

Valladolid Mission

Sustainable Energy Action Plan of
Valladolid (SEAP)



Ayuntamiento de
Valladolid



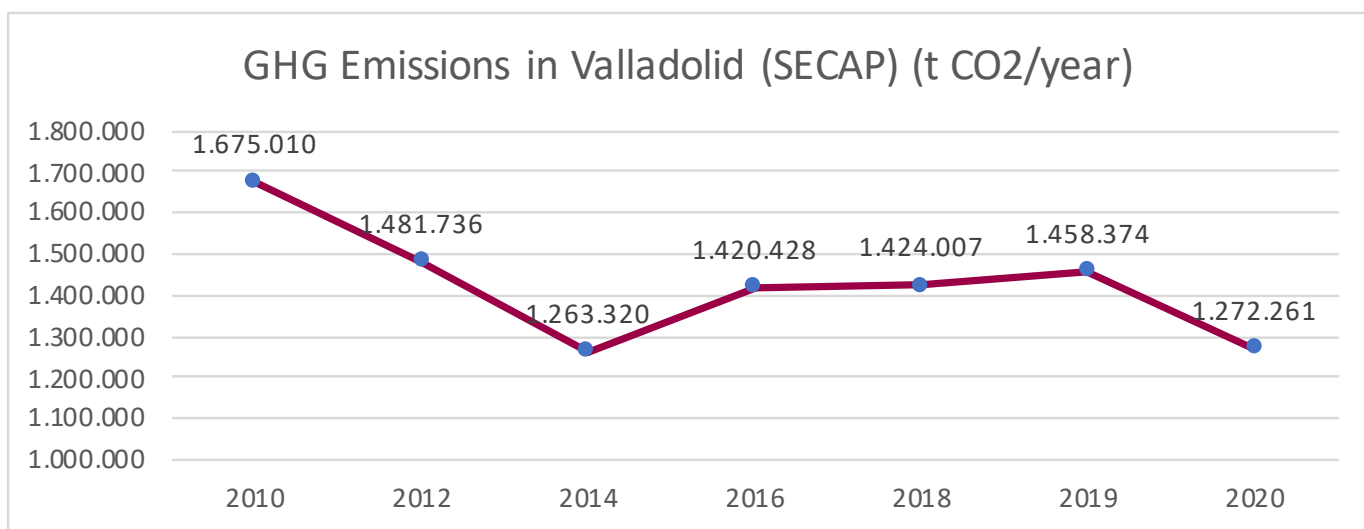
VALLADOLID
ciudad amiga

Introduction



Valladolid City Council adhered to the **Covenant of Mayors** as a signatory in April 2011 which committed to develop a Sustainable Energy and Climate Action Plan (SEAP). The SEAP of Valladolid [SEAP_VA] was born in June 2012 and accepted by the European Commission in April 2013.

The first step was to carry out the **Greenhouse Gas Emissions (GHG)** Inventory with data from 2010 as a baseline. This inventory has been updated every two years until 2018, when the City Council decided to increase the commitment and calculate it annually.



Graph 1. Evolution of the GHG inventory of the SEAP of Valladolid (2010-2020) (*For a more detailed analysis, consult the Emissions section of the questionnaire, and the associated documentation)

In parallel to the SEAP_VA, Valladolid City Council has decided to calculate the carbon footprint of the municipal organization (buildings, facilities, equipment) since 2012. With that commitment Valladolid City Council has obtained the three labels of the Ministry for the Ecological Transition of Spain, a national acknowledgment: **Calculate, Reduce and Offset labels**, being the first Spanish municipality to obtain the three of them in 2015. In 2020 we obtained the three labels again (see more details in the attached documentation in the questionnaire Emissions tab).

Focused on the next steps, Valladolid City Council is working on the development of the **Sustainable Energy and Climate Action Plan (SECAP)**, with both climate mitigation and adaptation aspects, to guide and support us on the climate-neutrality objective by 2030.

One of the strengths of our corporation is that Valladolid has a **Municipal Energy Agency (AEMVA, Agencia Energética Municipal)**, a management and operational unit within the City Council, whose main purpose is the optimization and rationalization of energy consumption and, by extension, of the public services provided by the municipality, as well as inform, advise and sensitize citizens in the planning and control of their energy projects. The creation of the AEMVA arises from the need to address energy efficiency in an integral way. AEMVA is an active member of the Association of Spanish Energy Management Agencies, EnerAgen www.eneragen.org/es; and the European Federation of Agencies and Regions for Energy and Environment, FEDARENE www.fedarene.org

SEAP_VA in a nutshell



Objective

Valladolid City Council sets the objective of reducing the city's emissions per capita by 20% in 2020 compared to 2010 emissions. The objective was accomplished over 20% (**24% in concrete**).

