>Nº information guides distributed</li> </ul> </div> <div> <b>Units:</b> Nº and %         </div> </div>			

Transport. Public, Private and Commercial (TPTE<sub>PPC</sub>)


## SEAP Measures/ Actions:

		Reduction of CO <sub>2</sub> emissions	Energy consumption Reduction	Renewable energies implementation
<b>TPTE<sub>PPC</sub> 1</b>	ENCOURAGE AND PROMOTION WALKING AND CYCLING MOBILITY	X	X	
<b>TPTE<sub>PPC</sub> 2</b>	PUBLIC TRANSPORT SYSTEM ON DEMAND	X	X	
<b>TPTE<sub>PPC</sub> 3</b>	INCENTIVES AND DISSEMINATION. RENEWAL OF VEHICLES	X	X	
<b>TPTE<sub>PPC</sub> 4</b>	CAR SHARING PLATAFORM "CARPOOLING"	X	X	
<b>CPSF TPTE<sub>PPC</sub> 5</b>	AWARENESS AND CAMPAIGNS FOR SUSTAINABLE LOCAL MOBILITY	X	X	

<b>TPTE<sub>PPC</sub></b>		<b>STRATEGIC LINE:</b> TRANSPORT. PUBLIC-PRIVATE-COMMERCIAL	<b>SEAP SECTOR:</b> TRANSPORT
<b>TPTE<sub>PPC</sub> 1</b>		<b>MEASURE:</b> ENCOURAGE AND PROMOTION WALKING AND CYCLING MOBILITY	<b>PRIORITY:</b> <b>MEDIUM</b>
<b>OBJECTIVE:</b>			
Promote the use of bicycles and pedestrian mobility because they are non-motorized transport, quiet, clean, affordable and sustainable alternative to the use of private vehicles, helping to reduce emissions and energy consumption. Contribution to sustainable mobility.			
<b>DESCRIPTION OF THE MEASURE:</b>			
<p>The incentives and the promotion of walking and cycling mobility involves developing measures to:</p> <ul style="list-style-type: none"> <li>■ <i>Pedestrianize and improving connectivity (especially those connected public services -education, health, administrative, sports, etc-.):</i> Calm traffic on certain streets or close vehicle traffic, construction / expansion or improvement of sidewalks on those streets that need it, removing barriers and increased permeability and safety for pedestrian, creation pedestrian school routes, others.</li> <li>■ <i>Encourage cycling mobility:</i> enable and enhance kilometers of bike lanes, improving connectivity between attractive areas of displacement, bicycle parking, promote a public bicycle loan system, etc.</li> <li>■ <i>Dissemination of the advantages of its use:</i> Awareness campaigns, establishing car free day or cycling day, etc.</li> </ul>			
<b>RESPONSIBILITIES:</b>			
<p><b>Agents Involved:</b></p> <ul style="list-style-type: none"> <li>■ A Bola City Council</li> <li>■ Provincial Council of Ourense</li> <li>■ Galician Energy Institute</li> </ul> <p><b>In Charge:</b></p> <ul style="list-style-type: none"> <li>■ A Bola City Council</li> <li>■ Provincial Council of Ourense</li> </ul> <p><b>Need of contractual relationship:</b> YES. Local administration - private company contract</p> <p><b>Contract Type:</b> Supply and installation      <b>Award procedure:</b> To determinate</p>			
<b>SCHEDULE:</b>			
<p><b>Frequency:</b> -      <b>Start date:</b> 2016      <b>finish date:</b> 2020</p>			
<b>COSTS:</b>			
<p><b>Costs (€):</b> Not estimated      <b>Funding:</b> City Council Provincial Council of Ourense INEGA FEDER/FEADER      <b>Rate of return :</b> Not estimated</p>			
<b>BENEFITS:</b>			
<p><b>Annual emissions avoided (tCO<sub>2</sub>):</b> <b>75.08</b></p> <p><b>Annual energy savings (MWh):</b> 297.87      <b>Accumulated avoided emissions to 2020 (tCO<sub>2</sub>):</b> 300.33</p> <p><b>Annual renewable energy production (MWh):</b> -      <b>Accumulated energy savings to 2020 (MWh):</b> 1191.47</p> <p><b>Accumulated Production renewable energies to 2020(MWh):</b> -</p> <p><small>Reduction hypothesis: According to the publication <i>Implantación de los Planes de Movilidad Urbana Sostenible</i> of Red de Ciudades por el Clima (<a href="http://www.redciudadesclima.es/uploads/documentacion/413e715475a3d74031cc3ae18a96b55f.pdf">http://www.redciudadesclima.es/uploads/documentacion/413e715475a3d74031cc3ae18a96b55f.pdf</a>) such measures can contribute to reducing emissions up to 10%. Considering the characteristics of the municipality a reduction of 5% compared to emissions from private and commercial transport is assumed.</small></p>			
<b>MONITORING INDICATORS:</b>			
<p><b>Indicator:</b> Number of daily loans per 1000 inhabitants.      <b>Units:</b> Nº</p> <p>Number of bicycles available to the service      km</p> <p>Number of pedestrianized streets or traffic calming</p> <p>Improved sidewalks km</p> <p>Km of bicycle paths built</p>			

