

SUSTAINABLE ENERGY ACTION PLANS IN THE PROVINCE OF BARCELONA

These **Preliminary Results** were produced by Barcelona Provincial Council's Environment Department using data available as at September 2009 from the Sustainable Energy Action Plans developed under the European Commission's Covenant of Mayors in the province of Barcelona.

PRELIMINARY RESULTS
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Covenant of Mayors in the province of Barcelona



The **Covenant of Mayors** is a European Commission Directorate-General for Energy and Transport (DG TREN) initiative, the aim of which is to go beyond the EU's commitment of reducing CO₂ emissions and greenhouse gas emissions (GGEs) that accelerate climate change before the year 2020. So far, over 630 municipalities in 35 countries both in and outside the EU have signed up to the Covenant of Mayors.

Barcelona Provincial Council's Environment Department encourages municipalities to sign up to the Covenant of Mayors and offers them technical and financial support for the development of **Sustainable Energy Action Plans (SEAPs)**. As at August 2009, **105 of the province's municipalities** had signed up to the Covenant. This figure accounts for 88% of the province's total population of 4,527,988 inhabitants. Of these municipalities, 69% have fewer than 25,000 inhabitants whereas 21% have more than 50,000 inhabitants.



As at September 2009, nearly half of the Sustainable Energy Action Plans initiated in the province of Barcelona are being completed or have sufficient results to do an initial assessment of the state of affairs. These are the SEAPs of 44 municipalities ranging in population size from 300 to 200,000 inhabitants. The emissions assessment process of these SEAPs provides data as shown in the following table:

EMISSIONS AND PLANNED REDUCTION (tonnes CO _{2eq})	
Total emissions of 44 municipalities (2009)	4,962,977
Estimated emissions for the 105 municipalities signed up (2009)	19,100,902
Planned reduction of the 44 municipalities by 2020	992,595
Estimated reduction of the 105 municipalities by 2020	3,820,180

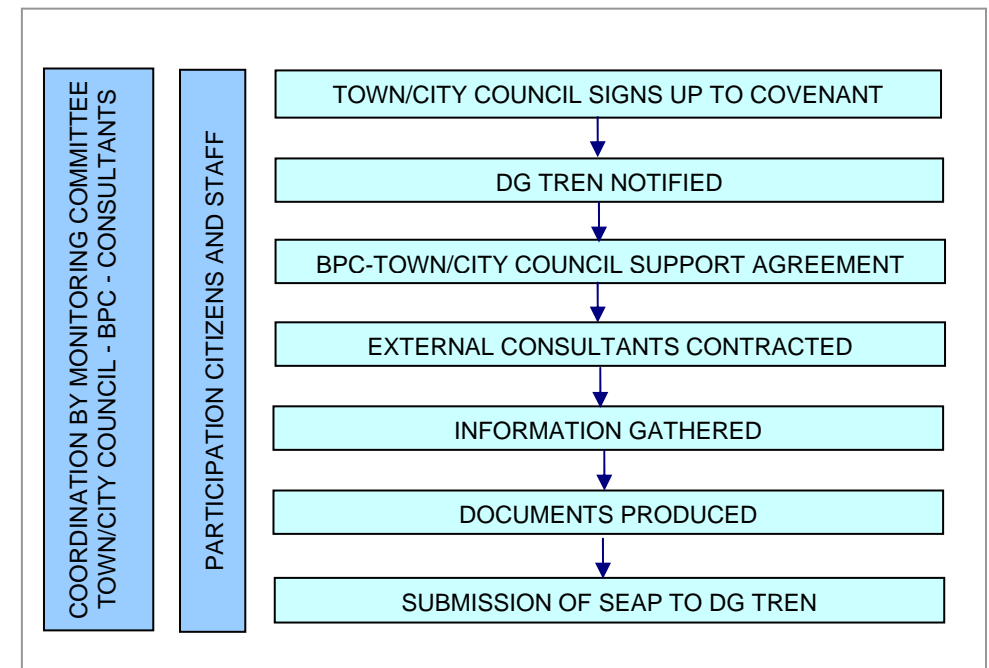
Own elaboration

A specific methodology for producing SEAPs

Barcelona Provincial Council has developed a specific methodology for producing SEAPs in the province's municipalities.

The methodological protocol includes signing a support agreement between each town or city council and the Provincial Council, contracting external consultants and providing financial support to defray expenses associated with the creation and formation of a monitoring committee to coordinate the process's development.

The production of SEAPs involves drafting Emissions Assessments, Diagnosis and Strategy Documents, Action Plans, Participation Plans, Monitoring Plans and the Final Report that is submitted to the European Commission's DG TREN. The whole process counts on civic participation and town or city council staff members.



SEAPs: a tool for the effective reduction of GGEs

SEAPs include GGEs produced by the direct activities of a town or city council: energy consumption for public lighting, facilities and vehicle fleets. They also include emissions on which a town or city council can take action, even indirectly: household sectors, services, transport, waste and water. They do not include industrial emissions, the primary sector, large transport infrastructure or absorption by drains.

Therefore, SEAPs mostly propose actions on diffuse emissions of GGEs, which in Catalonia amounted to 39,137,000 tonnes CO_{2eq} (2005) (25,000,000 in the province of Barcelona). For diffuse source sectors, the European reduction objective of 20% by 2020 means a total reduction of 7,830,000 tonnes CO_{2eq} (down to 31,310,000 tonnes CO_{2eq}), even though the Energy and Climate Package applicable to Spain only foresees a 10% reduction in these sectors.