Citizen participation process and communication

SEAP_VA has been developed within the framework of the IV Action Plan of the Local Agenda 21 of Valladolid (AL21), through the forum of the AL21 Commission, a consultative body made up of representatives of the local stakeholders¹.

Action Plan

The SEAP action steps are grouped according to the sector (municipal, private sector, other administrations). For each sector, there were defined both the vision and long-term objectives (2020) as well as short-term measures (2013-2016). For every action there was provided the planned budget, schedule, expected energy savings and estimated GHG emission reductions.

A. MUNICIPAL POLICY ACTIONS AND INSTITUTIONAL ACTIONS

The objectives to be achieved within the municipal administration sector until 2020 were:

1. Modify current internal mobility patterns to reduce their CO2 emissions: change in the vehicle fleet, habits, home-working.
2. Progressively reduce the consumption of electrical energy for indoor lighting systems as well as public lighting.
3. Reduce overall energy consumption by 75%.
4. Reduce energy consumption of the ornamental lighting by 60%.
5. In public buildings and schools, evolve existing thermal systems towards the use of locally sourced biomass as fuel, to reduce CO2 emissions to zero.
6. Increase solar energy generation for air conditioning and heating of multi-sport buildings.
7. Reduce external dependence on primary energy consumption (self-generation).
8. Improve the commercial speed of public transport and incorporate the metropolitan area into the general public transport system.
9. Reduce traffic flow by 5% per year between 2013-2016.

B. OTHER ADMINISTRATIONS

Actions aimed at other public institutions focus on air conditioning and lighting of official buildings, as well as staff mobility.

¹Local Agenda 21 (AL21) is a participatory body of a consultative nature consisting of representatives of citizen organizations (neighbours, commerce, environment, social, etc.), public administrations, trade unions, business organizations or universities. It has been replaced in 2021 by the commission of the Urban Agenda 2030 Valladolid (AUVA_2030) www.auva2030.es

1. Reduce the carbon footprint from the fossil fuels by 5% per year (2014-2020).
2. Progressive reduction of from consumption for indoor lighting systems.
3. Reduce by 50% the need for staff travel between institutional buildings.

C. PRIVATE SECTOR AND INDUSTRY ACTIONS

On the other hand, the targets to be met by private buildings, facilities and industry until 2020 were:

1. Reduction of primary energy consumption for heating by 20%.
2. Reduction of electricity consumption in dwellings and homes by 30%.
3. Reduction of electrical energy consumed by commerce in lighting systems by 50%.
4. Reduction of electrical energy consumed by the hospitality sector in lighting systems by 30%.
5. Reduction of electricity consumption in homes and households by 30%.



Image 1. Solar City - SEAP Valladolid (Author: Manuel Sierra)

Featured results

Some of the successes achieved in the execution period of the SEAP_VA (2012-2020) are the following:

A. MUNICIPAL POLICY ACTIONS AND INSTITUTIONAL ACTIONS

- With the objective of transforming **public lighting** to LED lamps, 32,000 light points have been intervened in 1,280 streets. It has meant a saving in consumption of 17.948 MWh, 44.56 % less. Reduction in CO2 emissions: -7.179,20 t CO2.

- Regarding **indoor lighting** of municipal buildings, twenty-five municipal buildings have been partially intervened and twelve buildings have been fully intervened (city council buildings, schools, civic centres, municipal markets, etc.). This meant the change of 7,000 lights and the renovation of the electrical panels of 6 buildings. With this change, Valladolid City Council reduced its consumption by 1.978,75 MWh, - 10.02%. Reduction in CO2 emissions: -652 t CO2.

- **Telecontrol of Installations and domotics.** Remote control in consumption allows us to know how we consume energy in each building, so that we can then implement smart saving and efficiency measures. There are presence-luminance type control systems in many municipal buildings as well as remote-control measures already installed. It is planned to expand its installation in all municipal buildings.

- In the municipal buildings, 6 **biomass boilers** have been installed for heating, with a total installed power of 445 kW, that have led to a saving of 55.200 kWh and a fuel cost of 118,80 t pellets (2017). Reduction in CO2 emissions: -64,1 t CO2.

Also in municipal buildings, Municipal Solar Plan installed 1,768 square meters of **thermal solar panels**, which generate 1,326,800 kWh. Reduction in CO2 emissions: -437,58 t CO2.

