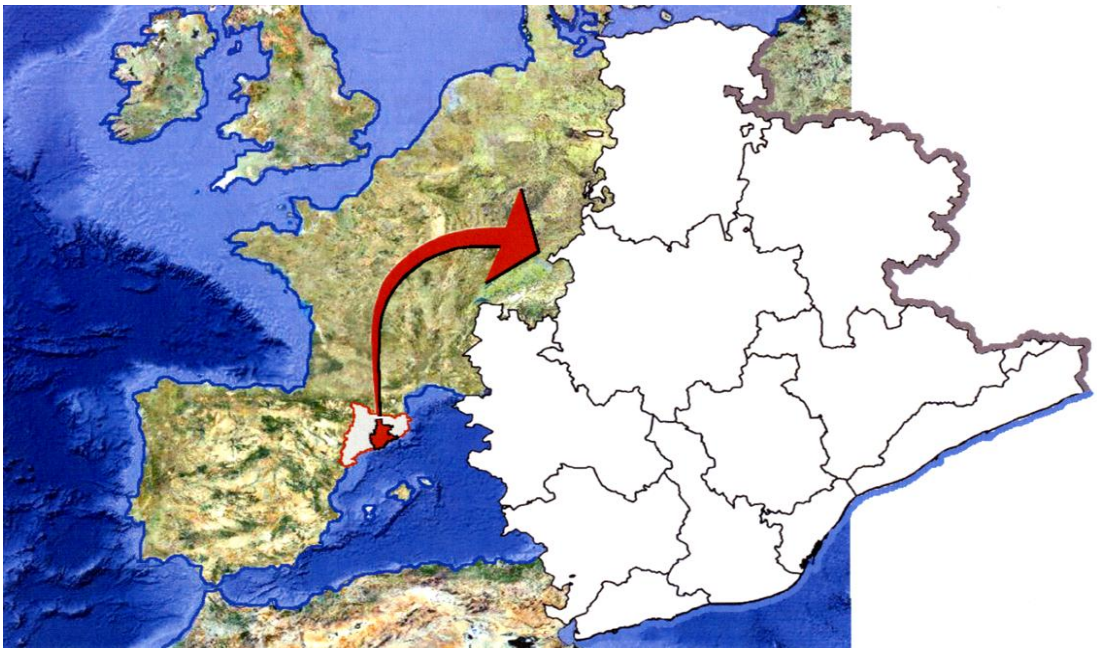
SECAP Summary report

Viladecans

2017



SUSTAINABLE ENERGY AND CLIMATE ACTION PLAN
Viladecans

SECAP Summary report

Date of adhesion **pendent**

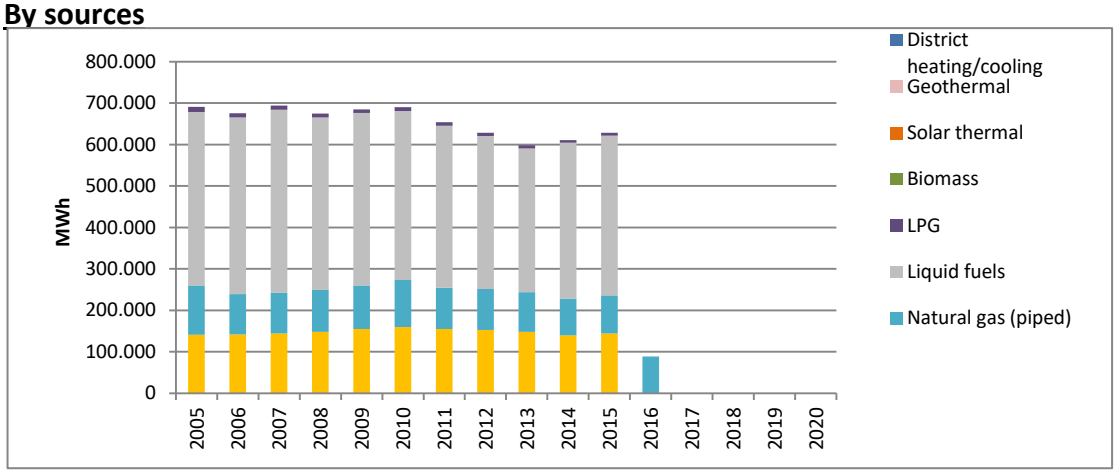
Inhabitants (Inh.)	61.043
Seasonal population (inh.)	-
Municipality total surface (Km2)	20,11
Urban land (km2)	5,41
Urban waste production (kg/inh.day)	1,20
Water consumption (l/inh.day)	131
Type of municipality (1)	Residential

