

Sustainable Energy Action Plan of Castellar del Riu
Date of adhesion to Covenant of Mayors: 18/03/2010

| | | |
|-----------------------------------|--------------------|-----------------|
| Population | 147 | inh. |
| Seasonal population | 389 | inh. |
| Total surface area | 32,74 | Km ² |
| Urban land | 0,39 | Km ² |
| Urban waste production | 1,20 | kg/cap.day |
| Water consumption | 171,20 | litres/cap.day |
| Energy consumption | 11.187,84 | kWh/cap. |
| Type of municipality ¹ | Residential | |

¹ Industrial, rural, touristic...

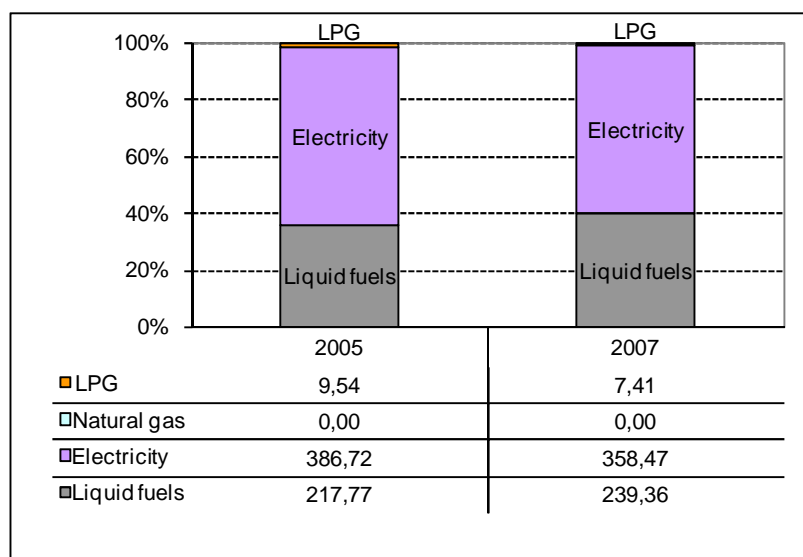
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1 Emission assessment

1.1 General evolution of the municipality considering all sectors

1.1.1 Emissions per sources



Source: ICAEN (Catalan Institute of Energy), 2010

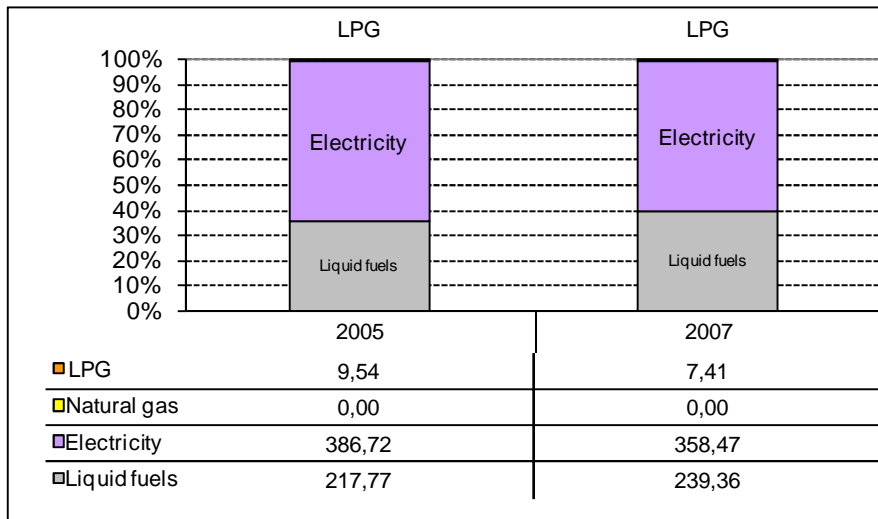
LPG: Liquefied Petroleum Gas

1.1.2 Municipality's total emissions

| | 2005 | 2007 |
|----------------------------|--------|--------|
| Total tCO ₂ eq. | 668,98 | 639,77 |
| tCO ₂ eq. /cap. | 4,40 | 4,47 |