<b>TPT<sub>PPC</sub></b>  <b>TPT<sub>PPC2</sub></b>		<b>STRATEGIC LINE:</b> TRANSPORT. PUBLIC-PRIVATE-COMMERCIAL	<b>SEAP SECTOR:</b> TRANSPORT
		<b>MEASURE:</b> PUBLIC TRANSPORT SYSTEM ON DEMAND	<b>PRIORITY:</b> <b>HIGH</b>
<b>OBJECTIVE:</b> Improve the public transport system to minimize travel by private car in an area where the population is widely dispersed throughout the territory, thereby reducing emissions and fuel consumption.			
<b>DESCRIPTION OF THE MEASURE:</b> <p>Promotion of a public transport system in which the service is planned from the direct demand of citizens to the administration by telephone and telematic methods. The Council of Ourense, in collaboration with the city, would be responsible for creating and managing the central planning of this service. Shuttle service only on public demand is established and according to it the journey is planned, and the city informs about schedules and itineraries for the day of service.</p> <div style="text-align: center;">   <b>TRANSPORTE a la DEMANDA</b>  <i>¡Cuando lo Necesites!</i> </div>			
<b>RESPONSIBILITIES:</b> <div style="display: flex; justify-content: space-between;"> <div> <b>Agents Involved:</b> <ul style="list-style-type: none"> <li>A Bola City Council</li> <li>Provincial Council of Ourense</li> </ul> </div> <div> <b>In Charge:</b> <ul style="list-style-type: none"> <li>Provincial Council of Ourense</li> </ul> </div> </div> <p style="text-align: center;"><b>Need of contractual relationship:</b></p> <hr/> <div style="display: flex; justify-content: space-between;"> <div> <b>Contract Type:</b> -         </div> <div> <b>Award procedure:</b> -         </div> </div>			
<b>SCHEDULE:</b> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div> <b>Frequency:</b> -         </div> <div> <b>Start date:</b> 2016         </div> <div> <b>Finish date:</b> 2020         </div> </div>			
<b>COSTS:</b> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div> <b>Costs (€):</b> Not estimated         </div> <div> <b>Funding:</b> Provincial Council of Ourense FEDER         </div> <div> <b>Rate of return</b> : Not estimated         </div> </div>			
<b>BENEFITS:</b> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div> <b>Annual emissions avoided (tCO<sub>2</sub>):</b> <b>120.13</b> </div> <div> <i>Reduction hypothesis:</i> It is estimated that such measures can have a high impact on a municipality that has a widely scattered population. Depending on the number of villages and the people living in them it is estimated that this service could reduce emissions from private transport locally up to 8%.         </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div> <b>Annual energy savings (MWh):</b> 476.59         </div> <div> <b>Accumulated avoided emissions to 2020 (tCO<sub>2</sub>):</b> 480.52         </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div> <b>Annual renewable energy production (MWh):</b> -         </div> <div> <b>Accumulated energy savings to 2020 (MWh):</b> 1906.35         </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div> <b>Annual renewable energy production (MWh):</b> -         </div> <div> <b>Accumulated Production renewable energies to 2020 (MWh):</b> -         </div> </div>			
<b>MONITORING INDICATORS:</b> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div> <b>Indicator:</b> <ul style="list-style-type: none"> <li>Existence of demand shuttle</li> <li>Number. of calls / contacts requesting annual route</li> <li>Nº route "on demand" planned in A Bola</li> </ul> </div> <div> <b>Units:</b> Presence / Absence Nº         </div> </div>			

<b>TPTE<sub>PPC</sub></b>  <b>TPTE<sub>PPC</sub> 3</b>		<b>STRATEGIC LINE:</b> TRANSPORT. COMMERCIAL	PUBLIC-PRIVATE-	<b>SEAP SECTOR:</b> TRANSPORT
	<b>MEASURE:</b> INCENTIVES AND DISSEMINATION. RENEWAL OF VEHICLES	<b>PRIORITY:</b> <b>HIGH</b>		
<b>OBJECTIVE:</b> Minimize fuel consumption and CO <sub>2</sub> emissions from private and commercial transport.				
<b>DESCRIPTION OF THE MEASURE:</b> <p>Existing aids and subsidies will be disseminate among citizens and companies for the renewal of vehicles to a more efficient and sustainable fleet, among others:</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>PIVE Plan. Incentive Program Efficient Vehicle</p>  </div> <div style="text-align: center;"> <p>MOVELE program. Integral Strategy to Promote Electric Vehicles in Spain</p>  </div> <div style="text-align: center;"> <p>Plan to Promote Environment (PIMA Aire 4)</p>  </div> <div style="text-align: center;"> <p>INEGA aids</p> </div> <div style="text-align: center;"> <p>Others</p> </div> </div> <p>The IDEA database will be disseminate (<a href="http://coches.idae.es/">http://coches.idae.es/</a>) in relation to fuel consumption and features of new cars for sale in Spain.</p> <p>In addition <i>bonuses</i> may be included <i>in the tax motor vehicles</i> for vehicles demonstrating a high efficiency energy labeling as established in Royal Decree 837/2002 of 2 August, which regulates the information on consumption fuel and CO<sub>2</sub> emissions of new passenger cars offered for sale or offered for lease in Spanish territory. This measure will also be disseminate for the knowledge of the citizenship.</p> <p>You can also <i>reserve spaces in public car parks</i> for high-efficiency or electric vehicles (rated A by Royal Decree 837/2002 of 2 August, transposing Directive 1999/94 / EC on energy labeling of new passenger cars to domestic law).</p>				
<b>RESPONSIBILITIES:</b> <div style="display: flex; justify-content: space-between;"> <div> <p><b>Agents Involved:</b></p> <ul style="list-style-type: none"> <li>A Bola City Council</li> <li>Provincial Council of Ourense</li> </ul> </div> <div> <p><b>In Charge:</b></p> <ul style="list-style-type: none"> <li>A Bola City Council</li> <li>Provincial Council of Ourense</li> </ul> </div> </div> <p style="text-align: center;"><b>Need of contractual relationship:</b></p> <p style="text-align: center;">NO</p> <div style="display: flex; justify-content: space-between;"> <p><b>Contract Type:</b> -</p> <p><b>Award procedure:</b> -</p> </div>				
<b>SCHEDULE:</b> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <p><b>Frequency:</b> -</p> <p><b>Start date:</b> 2016</p> <p><b>finish date:</b> 2020</p> </div>				
<b>COSTS:</b> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div> <p><b>Costs (€):</b> -(The cost of the investment in vehicles lies in the private sector)</p> </div> <div> <p><b>Funding:</b> Indicate subsidies</p> </div> <div> <p><b>Rate of return :</b> -</p> </div> </div>				
<b>BENEFITS:</b> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div> <p><b>Annual emissions avoided (tCO<sub>2</sub>):</b> <b>18.02</b></p> <p><b>Annual energy savings (MWh):</b> 71.49</p> <p><b>Annual renewable energy production (MWh):</b> -</p> </div> <div> <p>Reduction hypothesis: The average age of vehicles in A Bola exceeds 10 years with what is expected to be renewed annually at least 3% of local car park to more efficient models. The new vehicles will reduce an average of 40% their consumption and emissions.</p> <p><b>Accumulated avoided emissions to 2020 (tCO<sub>2</sub>):</b> 72.08</p> <p><b>Accumulated energy savings to 2020 (MWh):</b> 285.95</p> <p><b>Accumulated Production renewable energies to 2020(MWh):</b> -</p> </div> </div>				
<b>MONITORING INDICATORS:</b> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div> <p><b>Indicator:</b> Number of dissemination performances for the renovation of private and commercial fleet. Number of vehicles that certify a high-efficiency energy labeling and% of the total. Number of places reserved for electric or high efficiency vehicles.</p> </div> <div> <p><b>Units:</b> N° and %</p> </div> </div>				