Data from 2005; emission inventory baseline year

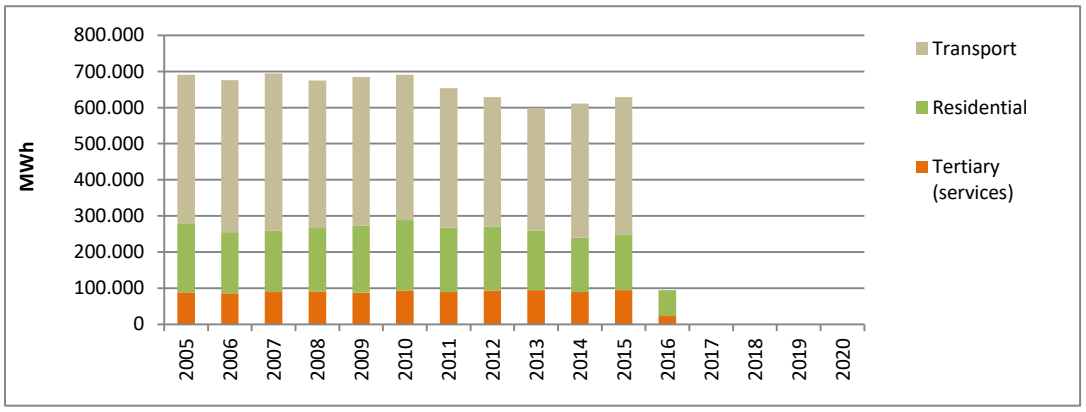
(1) Industrial, rural, touristic...

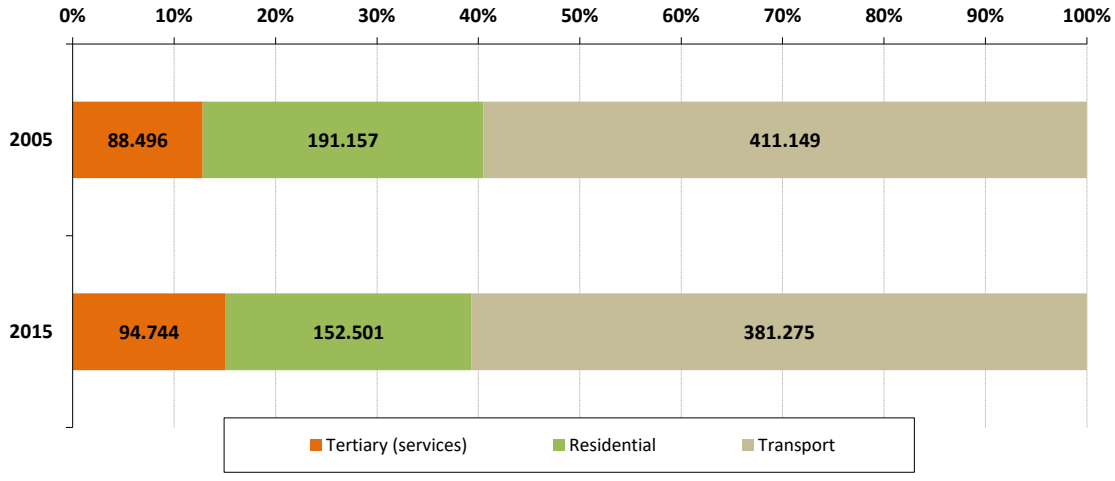
Energy consumptions of the municipality

By sources



By sectors





Total energy consumption (kWh/inh)

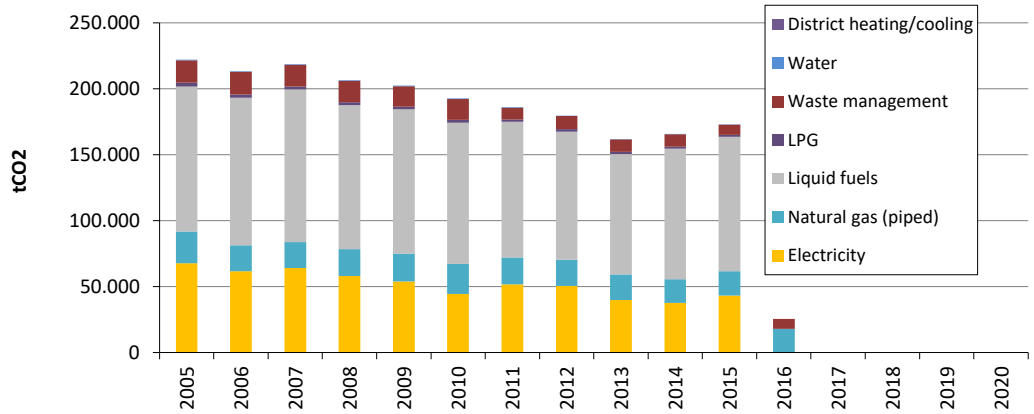
	2005	2015	Tendency (% difference respect baseline year)
Viladecans	11.317	9.589	**-15%**
Average of the consumption of the province of Barcelona *e >50.000Hab.*	11.943	9.964	**-17%**