The 2008-12 Framework Plan for Climate Change Mitigation in Catalonia produced by the Government of Catalonia's Ministry of the Environment and Housing foresees that diffuse emissions will be reduced to 35,546,000 tonnes CO_{2eq} by 2012: a reduction of 6.6% on 2005 emissions. This involves a reduction of 370,000 tonnes CO_{2eq} every year from 2005. Therefore, the estimated reduction for the 105 municipalities of the province of Barcelona signed up to the Covenant would account for almost half (48.8%) of Catalonia's diffuse emissions reduction by 2020. This involves an annual reduction of 255,000 tonnes CO_{2eq}, or two thirds of the Framework Plan's objectives.

Then, to achieve the initial objectives of the Kyoto protocol – an increase of 15% by 2012 in relation to 1990 (22 years) – Catalonia would have to reduce diffuse emissions to 30,677,000 tonnes CO_{2eq}, a reduction of just over 20% (21.6%). This is the same objective that the local community is now taking on as its own, to be achieved in just 15 years, between 2005 and 2020.

The ambitious nature of these objectives is reflected in the value of the commitment that the local community is making through the Covenant of Mayors and the leadership role that Barcelona Provincial Council's Environment Department is playing.

Emissions per inhabitant are within the mean range for Spain and Catalonia

The emissions-per-inhabitant values have been assessed for every town and city, both for the municipality as a whole and for each sector falling within the scope of the SEAPs. The results obtained are as follows:

EMISSIONS PER INHABITANT (tonnes CO _{2eq} /inhab.) within scope of the SEAPs	
Emissions of 44 municipalities within scope of the SEAPs	4.43
Mean emissions of 44 municipalities	6.35
Mean emissions in Spain ¹	7.70
Mean emissions in Catalonia ²	6.70

1. National Inventory (CCOO & World Watch)
2. Inventory and National Plan for Climate Change Mitigation in Catalonia
1 and 2: The data were recalculated for the scope of the SEAPs to make them comparable.

These data allowed the level of emissions per inhabitant in both Catalonia and Spain to be compared, and it was found that the province's municipalities are slightly below the reference values.

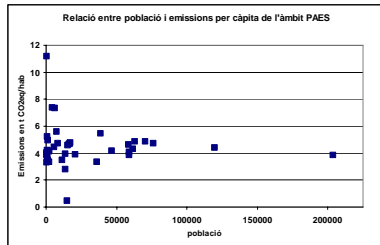
The direct contribution of town and city councils' activities to emissions as a whole has also been considered: public lighting, buildings and municipal vehicle fleet. Even though the contribution in some cases is significant, the mean value is around a discreet 3%, a value that contributes just over 0.2 tonnes on average per inhabitant.

TOWN AND CITY COUNCIL EMISSIONS (%) and (tonnes CO _{2eq} /inhab.)	
Emissions of the town or city council as a percentage of municipality's total	3.09
Mean town or city council emissions per inhabitant	0.22
Mean emissions generated by municipal lighting per inhabitant	0.07

Own elaboration

Likewise, in the production of SEAPs, a partial contribution has been calculated for sectors falling within their scope, such as public lighting.

Strategies adapted to each type of municipality need to be foreseen



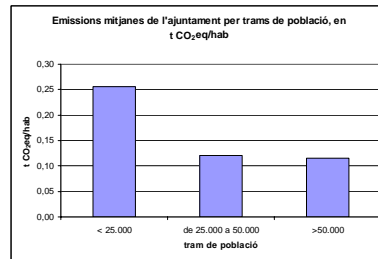
Among the municipalities that have signed up to the Covenant in the province of Barcelona, small and medium-sized towns and cities are highly represented. The mean emissions per capita by population size do not display any significant differences. However, the data is more uniform among large municipalities and more disperse among smaller ones.

Small and medium-sized municipalities also have a higher rate of town and city council emissions in comparison to municipalities as a whole. There are also noteworthy differences in the emissions of some sectors, which are very significant in relation to mobility and transport. This can be explained by the fact that the number of vehicles in small and medium-sized towns and cities is proportionally higher than in large ones.



One of the main conclusions that can be drawn from the initial results of the SEAPs that are under way is that there is a need to define two specific areas of action. The first corresponds to municipalities with fewer than 25,000 inhabitants where, due to social, financial and town-planning aspects, a special approach is required in each instance. The main feature of these municipalities

is that the levels of emissions per inhabitant attributable to town and city council activities are very high. One of the reasons for this is the fact that municipal energy consumption in large towns or cities is spread among a higher number of inhabitants. A high proportion of this consumption corresponds to services associated with municipal services, like public lighting, sports facilities and schools. The second corresponds to medium and large towns and cities, which have more uniform total emissions levels and characteristic environmental situations and problems.



The impact is mainly on actions falling within a municipality's mandate

The challenge for Sustainable Energy Action Plans is to achieve quality services for all inhabitants with minimal GGEs, whatever the size of the town or city.

The strategy needed to achieve that is the strategy outlined by the actions considered in the SEAPs.



Many SEAPs fostered in the province of Barcelona have been completed or are in the process of designing actions, and this allows us to draw some conclusions on the approach that town and city councils are taking in relation to their SEAPs.

Most of the proposed actions (44%) correspond to those affecting municipal buildings, and included in this section is power generation, mainly photovoltaic electricity.



The following actions also weigh fairly heavily: public lighting (9%), the household sector (9%) and transport and mobility (9%). Other areas of action include waste management, the water cycle, town planning, building and maintenance, public procurement of goods and services, civic participation and environmental awareness and education activities.

Generally speaking, 75% of the actions correspond to issues falling within a municipality's direct mandate. Of the remaining 25%, 18% correspond to actions associated with mobility and notably with the household sector.