<b>TPTE<sub>PPC</sub></b>		<b>STRATEGIC LINE:</b> TRANSPORT. PUBLIC-PRIVATE-COMMERCIAL	<b>SEAP SECTOR:</b> TRANSPORT
<b>TPTE<sub>PPC</sub> 4</b>		<b>MEASURE:</b> CAR SHARING PLATAFORM "CARPOOLING"	<b>PRIORITY:</b> <b>MEDIUM</b>
<b>OBJECTIVE:</b>			
Increase efficiency in local mobility, minimizing consumption and emissions of CO2 derived from private and commercial transport.			
<b>DESCRIPTION OF THE MEASURE:</b>			
A 'car share' service will be established and promoted among the residents of the area, the possibility of joining the Network of Cities and entities that promote carpooling is suggested ( <a href="http://www.compartir.org">www.compartir.org</a> ). Considering the high degree of aging of the local population this measure may be unsuccessful.			
<b>RESPONSIBILITIES:</b>			
<b>Agents Involved:</b> <ul style="list-style-type: none"> <li>A Bola City Council</li> <li>Provincial Council of Ourense</li> </ul> <b>In Charge:</b> <ul style="list-style-type: none"> <li>A Bola City Council</li> <li>Provincial Council of Ourense</li> </ul>			
<b>Need of contractual relationship:</b>			
NO			
<b>Contract Type:</b> - <b>Award procedure:</b> -			
<b>SCHEDULE:</b>			
<b>Frequency:</b> - <b>Start date:</b> 2016 <b>Finish date:</b> 2020			
<b>COSTS:</b>			
<b>Costs (€):</b> 500 € <b>Funding:</b> City Council Provincial Council of Ourense <b>Rate of return :</b> -			
<b>BENEFITS:</b>			
<b>Annual emissions avoided (tCO<sub>2</sub>):</b> <b>22.52</b>			
<b>Annual energy savings (MWh):</b> 89.36			
<b>Annual renewable energy production (MWh):</b> -			
<b>Accumulated avoided emissions to 2020 (tCO<sub>2</sub>):</b> 90.10 <b>Accumulated energy savings to 2020 (MWh):</b> 357.44 <b>Accumulated Production renewable energies to 2020(MWh):</b> -			
<b>MONITORING INDICATORS:</b>			
<b>Indicator:</b> Existence of a platform that promotes car sharing service. <b>Units:</b> Presence / Absence Number of system users. <b>Units:</b> Nº			