Assessment

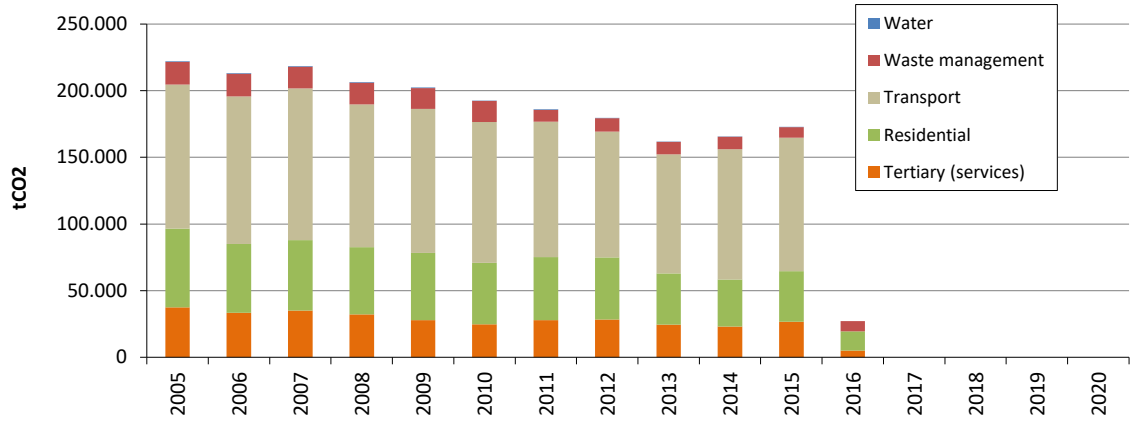
In 2005, the PAESC area had an energy consumption of 690,802 MWh and decreased by 9% until 2015 when 628,520 MWh were consumed. The evolution of per capita consumption decreases by 15% because the population of the municipality in this period increased by 7%.
The most consumed energy source in 2005 in the PAESC area was liquid fuels with 418,510 MWh, which accounted for 61% of the consumption of the municipality. Secondly, it is worth highlighting the high consumption of electricity and natural gas, which represented 20% and 17% for that year, respectively.
In 2005, energy consumption by sectors was distributed as follows: transport is the largest with 60%, followed by the domestic sector with 28% and 13% of the tertiary sector.
In the evolution until 2015, the tertiary sector is the only one that has seen its consumption increased by 7%, while domestic consumption has decreased by 20% and that of the transport sector by 7%. The increase in energy consumption in the tertiary sector is due to the growth of economic activity in the municipality.

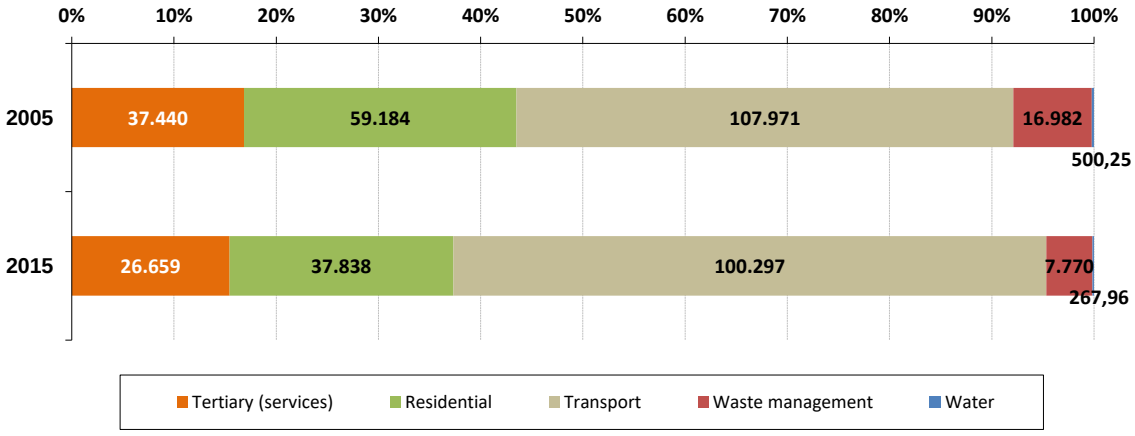
GHG emissions of the municipality (SECAP scope)

By sources



By sectors





Total emissions (tCO2/inh.)