Besides, **33 photovoltaic power generation** facilities for energy sale have been also installed, with powers ranging from 1.5 kWp to 200 kWp. During 2019 there was generated 381 kWh (income 140.644 €) and 249,68 kWh in 2020 (income 70.284 €). Reduction in CO2 emissions: average - 336,45t CO2/year.

Likewise, from 2012 to 2019, there are 17 new **installations for managing** the electrical charge of the building based on demand. The installation of this equipment has induced savings in annual electricity consumption of 294,407 kWh. Reduction in CO2 emissions: -117,47 t CO2.

- In **urban mobility**, the fleet of municipal vehicles has been replaced by electric and hybrid vehicles. The AUVASA (municipal company for urban transport www.auvasa.es) bus fleet has been renewed with 11 hybrid buses and 6 compressed natural gas (CNG) buses. Deployment in 2013 of a bicycle loan service named VallaBici (<https://app.usualbike.com/vallabici>), with 225 bicycles at 31 collection stations.

- The SEAP has been integrated into the **Master Plan** (PGOU, 2020). Some of the integrated measures are the use of District Heating, the comprehensive deployment of interconnected cycle lanes throughout the city and the incorporation of technical principles of energy efficiency in buildings.



Image 2. Installation of solar panels on the roofs of municipal buildings

B. OTHER ADMINISTRATIONS

- Implementation of **tele-management and control measures** for electrical energy consumption (use of energy, interior and exterior lighting) in different buildings of the Junta de Castilla y León (regional government). The most spectacular result was obtained in the building of the Cortes de Castilla y León with a consumption saving of 1 GWh (2013). Reduction in CO2 emissions: -330 t CO2.

- **Thermal Comfort Systems** in administrative buildings: replacement of the cold-heating system of any fuel for biomass. Two district heating have been implemented: one at the University of Valladolid installed in 2015 (31 connected buildings, installed thermal power 14 MW, energy consumption of 22,069,734 kWh per year, a network of 11.3 km, consumption of 7,886 t_{wood chips}/year, reduction in CO2 emissions: -6,800 t CO2. Another district heating in the Huerta del Rey neighbourhood installed in 2017 (for 6 administrative buildings of the Junta de Castilla y León and municipal, installed power of 7 MW), which is planned to be expanded (2022).

C. PRIVATE SECTOR AND INDUSTRY ACTIONS

- **Thermal comfort systems** in neighbourhoods: 8 large neighbourhood communities (more than 2,000 homes and a private educational centre) changed their old thermal systems to biomass fuel since 2013. Rehabilitation includes residents of less favoured neighbourhoods of the city such as Rondilla, Cuatro de Marzo and Delicias.

- **Industrial Uses of Energy.** An MDF board factory operates a thermal fluid plant with an installed capacity of 2 MW and which consumes a total of 6,750 t_{wood chips} /year. 3 manufacturing industries also consume 155 t of pellets in their thermal installations.

D. COMMUNICATION

- There have been organized 18 citizen **dissemination and engagement** sessions for general citizens; several workshops for SMEs; 6 agreements have been signed with professional groups, such as urban property administrators or the heating and air conditioning companies' association, as well as with companies in the energy sector.

- There have been created a website for the citizens to help energy efficiency and savings (**Energy self-consumption:** www.autoconsumoaldetalle.es), thanks to the EU project PUBLENEF, with the collaboration of CIEMAT and the CVE (2017-2019).



Evolution in the GHG Emissions of Valladolid municipality 2010-2020

Sustainable Energy Action Plan (SEAP)