<b>CPSF</b> <b>TPTE<sub>PPC</sub></b>		<b>STRATEGIC LINE:</b> TRANSPORT. PUBLIC-PRIVATE-COMMERCIAL	<b>SEAP SECTOR:</b> TRANSPORT
		<b>MEASURE:</b> AWARENESS AND CAMPAIGNS FOR SUSTAINABLE LOCAL MOBILITY	<b>PRIORITY:</b> <b>HIGH</b>
<b>CPSF –TPTE<sub>PPC</sub> 5</b>			
<b>OBJECTIVE:</b> Achieve an adequate level of awareness among citizens and the service sector to promote sustainable mobility at local level.			
<b>DESCRIPTION OF THE MEASURE:</b> It will be carried out awareness campaigns for local sustainable local mobility, such as: <div style="display: flex; justify-content: space-between; align-items: center;"> <div> <u>Participation in the European Mobility Week</u>            Allusive development activities in schools or public areas (day bike, other).         </div> <div>   <a href="http://www.mobilityweek.eu/">http://www.mobilityweek.eu/</a> </div> </div> <p>The city council will continue to advance in this direction, involving citizenship and the service sector in the campaigns that will develop numerous performances, from eco-efficient driving courses, carpooling service information, developing mobility plans for businesses, others.</p> <p>This measure is considered a development performance of the communication and participation plan of the SEAP until 2020 (CPSF 1).</p>			
<b>RESPONSIBILITIES:</b>			
<div style="display: flex; justify-content: space-between;"> <div> <u>Agents Involved:</u> <ul style="list-style-type: none"> <li>A Bola City Council</li> <li>Provincial Council of Ourense</li> </ul> </div> <div> <u>In Charge:</u> <ul style="list-style-type: none"> <li>A Bola City Council</li> <li>Provincial Council of Ourense</li> </ul> </div> </div>			
<u>Need of contractual relationship:</u> NO			
<u>Contract Type:</u> - <u>Award procedure:</u> -			
<b>SCHEDULE:</b>			
<u>Frequency:</u> - <u>Start date:</u> 2016 <u>finish date:</u> 2020			
<b>COSTS:</b>			
<u>Costs (€):</u> 7000 € <u>Funding:</u> City Council Provincial Council of Ourense <u>Rate of return :</u> -			
<b>BENEFITS:</b>			
<div style="display: flex; justify-content: space-between;"> <div> <u>Annual emissions avoided (tCO<sub>2</sub>):</u> </div> <div style="background-color: #d9e1f2; padding: 10px; border: 1px solid #000;"> <b>4.50</b> </div> <div> <u>Reduction hypothesis:</u> According to the publication Implementation of Sustainable Urban Mobility Plans of the Network of Cities for Climate (<a href="http://www.redciudadesclima.es/uploads/documentacion/413e715475a3d74031cc3ae18a96b55f.pdf">http://www.redciudadesclima.es/uploads/documentacion/413e715475a3d74031cc3ae18a96b55f.pdf</a>) awareness campaigns can contribute reducing emissions by 0.3%.         </div> </div>			
<div style="display: flex; justify-content: space-between;"> <div> <u>Annual energy savings (MWh):</u> 17.87         </div> <div> <u>Accumulated avoided emissions to 2020 (tCO<sub>2</sub>):</u> 18.02         </div> </div>			
<div style="display: flex; justify-content: space-between;"> <div> <u>Annual renewable energy production (MWh):</u> -         </div> <div> <u>Accumulated energy savings to 2020 (MWh):</u> 71.49         </div> </div>			
<div style="display: flex; justify-content: space-between;"> <div> <u>Annual renewable energy production (MWh):</u> -         </div> <div> <u>Accumulated Production renewable energies to 2020(MWh):</u> -         </div> </div>			
<b>MONITORING INDICATORS:</b>			
<u>Indicator:</u> Number of events, conferences, etc. made in relation to sustainable mobility. <u>Units:</u> Nº			



## Municipal Solid Waste (RSU)



### SEAP Measures/ Actions:

#### CPSF RSU 1


INCENTIVES AND AWARENESS TO REDUCE THE WASTE PRODUCTION IN THE ORIGIN. PROMOTE RECYCLING AND THE EFFECTIVE SEPARATION OF THE WASTE.

Reduction  
of CO<sub>2</sub>  
emissions

Energy  
consumption  
Reduction

Renewable  
energies  
implementation










<b>CPSF RSU</b>		<b>STRATEGIC LINE:</b> MUNICIPAL SOLID WASTE	<b>SEAP SECTOR:</b> WASTE
<b>CPSF-RSU 1</b>	<b>MEDIDA:</b> INCENTIVES AND AWARENESS TO REDUCE THE WASTE PRODUCTION IN THE ORIGIN. PROMOTE RECYCLING AND THE EFFECTIVE SEPARATION OF THE WASTE.	<b>PRIORITY:</b> <b>HIGH</b>	
<b>OBJECTIVE:</b> Minimize the production of waste at source, promote composting and recycling and ensure a proper separation of waste to optimize subsequent valuation.			
<b>DESCRIPTION OF THE MEASURE:</b> The City Council of A Bola has a framework cooperation agreement with the Provincial Council of Ourense for the municipal solid waste collection. Since 2007 and to date the Council has developed various campaigns and activities to promote awareness on minimizing waste production and promote its recovery in origin. Until 2020, it will continue to develop measures to encourage the separate collection and minimize their production at source, mainly in raising awareness and improving waste management in collaboration with the measures taken by the Galician Environmental society (SOGAMA) (Ex: Educational program "Recycle with Sogama" campaign "Separemos ben, reciclaremos mellor" educational campaign "Aproveitate do que che sobra"; etc.). This measure is considered a development performance of the communication and participation plan of the SEAP until 2020 (CPSF 1).			
<b>RESPONSIBILITIES:</b>			
<b>Agents Involved:</b>		<b>In Charge:</b>	
<ul style="list-style-type: none"> <li>A Bola City Council</li> <li>Provincial Council of Ourense</li> <li>Galician Environmental society (SOGAMA)</li> </ul>		<ul style="list-style-type: none"> <li>A Bola City Council</li> <li>Provincial Council of Ourense</li> </ul>	
<b>Need of contractual relationship:</b> NO			
<b>Contract Type:</b> -		<b>Award procedure:</b> -	
<b>SCHEDULE:</b>			
<b>Frequency:</b> -		<b>Start date:</b> 2016	<b>finish date:</b> 2020
<b>COSTS:</b>			
<b>Costs (€):</b> Without quantifying		<b>Funding:</b> City Council Provincial Council of Ourense SOGAMA FEDER	<b>Rate of return :</b> -
<b>BENEFITS:</b>			
<b>Annual emissions avoided (tCO<sub>2</sub>):</b>		<b>8.54</b>	<i>Reduction hypothesis: It is estimated that these initiatives can help reduce emissions from production and waste treatment in at least 5%.</i>
<b>Annual energy savings (MWh):</b> -		<b>Accumulated avoided emissions to 2020 (tCO<sub>2</sub>):</b> 34.18	
<b>Annual renewable energy production (MWh):</b> -		<b>Accumulated energy savings to 2020 (MWh):</b> -	
		<b>Accumulated Production renewable energies to 2020 (MWh):</b> -	
<b>MONITORING INDICATORS:</b>			
<b>Indicator:</b>	Number of events, conferences, etc. made in relation to waste, its minimization and its valuation at source.		<b>Units:</b> Nº



## 5.4. SEAP synthesis

The SEAP of A Bola has a total of 20 measures, many of them have a synergistic effect on each other or are complementary, contributing to the achievement of the objectives under collects the following table:

SUMMARY TABLE. CONTRIBUTION TO COMPLIANCE OF OBJECTIVES.							
Action lines.		Nº ACTIONS / MEASURES	EMISSION REDUCTION OF CO <sub>2</sub>		ENERGY SAVING		LOCAL PRODUCTION OF RENEWABLE ENERGY
			[Tons] annual	% Total reduction compared to reference year emissions	[MWh] annual	% Total consumption reduction compared to reference year	[MWh] annual
TRANSVERSAL	STRUCTURE AND ORGANIZATION	1					
	COMMUNICATION, PARTICIPATION, AWARENESS AND EDUCATION	1					
	PUBLIC PROCUREMENTS OF PRODUCTS AND SERVICES	1	50.74	1.69	171.20	1.63	Unquantified
SEAP SECTORS AND FIELDS OF ACTION	MUNICIPAL BUILDINGS INSTALATIONS AND FACILITIES	2	45.09	1.50	150.41	1.43	Unquantified
	TERTIARY AND RESIDENTIAL BUILDINGS INSTALATION AND FACILITIES	4	321.06	10.70	>538.71	5.12	>635.83
	PUBLIC LIGHTING	2	48.92	1.63	157.8	1.50	
	TRANSPORT. MUNICIPAL FLEET	3	20.37	0.68	59.29	0.56	
	TRANSPORT. PUBLIC, PRIVATE AND COMMERCIAL	5	240.25	8.01	953.18	9.06	
	MUNICIPAL SOLID WASTE	1	8.54	0.28			
TOTAL		20	734.97	24.49	>2030.59	>19.29	>635.83

Then another synthetic table storing each of the actions / measures included in the SEAP of A Bola, indicating the strategic line to which it belongs, its priority, the objectives that contributes to achieve, their cost and the timetable for implementation until 2020 is attached.

SYNTHETIC TABLE SEAP MEASURES / ACTIONS																						
Strategic Line	SEAP Measures			Priority	Objectives			Cost (€)	Calendar (2007-2020)													
					Reduction of CO <sub>2</sub> emissions (t/year)	Energy consumption Reduction (MWh/year)	Renewable energy production (MWh/year)		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
 STRUCTURE AND ORGANIZATION	EO	1	DEFINITION OF AN ADEQUATE ORGANIZATIONAL STRUCTURE AND COMPETENCE	HIGH	Not quantified	Not quantified	Not quantified	No costs														
 COMMUNICATION, PARTICIPATION, AWARENESS AND EDUCATION	CPSF	1	SEAP COMMUNICATION AND PARTICIPATION PLAN UNTIL 2020	HIGH	Not quantified	Not quantified	Not quantified	4000 €														
 PUBLIC PROCUREMENTS OF PRODUCTS AND SERVICES	CP	1	PROCUREMENT OF GOODS AND SERVICES APPLYING CRITERIA OF LOW CARBON FOOTPRINT, PROMOTING ENERGY EFFICIENCY AND RENEWABLE ENERGY.	HIGH	50.74	171.20	Not quantified	No costs														
 BUILDINGS, EQUIPMENT/ FACILITIES MUNICIPAL	EEI <sub>M</sub>	1	ENERGY CERTIFICATION OF BUILDINGS / MUNICIPAL FACILITIES AND ACTIONS TO IMPROVE THE QUALIFICATION	HIGH	40.08	133.70	Not quantified	50000.00 €														
	CPSF EEI <sub>M</sub>	2	EDUCATION OF LOCAL EMPLOYEES ON GOOD ENERGY PRACTICES IN BUILDINGS AND FACILITIES	HIGH	5.01	16.71		300.00 €														
	SUBTOTAL EEI <sub>M</sub> MEASURES					45.09	150.41	Not quantified	50300.00 €													
 BUILDINGS, EQUIPMENT/ FACILITIES RESIDENTIAL- TERTIARY	EEI <sub>RT</sub>	1	IMPROVE TERTIARY AND RESIDENTIAL BUILDINGS ENERGY QUALIFICATION	HIGH	54.91	192.40	Not quantified	750.00 €														
		2	PROMOTION AND INCENTIVE OF RENEWABLE ENERGY (PHOTOVOLTAIC, SOLAR THERMAL, BIOMASS, OTHERS) AND NATURAL GAS	HIGH	150.84		578.11	750.00 €														
		3	EFFECTIVE CONTROL AND APPLICATION OF THE BASIC ENERGY SAVING REQUIREMENTS OF THE TECHNICAL BUILDING CODE IN NEW CONSTRUCTION BUILDINGS AND OPERATIONS ON EXISTING BUILDINGS. DEVELOPMENT OF THE ORDINANCE.	HIGH	16.47	Not quantified	57.72	No costs														
	CPSF EEI <sub>RT</sub>	4	CAMPAIGN FOR ENERGY SAVING IN THE HOMES AND SERVICES	HIGH	98.84	346.31		1500.00 €														
SUBTOTAL EEI <sub>RT</sub> MEASURES					321.06	>538.71	>635.83	3000.00 €														
 PUBLIC LIGHTING	AP	1	AUDIT OF PUBLIC LIGHTING	HIGH				5000,00 €														
	AP	2	RENEWAL OF PUBLIC LIGHTING OUTDOOR FACILITIES	HIGH	48.92	157.80		200000.00 €														
	SUBTOTAL AP MEASURES					48.92	157.80		205000.00 €													
 TRANSPORT MUNICIPAL FLEET	TPTE <sub>M</sub>	1	USE OF BIOFUEL	MEDIUM	5.25			No costs														
		2	MUNICIPAL FLEET RENEWAL	HIGH	11.00	43.12		70000.00 €														
	CPSF TPTE <sub>M</sub>	3	CONTROL OF ROUTES AND FUEL CONSUMPTION. TRAINING IN EFFICIENT DRIVING (ECO-DRIVING)	HIGH	4.12	16.17		No costs														
SUBTOTAL TPTE <sub>M</sub> MEASURES					20.37	59.29		70000.00 €														