	2005	2015	Tendency (% difference respect baseline year)
Viladecans	3,64	2,64	**-28%**
Average GHG emission in the province of Barcelona *e >50.000Hab.*	4,01	2,62	**-35%**

Assessment

Analyzing emissions according to the evolution of the population, it is observed that the ratio of emissions per inhabitant has increased from 3.64 t CO2eq in 2005 to 2.64 t CO2eq in 2015, which represents a decrease of 28% .

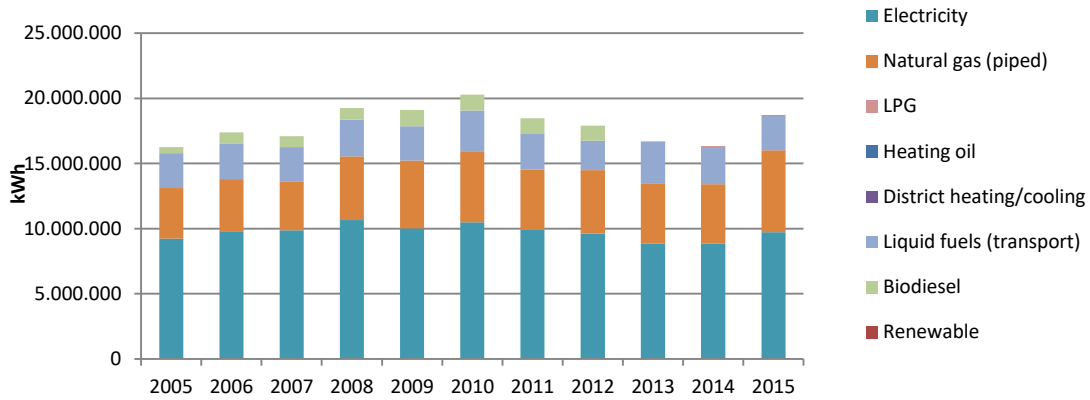
Globally, in 2015, 172,832 tCOeq were issued, which represents a 22% decrease compared to 2005. Therefore, by 2015, the objective of a reduction of 20% of emissions has already been achieved of GEH by the year 2020, although it is necessary to continue working to reach the objective of 40% by the year 2030.

According to data from the last year available, in general terms, 59% are due to the consumption of liquid fuels and 25% to electrical consumption. Natural gas accounted for 11%, while waste management and the water cycle contributed 4% and 0.2% of emissions, respectively.

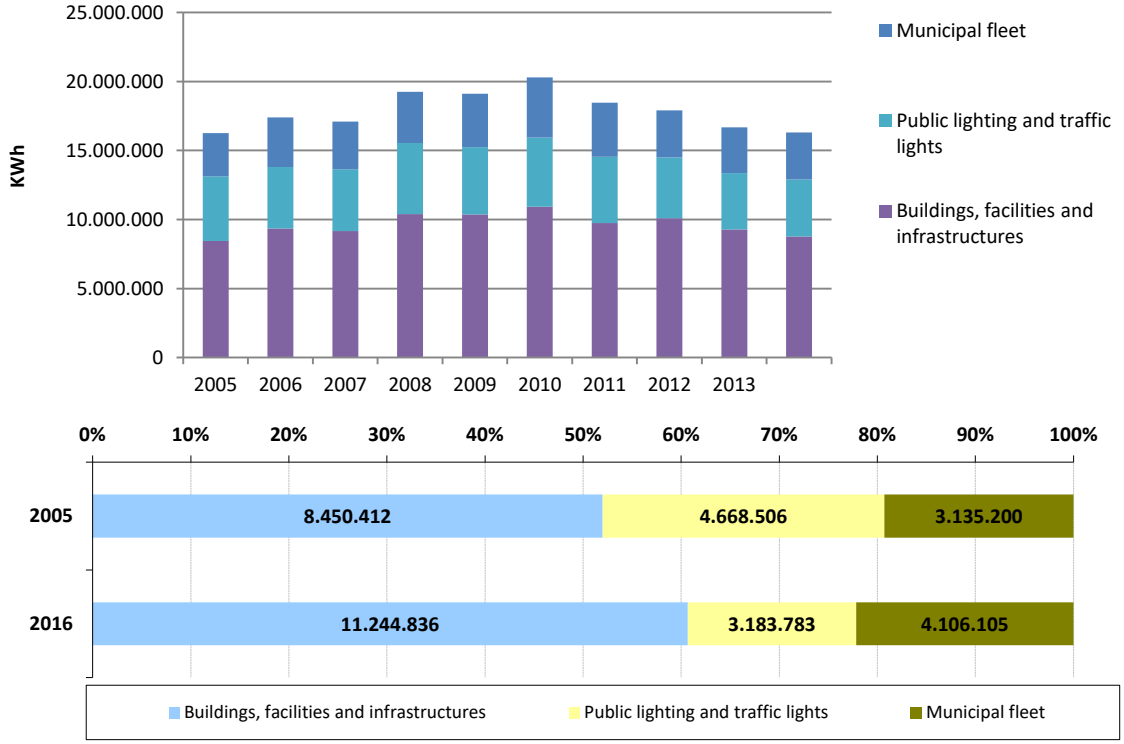
The sector that has contributed most to the reduction of emissions in the PAESC area for the period 2005-2015 has been the domestic sector, with a 36% decline in emissions. For its part, emissions linked to the treatment of waste have decreased by 54% and the water cycle by 46%, but due to the low weight in the total GHG emissions that these sectors have, they do not main actor for the global reduction of emissions. The sectors that have reduced their emissions less are transport and the tertiary, which have reduced them by 29% and 7%, respectively.