		GHG EMISSIONS IN THE CITY OF VALLADOLID (t CO2)													
		2010	%	2012	%	2014	%	2016	%	2018	%	2019	%	2020	%
Buildings, equipments/facilities, commerce and industries	Municipal buildings	10.619,15	0,63	14.193,39	0,96	11.759,10	0,93	12.777,86	0,90	11.896,55	0,84	13.047,00	0,89	7.571,23	0,60
	Tertiary sector, commerce and light industry buildings	125.546,15	7,50	124.875,50	8,43	72.729,87	5,76	88.196,26	6,21	68.306,64	4,80	110.280,15	7,56	143.478,07	11,28
	Residential buildings	417.484,99	24,92	370.783,79	25,02	335.570,16	26,56	342.497,29	24,11	334.506,94	23,49	235.050,60	16,12	237.979,35	18,71
	Public lighting	9.461,06	0,56	9.017,37	0,61	8.732,46	0,69	6.008,25	0,42	4.989,67	0,35	4.688,20	0,32	0,00	0,00
	Industries (non EU-ETS)	491.894,17	29,37	453.421,83	30,60	352.264,47	27,88	445.111,65	31,34	442.797,70	31,10	518.647,75	35,56	452.759,61	35,59
	Total sector	1.055.005,52	62,99	972.291,88	65,62	781.056,06	61,83	894.591,31	62,98	862.497,50	60,57	881.713,70	60,46	841.788,26	66,16
Transport	Municipal fleet	7.712,98	0,46	3.258,15	0,22	3.092,43	0,24	3.351,12	0,24	3.224,45	0,23	3.312,67	0,23	3.183,13	0,25
	Public transport	23.296,25	1,39	20.432,61	1,38	20.772,96	1,64	21.210,35	1,49	19.246,57	1,35	18.483,45	1,27	13.310,97	1,05
	Private and commercial transport	566.298,57	33,81	486.109,97	32,81	458.816,98	36,32	501.725,46	35,32	539.420,68	37,88	555.236,97	38,07	414.351,88	32,57
	Total sector	597.307,80	35,66	509.800,73	34,41	482.682,37	38,21	526.286,93	37,05	561.891,70	39,46	577.033,09	39,57	430.845,98	33,86
Total*	1.675.009,61		1.481.735,92		1.263.320,35		1.420.427,80		1.424.007,09		1.458.373,54		1.272.260,77		
% DECREASE IN EMISSIONS COMPARED TO 2010				11,5%		24,6%		15,2%		15,0%		12,9%		24,0%	

*Energy generation not included

Table1. Summary table of SEAP emissions result 2010-2020

Alignment with the European Mission

Sustainable Energy Action Plan of Valladolid [SEAP_VA] is aligned with the objectives of the **100 Smart and Climate Neutral Cities Mission 2030** as in the Covenant of Mayors signatory cities pledged action to support the implementation of the EU 40% greenhouse gas reduction target by 2030 and the adoption of a joint approach to tackling mitigation and adaptation to climate change. Local plan [SEAP_VA] focuses on the climate neutrality of the city and on the generation of an innovative ecosystem through a holistic demand-driven approach, based on the identified needs of the city.

Our Plan is increasing the quality of life of the inhabitants, reducing energy consumption and associated energy costs and increasing energy efficiency. All the actions already taken from 2012 to 2020 contributed firstly to identifying the most important sources of GHG emission generation, on which to act as a priority. The sources identified in the GHG inventory allowed sector-specific measures to be taken and they were included in the Plan. Actions already delivered last decade contributed to fulfilling the mission of protecting and preserving the environment by reducing greenhouse gas emissions. The results obtained have allowed the City Council to identify new actions and aspects to improve in the action policies developed over the years, to reach the objective of being climate neutral by 2030.

We highlight the alignment of the following projects with the European Mission, closely related to energy saving, energy diversification and the use of biomass as an alternative fuel:



1. Generation of photovoltaic solar energy in municipal buildings.
2. Implementation of solar thermal installations in administrative buildings.
3. Installations of biomass boilers, District heating.
4. Substitution of conventional lighting, indoor and outdoor, with efficient LED lights.
5. Promotion of the municipal and private electric vehicle.
6. Deployment of a network of electric charging stations.
7. Deployment of a bicycle loan system, 'VallaBici'.
8. Extension of the interconnected bike lane throughout the city.
9. Application of a Solar Ordinance² since 2005, which required any new building to self-generate 20% of the energy it consumes.

Valladolid aims to give an active role to its inhabitants, who are at the centre of the Mission as intended by Europe. This is why SEAP_VA considers communication processes to be the essential means of keeping stakeholders informed and motivated, both within the City Council and with the social and private actors involved.

²Repealed in 2019, when state legislation was approved that included it and improved it.

More information

Complete document: Sustainable Energy Action Plan of Valladolid (SEAP)

Sustainable Energy and Climate Action Plan of Valladolid (SECAP) 2012-2020

<https://www.valladolid.es/valladolid-client/cm/images?idMmedia=635107>

Greenhouse gas emissions inventory of Valladolid (2010-2020)

<https://www.valladolid.es/es/temas/hacemos/agencia-energetica-municipal-aemva/inventario-emisiones>

Actions carried out in the Valladolid Energy Action Plan [SEAP_VA] 2012-2018

https://www.valladolid.es/es/actualidad/noticias/plan-accion-energia-sostenible-ciudad-valladolid-paes-avanz.ficheros/526561-ACCIONES%20PAES%202012_2019.pdf



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Valladolid is a member of the Spanish citiES2030 platform