SYNTHETIC TABLE SEAP MEASURES / ACTIONS																						
Strategic Line	SEAP Measures		Priority	Objectives			Cost (€)	Calendar (2007-2020)														
				Reduction of CO <sub>2</sub> emissions (t/year)	Energy consumption Reduction (MWh/year)	Renewable energy production (MWh/year)		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
<div>TRANSPORT PUBLIC-PRIVATE-COMMERCIAL</div> <div></div>	TPTE <sub>PC</sub>	1	ENCOURAGE AND PROMOTION WALKING AND CYCLING MOBILITY	HIGH	75.08	297,87	Not quantified															
		2	PUBLIC TRANSPORT SYSTEM ON DEMAND	HIGH	120.13	476.59	Not quantified															
		3	INCENTIVES AND DISSEMINATION. RENEWAL OF VEHICLES	HIGH	18.02	71.49	No costs															
		4	CAR SHARING PLATFORM "CARPOOLING"	MEDIUM	22.52	89.36	500 €															
	CPSF TPTE <sub>PC</sub>	5	AWARENESS AND CAMPAIGNS FOR SUSTAINABLE LOCAL MOBILITY	HIGH	4.50	17.87	7000.00 €															
SUBTOTAL TPTE <sub>PC</sub> MEASURES					240.25	953.18	7500.00 €															
<div>WASTE</div> <div></div>	CPSF RSU	1	INCENTIVOS Y SENSIBILIZACIÓN PARA MINIMIZAR LA PRODUCCIÓN EN ORIGEN, FOMENTAR EL RECICLADO Y FAVORECER LA SEPARACIÓN EFECTIVA DE RESIDUOS.	HIGH	8.54		Not quantified															
		SUBTOTAL RSU MEASURES					8.54		Not quantified													
<div><div></div> Executed</div> <div><div></div> To be executed</div>																						

## 5.5. SEAP monitoring

The monitoring plan is to verify the proper implementation of the actions / measures of the SEAP and the compliance of the objectives in relation to GHG emissions, energy consumption and the introduction of renewable energy locally. The monitoring is designed taking into account:

- The biannual reports to be submitted after the presentation of the SEAP. Specifically, every two years must be provided at least one report of action including aspects related to the overall strategy adopted<sup>4</sup> and the status of implementation of SEAP-their actions and effects<sup>5</sup>. Moreover, every four years must be provide a full report, including quantitative data that come from the Monitoring Emission Inventory (MEI) and the quantified results of the executed actions.
- Monitoring and verification required in Energy Systems Management (EnMS) in accordance with ISO 50001. In particular, it is to ensure monitoring, measurement and analysis of the measures and results of the plan at specific intervals, ensuring data logging and obtaining information through appropriate and replicable techniques. It should be checked periodically the compliance of the legal requirements on energy and this must be materialized in internal audits to detect and resolve nonconformities that may exist, leaving proper registration.

The monitoring system is structured according to a set of **indicators** that allow monitoring both the level of development of the actions and the evaluation of their impact. The indicators have been selected so that they are simple, affordable, reliable, representative of the aspects that relate, sensitive to changes –reflecting tendencies-, useful for decision making, comparable, and appropriate to the needs of SEAP. In any case, it is a "living" system that can be improved or expanded over the years of the SEAP development according to their needs. According to this, two types of indicators for each measure have been defined:

- **Realization or development indicator.** It provides data to evaluate the degree of implementation of the SEAP measure at the date of control.
- **Results indicator.** It provides data to evaluate the effects on the date of control that the measure has produced in relation to the objectives of the SEAP.

The indicator system is as follows:

<sup>4</sup> Providing data on the structure of coordination and organization created or established, the number and type of personnel assigned, the level of participation of stakeholders and citizens, the total budget, the sources of funding or the proposed monitoring.

<sup>5</sup> Providing data on the status of implementation of actions -measures (Completed / In progress / Not started) by Sector, total amount spent, contribution to reducing consumption, reducing CO<sub>2</sub> emissions or renewable energy production, people responsible, etc.