Energy consumption of the Town Council

By sources



By sectors



Energy consumption (kWh)

	2005	2016	Tendency (% difference respect baseline year)
Buildings, facilities and infrastructures	8.450.412	11.244.836	33%
Public lighting and traffic lights	4.668.506	3.183.783	-32%
Municipal fleet	3.135.200	4.106.105	31%
Total	16.254.118	18.534.724	14%

Assessment

The latest available data for the City Council area is 2016. The consumption in kWh in the area City Council has decreased by 14% compared to the year 2005, from 16,254 MWh to 18,535 MWh.

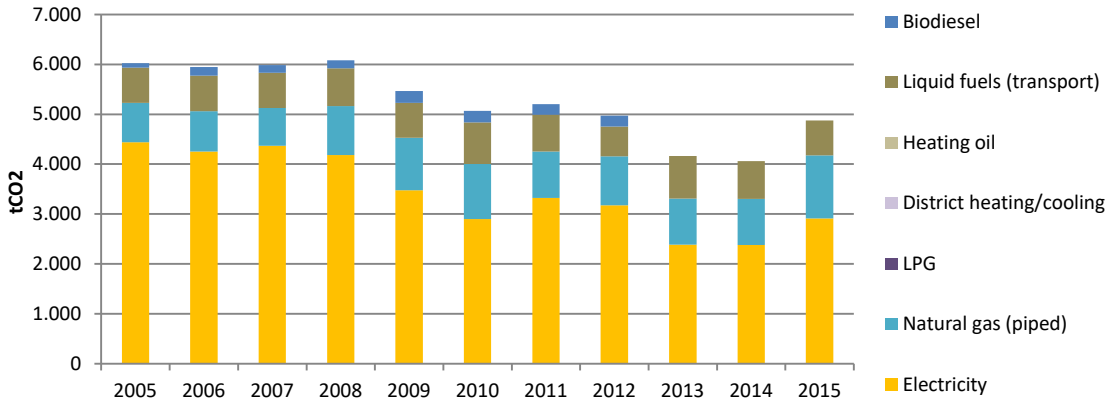
The sector that consumes more energy is the municipal facilities and buildings with 61% of the consumption, followed by the municipal fleet with 22% and the public lighting system with 17% of the consumption of the year 2016. The sector that has presented A more significant increase in consumption is municipal equipment with a 33% increase followed by the municipal fleet with an increase of 31%. On the other hand, the consumption of public lighting decreases 32% between the years 2005 and 2016.

Regarding energy sources, electricity accounts for 48% of total consumption in 2016, followed by natural gas with 40%, diesel A with 10%, gasoline with 1% Photovoltaic solar energy with the remaining 0.3%.

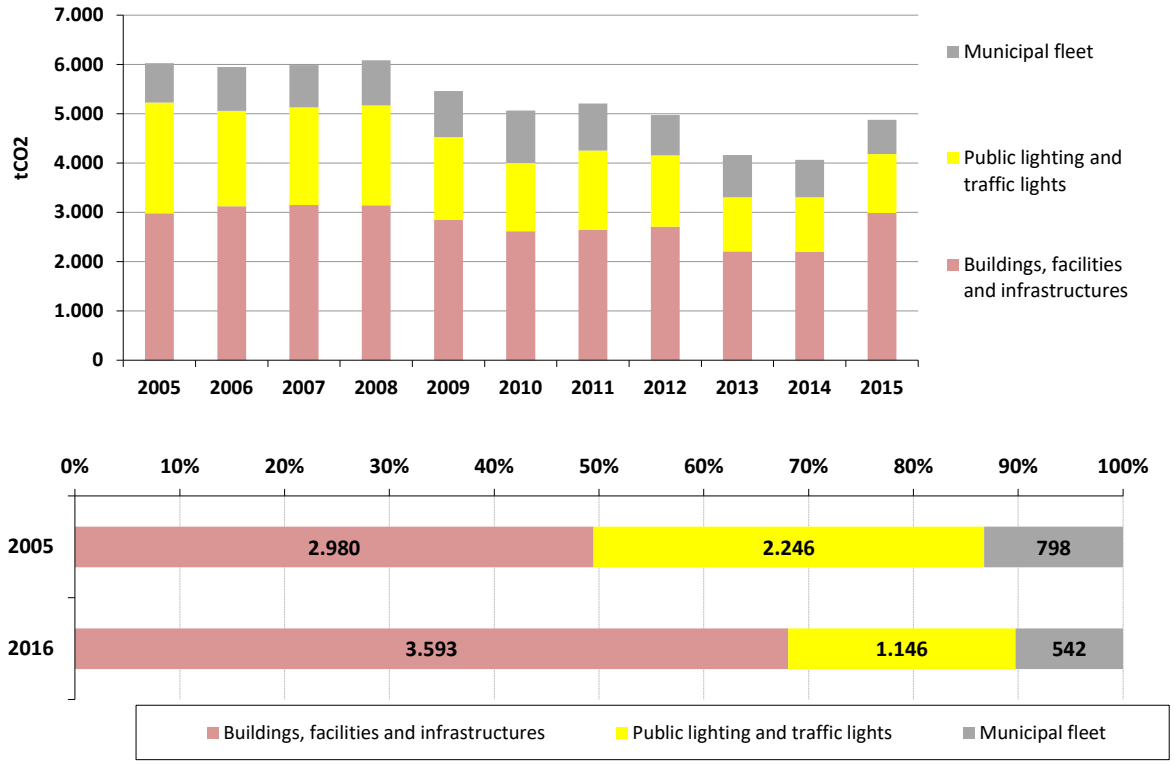
Electricity consumption has been reduced by 3% in 2016 compared to 2005 and diesel oil to 26%. Natural gas and gasoline have increased their consumption by 92% and 24%, respectively.

GHG emissions of the Town Council

By sources



By sectors



GHG emissions (tCO2)

	2005	2016	Tendency (% difference respect baseline year)
Buildings, facilities and infrastructures	2.980	3.593	21%
Public lighting and traffic lights	2.246	1.146	-49%
Municipal fleet	798	542	-32%
Total	6.024	5.281	-12%

Assessment

The GEH emissions due to the City Council's activity contribute with a total of 6,024 t CO2 in 2005 and 5,281 t CO2 in 2016, which represents a reduction in their emissions of 12%.

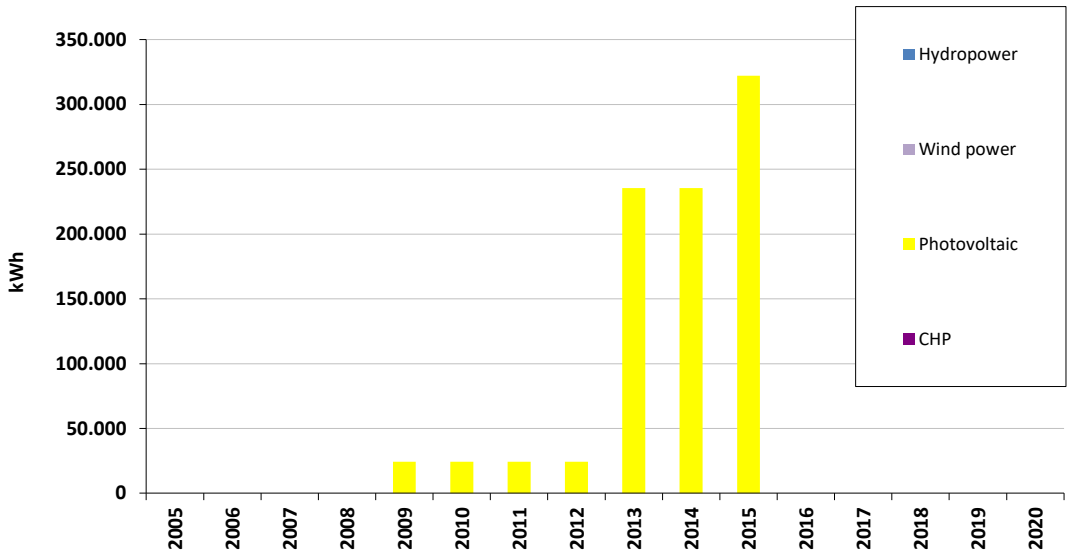
The emissions of the Viladecans City Council are mainly due to the electricity consumption, which represents 61% of the emissions in 2016. Natural gas is the second source of emission, representing 29%, followed by diesel fuel associated with the Municipal fleet and municipal services, which represents 9% of annual emissions.