MONITORING INDICATORS				
STRATEGIC LINE	SEAP MEASURE	Realization / development indicator	Results indicator	Valorization
STRUCTURE AND ORGANIZATION EO	1 DEFINITION OF AN ADEQUATE ORGANIZATIONAL STRUCTURE AND COMPETENCE	<b>Existence of organizational and procedural framework for the application of the SEAP in the municipality of A Bola and the Council of Ourense.</b> Unit: presence / absence		The ABSENCE of an adequate organizational structure and procedural in the time limits set will be subject to nonconformity, notifying the result to those most responsible
	1 SEAP COMMUNICATION AND PARTICIPATION PLAN UNTIL 2020	<b>Nº of dissemination, communication and participation of the SEAP</b> Unit: Nº	<b>Number of socioeconomic factors and citizens who know the SEAP</b> Unit: Nº	If the number is zero will be the subject of nonconformity, this result will be notify to those most responsible.
PUBLIC PROCUREMENTS OF PRODUCTS AND SERVICES CP	1 PUBLIC PROCUREMENTS OF PRODUCTS AND SERVICES	<b>Nº and % of public contracts that have included criteria for low carbon footprint, energy efficiency and promoting renewable energies.</b> Unit: Nº and %	<b>Nº and % of public contracts that have included criteria for low carbon footprint, energy efficiency and promoting renewable energies.</b> Unit: Nº and %	If the number and % equals zero (and this is not justified by the absence of public contests or by the lack of connection of the contest with aspects that relate directly or indirectly to energy) will be the subject of nonconformity and notify this result to those most responsible.
BUILDINGS, EQUIPMENT/FACILITIES municipal EEI <sub>M</sub> CPSF	1 ENERGY CERTIFICATION OF BUILDINGS / MUNICIPAL FACILITIES AND ACTIONS TO IMPROVE THE QUALIFICATION	<b>Nº Energy Audits conducted</b> <b>Nº Energy Certificates obtained</b> <b>Nº of Performances executed to improve rating</b> Unit: Nº	<b>Annual energy savings (MWh)</b> Unit: MWh <b>CO2 emissions avoided</b> Unit: Tons <b>annual renewable energy production</b> Unit: MWh	If the number is zero will be subject of nonconformity this result notifying those most responsible.
	2 EDUCATION OF LOCAL EMPLOYEES ON GOOD ENERGY PRACTICES IN BUILDINGS AND FACILITIES	<b>Nº of information / training events developed</b> <b>Nº informative posters placed</b> <b>Nº information guides distributed</b> Unit: Nº	<b>Number of public employees trained / aware</b> Unit: Nº	If the number is zero will be subject of nonconformity this result notifying those most responsible.
BUILDINGS, EQUIPMENT/FACILITIES RESIDENTIAL-TERTIARY EEI <sub>RT</sub> CPSF	1 PROMOTION AND INCENTIVE TO IMPROVE TERTIARY AND RESIDENTIAL BUILDINGS ENERGY QUALIFICATION	<b>Number of municipal taxes, including bonuses to improve the energy rating</b> <b>Number of information / dissemination events developed or being developed</b> Unit: Nº	<b>Number of residential and tertiary buildings that prove an improvement in their energy rating.</b> Unit: Nº <b>Annual energy savings</b> Unit: MWh <b>CO2 emissions avoided</b> Unit: Tons	If the number is zero will be subject of nonconformity this result notifying those most responsible..
	2 PROMOTION AND INCENTIVE OF RENEWABLE ENERGY (PHOTOVOLTAIC, SOLAR THERMAL, BIOMASS, OTHERS)	<b>Number of municipal taxes, including bonuses to improve the energy rating</b> <b>Number of information / dissemination events developed or being developed</b> Unit: Nº	<b>Number and% of residential and tertiary buildings that prove that they have an energy installation for the use of renewable energy and / or natural gas.</b> <b>Annual energy savings</b> Unit: MWh <b>CO2 emissions avoided</b> Unit: Tons	If the number is zero will be subject of nonconformity this result notifying those most responsible.

MONITORING INDICATORS				
STRATEGIC LINE	SEAP MEASURE	Realization / development indicator	Results indicator	Valorization
<p>BUILDINGS, EQUIPMENT/FACILITIES RESIDENTIAL-TERTIARY</p> <p>EEI<sub>RT</sub> CPSF</p>	3 EFFECTIVE CONTROL AND APPLICATION OF THE BASIC ENERGY SAVING REQUIREMENTS OF THE TECHNICAL BUILDING CODE IN NEW CONSTRUCTION BUILDINGS AND OPERATIONS ON EXISTING BUILDINGS. DEVELOPMENT OF THE ORDINANCE.	<p><b>Number and % of buildings that comply the minimum requirements of energy saving (HE) established in the CTE.</b></p> <p><u>Unit:</u> Nº and %</p> <p><b>Adoption of an Ordinance for energy efficiency and promoting renewable energies in new buildings or existing buildings interventions.</b></p> <p><u>Unit:</u> Presence and absence</p>	<p><b>Annual energy savings</b></p> <p><u>Unit:</u> MWh</p> <p><b>CO2 emissions avoided</b></p> <p><u>Unit:</u> Tons</p> <p><b>annual renewable energy production</b></p> <p><u>Unit:</u> MWh</p>	If the number is zero will be subject of nonconformity this result notifying those most responsible.
	4 CAMPAIGN FOR ENERGY SAVING IN THE HOMES AND SERVICES	<p><b>Nº events or informative and educational activities performed Citizenship and services.</b></p> <p><b>Nº of labels or "green" awards granted.</b></p> <p><u>Unit:</u> Nº</p>	<p><b>Number of sensitized / aware economic stakeholders and citizens.</b></p> <p><u>Unit:</u> Nº</p> <p><b>Annual energy savings</b></p> <p><u>Unit:</u> MWh</p> <p><b>CO2 emissions avoided</b></p> <p><u>Unit:</u> Tons</p>	If the number is zero will be subject of nonconformity this result notifying those most responsible.
<p>PUBLIC LIGHTING</p> <p>AP</p>	1 AUDIT OF PUBLIC LIGHTING	<p><b>Number of audits performed</b></p> <p><b>Number of executed measures of the improvement plan</b></p> <p><u>Unit:</u> Nº</p> <p><b>Investments made in measures of the improvement plan</b></p> <p><u>Unit:</u> €</p>	<p><b>Annual energy savings</b></p> <p><u>Unit:</u> MWh</p> <p><b>CO2 emissions avoided</b></p> <p><u>Unit:</u> Tons</p>	If the number is zero will be subject of nonconformity this result notifying those most responsible..
	2 RENEWAL OF PUBLIC LIGHTING OUTDOOR FACILITIES	<p><b>Number and % of regulators and lamps changed for an energy rating A or B.</b></p> <p><b>Number and % of city centers with outdoor lighting installations renovated by an efficiency criteria.</b></p> <p><b>Number and % of streets with street lighting installations renovated by an efficiency criteria.</b></p> <p><u>Unit:</u> Nº and %</p> <p><b>Investment in renovation projects for public lighting.</b></p> <p><u>Unit:</u> €</p>	<p><b>Annual energy savings</b></p> <p><u>Unit:</u> MWh</p> <p><b>CO2 emissions avoided</b></p> <p><u>Unit:</u> Tons</p>	If the number and % does not increase over the previous two years will be subject of nonconformity this result will be notify to those most responsible.
<p>TRANSPORT. MUNICIPAL FLEET</p> <p>TPTE<sub>M</sub> CPSF</p>	1 USE OF BIOFUEL	<p><b>Liters of biofuel consumed annually by the municipal fleet.</b></p> <p><u>Unit:</u> Liters</p>	<p><b>CO2 emissions avoided</b></p> <p><u>Unit:</u> Tons</p>	If the liters are zero will be subject of nonconformity this result will be notify to those most responsible.
	2 MUNICIPAL FLEET RENEWAL	<p><b>Nº of efficient and sustainable vehicles purchased and % over the total of the municipal fleet.</b></p> <p><u>Unit:</u> Nº and %</p>	<p><b>Annual energy savings</b></p> <p><u>Unit:</u> MWh</p> <p><b>CO2 emissions avoided</b></p> <p><u>Unit:</u> Tons</p>	If the number and the % is zero will be subject of nonconformity this result notifying those most responsible.