Taking into account the different services, the sector that issues the most is the municipal facilities and facilities with 68% of the GEH emissions in 2016. However, during the period 2005-2016 these have been reduced 21%.

The public lighting system, which in 2016 was responsible for 22% of emissions in the municipal area, has reduced its emissions by 49%, mainly due to the replacement of existing lamps for LED technology. Finally, the emissions of the fleet of vehicles that wes responsible for 10% of the total emissions in 2016, have decreased by 32% despite the slight fluctuations during the study period.

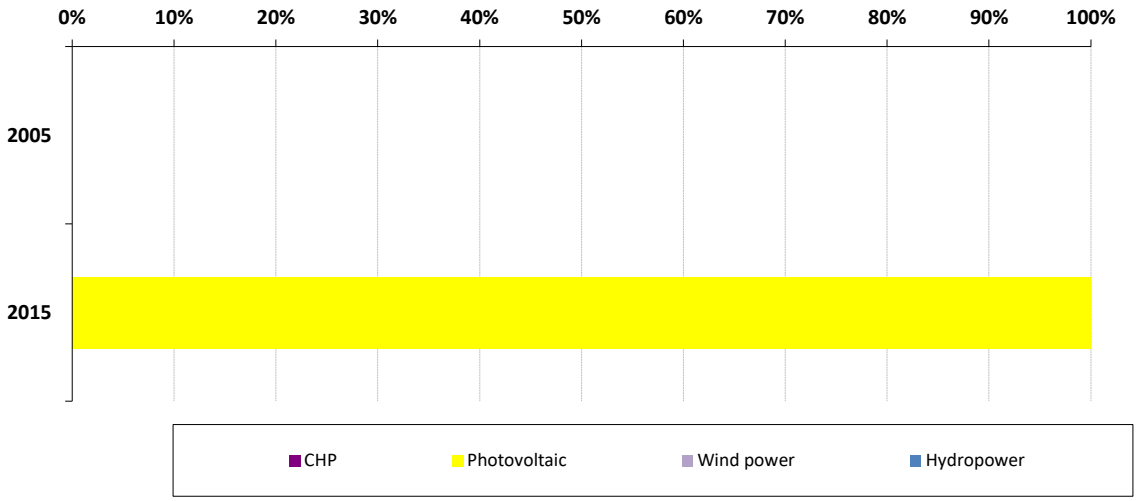
Local energy production

Under 20MW



Estimated from power when no specific data on production exist

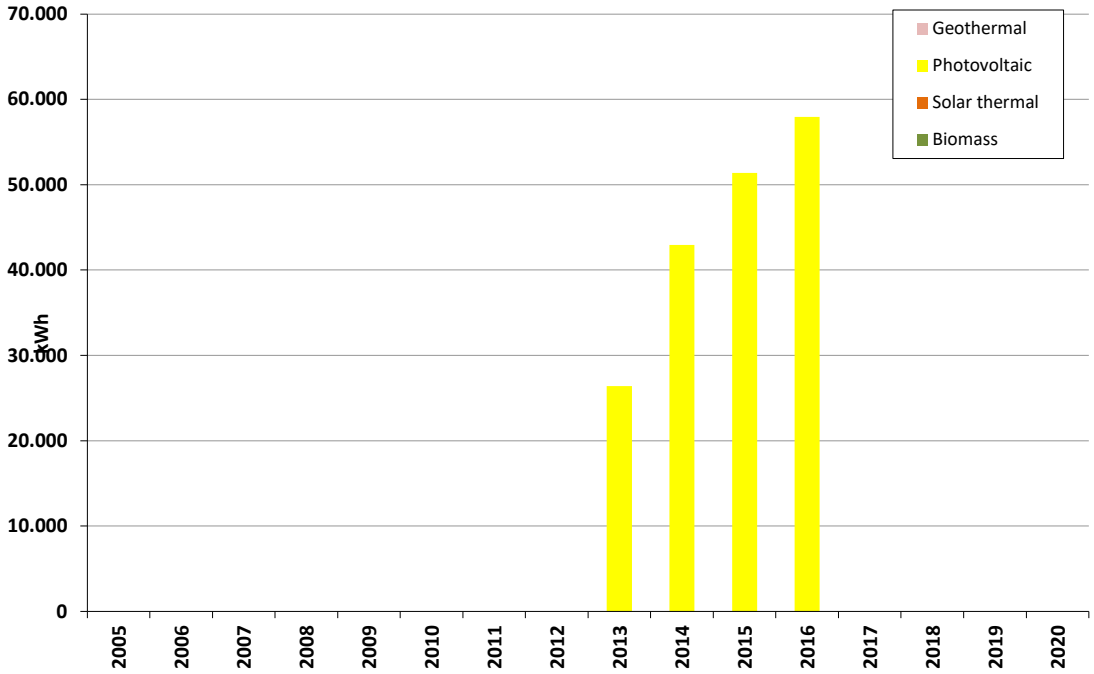
	2005	2015	Tendency (% difference respect baseline year)
Total production (kWh)	0	322.259	-



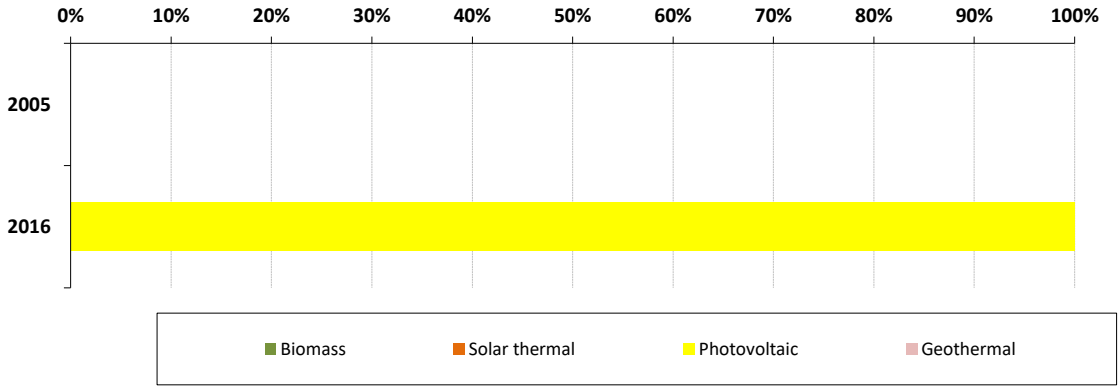
Assessment

At the municipal level, local energy production was 322.259 kWh in 2015 and 100% was photovoltaic energy. Keep in mind that it represents 0.05% of the energy consumed in Viladecans.

Renewable energy in the Town Council



	2005	2016	Tendency (% difference respect baseline year)
Total production (kWh)	0	57.950	-



Assessment

The Viladecans Town Hall has 4 installations of photovoltaic solar panels in municipal facilities: Enxaneta, Àtrium, Biblioteca and Cúbic. Of these, the Enxaneta School generates energy both for self-consumption and for sale on the network, while the other three facilities only make the sale on the net. The total energy produced with photovoltaic solar panels in 2016 was 276,800 kWh. 79% of the energy produced was sold to the network and the remaining 21%, which corresponds to the energy obtained in the Enxaneta school, was used for self-consumption.

Strengths and weaknesses

Strengths

1. 93% of the population live in the urban nucleus
2. Large variety of ecosystems and 60% of protected natural area
3. Road network and adequate rail
4. Decrease of 24% of water / inhabitant consumption between 2005 and 2015
5. Studies using regenerated waters
6. Decrease in the generation of waste per capita
7. Constant optimization of the collection service
8. Decrease in consumption and emissions per capita
9. Improvements in energy efficiency and increase in the number of renewable installations
10. Improvements in the efficiency and light intensity of public lighting
11. Increase in the number of solar photovoltaic and thermal installations

Weaknesses

1. Increase in the land built in recent years by the increase of the industrial sector
2. 33% of journeys with private vehicles
3. Lack of connection of bike lanes
4. Percentage of low selective collection
5. Little direct influence on the part of the city council on the domestic sector
6. Lack of renewal of the municipal fleet of vehicles
7. Limited investment capacity in renewable energies
8. Unfavorable regulations for photovoltaic installations to connect to the network

Conclusions

With the analysis of the data available for the PAESC area (2005-2015), it is verified that both the energy consumption and the emissions of the municipality have a decreasing trend. Consumption presents a reduction of 9% and emissions of 22%. The city council area also presents a decreasing trend with a reduction of emissions of 12% during the period 2005-2016.
The reduction of emissions can be due to the presence of vehicles and technologies in lighting and air conditioning more efficient. On the other hand, it is possible that the reduction of consumption in some sectors is influenced by the economic crisis started in 2008.
Therefore, the municipality continues a good tendency to move towards the achievement of the objectives of the Covenant of Mayors, but it is necessary to act to ensure that the objective of a 40% reduction in GHG emissions per year 2030. In this sense, the defined plan establishes actions aimed at increasing energy efficiency, the presence of renewable energies, improvements in mobility and reduction of emissions linked to the treatment of waste in the municipality. Specifically, 59 actions have been defined through which it is expected to achieve a 25% reduction by 2020 and 40% by 2030 compared to 2005.