MONITORING INDICATORS				
STRATEGIC LINE	SEAP MEASURE	Realization / development indicator	Results indicator	Valorization
TRANSPORT. MUNICIPAL FLEET  <b>TPTE<sub>M</sub> CPSF</b>	3 CONTROL OF ROUTES AND FUEL CONSUMPTION. TRAINING IN EFFICIENT DRIVING (ECO-DRIVING)	N° of information / training events developed N° informative posters placed N° information guides distributed <u>Unit:</u> N°	Number of sensitized / aware economic stakeholders and citizens. <u>Unit:</u> N° Number of trips / journeys optimized <u>Unit:</u> N° Annual energy savings <u>Unit:</u> MWh CO2 emissions avoided <u>Unit:</u> Tons	Si el N° es igual a A CERO será objeto de No Conformidad, notificando este resultado a los máximos responsables.
	1 ENCOURAGE AND PROMOTION WALKING AND CYCLING MOBILITY	Number of implemented improvements in access and infrastructure. Number of bike racks. <u>Unit:</u> N°	Number of spaces occupied bike racks / N° existing bike racks. <u>Unit:</u> N° CO2 emissions avoided <u>Unit:</u> Tons	If the number of bike racks and improvements is zero will be subject of nonconformity this result will be notify to those most responsible.
TRANSPORT. PUBLIC-PRIVATE-COMMERCIAL  <b>TPTE<sub>PPC</sub> CPSF</b>	2 PUBLIC TRANSPORT SYSTEM ON DEMAND	Existence of demand shuttle <u>Unit:</u> presence / absence	Number. of calls / contacts requesting annual route N° route "on demand" planned in A Bola <u>Unit:</u> N° Annual energy savings <u>Unit:</u> MWh CO2 emissions avoided <u>Unit:</u> Tons	If the service does not start or the number of users and routes is zero will be the subject of nonconformity this result will be notify to those most responsible.
	3 INCENTIVES AND DISSEMINATION. RENEWAL OF VEHICLES	Number of municipal taxes, including bonuses to high-efficiency vehicles Number of places reserved for electric or high efficiency vehicles Number of information / dissemination events developed or being developed <u>Unit:</u> N°	Number of vehicles that certify a high-efficiency energy labeling and % of the total. <u>Unit:</u> N° Annual energy savings <u>Unit:</u> MWh CO2 emissions avoided <u>Unit:</u> Tons	If the number is zero will be subject of nonconformity this result notifying those most responsible.
	4 CAR SHARING PLATAFORM "CARPOOLING"	Existence of a platform that promotes car sharing service. <u>Unit:</u> presence / absence Number of system users. <u>Unit:</u> N°	Annual energy savings <u>Unit:</u> MWh CO2 emissions avoided <u>Unit:</u> Tons	The absence of a platform or id the number of users is zero will be subject to nonconformity, notifying the result to those most responsible.
	5 AWARENESS AND CAMPAIGNS FOR SUSTAINABLE LOCAL MOBILITY	Number of events, conferences, etc. made in relation to sustainable mobility. <u>Unit:</u> N°	Number of sensitized / aware economic stakeholders and citizens. <u>Unit:</u> N° Annual energy savings <u>Unit:</u> MWh CO2 emissions avoided <u>Unit:</u> Tons	If the number is zero will be subject of nonconformity this result notifying those most responsible.
RESIDUOS  <b>RSU CPSF</b>	1 INCENTIVES AND AWARENESS TO REDUCE THE WASTE PRODUCTION IN THE ORIGIN. PROMOTE RECYCLING AND THE EFFECTIVE SEPARATION OF THE WASTE.	Number of events, conferences, etc. made in relation to waste, its minimization and its valuation at source. <u>Unit:</u> N°	CO2 emissions avoided <u>Unit:</u> Tons	If the number is zero will be subject of nonconformity this result notifying those most responsible.

The structure and organization for the implementation of the SEAP should identify those responsible for monitoring in the administrations (A Bola City Council and Provincial Council of Ourense) taking into account the potential creation of a municipal *energy manager* or *local energy management unit*. These responsible will carry out an **annual evaluation** of the indicators being registered in an annual monitoring report. If it detects irregularities or failures, it must be notified to the Mayor and energy responsible for the Provincial Council of Ourense so that it can be resolved as soon as possible to ensure the compliance of the SEAP on time and form. The notification will include:

- Date
- Description of the nonconformity situation
- SEAP measure which it refers
- Cause
- Immediate action to take
- Corrective action to be taken
- Verification of the effectiveness

To resolve nonconformities new measures may be taken. On the other hand, it should be taken into account the possibility that during the period of the plan new regulations and technical requirements for the reduction of emissions, consumption and efficiency or technical or technological improvements may be developed. These new measures or actions will be incorporated into the local energy planning under the criteria of continuous improvement of the system.