1.2 General emission evolution in SEAP categories

1.2.1 Emissions per sources



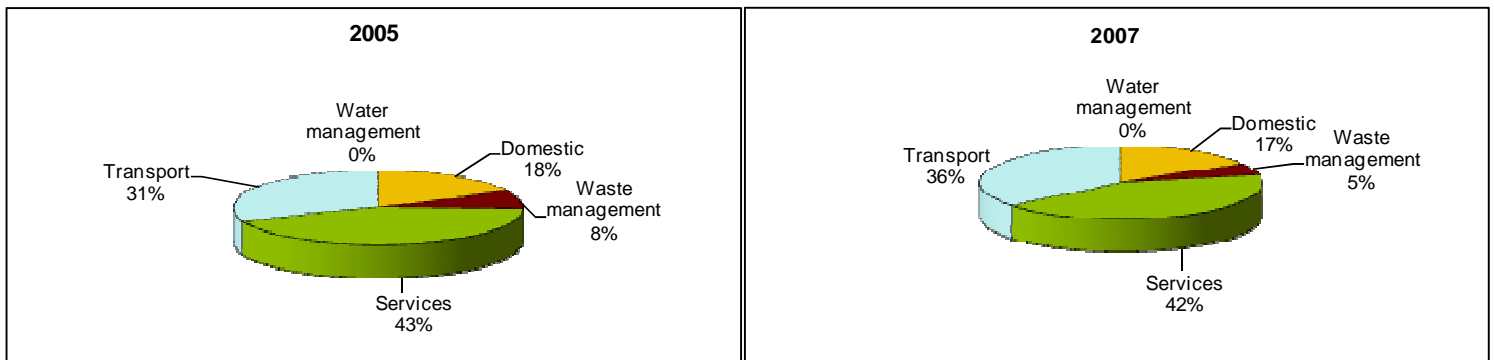
Source: ICAEN, 2010

1.2.2 Total SEAP emissions

| | 2005 | 2007 |
|----------------------------|--------|--------|
| Total tCO ₂ eq. | 668,98 | 639,77 |
| tCO ₂ eq. /cap. | 4,40 | 4,47 |
| Reduction percentage | 0% | +1,59% |

Source: ICAEN, 2010

1.2.3 SEAP emissions per sectors



Source: ICAEN, Town council of Castellar del Riu, 2010

1.2.4 Local energy production less than 20 MW (%)

| | | 2005 | 2007 |
|-------------------------|-------------------|------|------|
| Private sector | Renewable sources | 0,00 | 0,00 |
| | Other | 0,00 | 0,00 |
| Municipal public sector | Renewable sources | 0,00 | 0,00 |
| | Other | 0,00 | 0,00 |
| Other | Renewable sources | 0,00 | 0,00 |
| | Other | 0,00 | 0,00 |

Source: ICAEN, Town council of Castellar del Riu, 2010

1.3 Town council emissions

1.3.1 Town council emissions

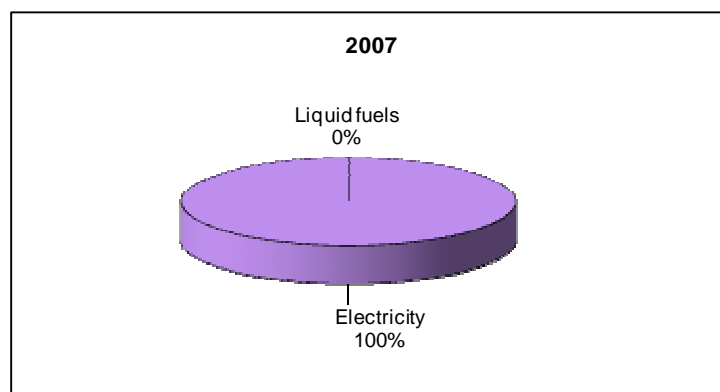
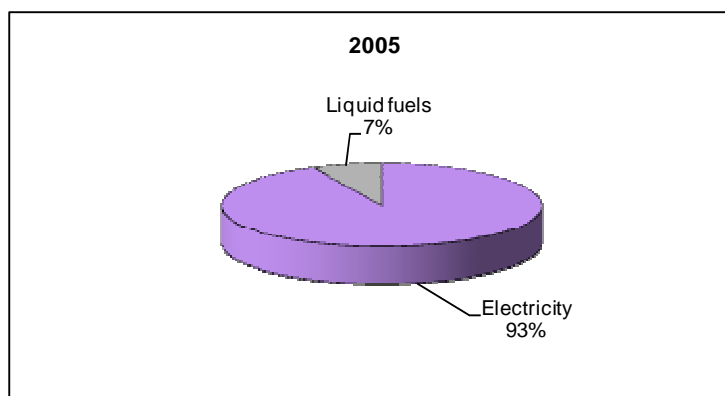
| | 2005 | 2007 |
|---|-------|-------|
| Total tCO ₂ eq. | 9,30 | 13,00 |
| tCO ₂ eq. /cap. | 0,06 | 0,09 |
| % of the total municipality's emissions | 1,39% | 2,03% |

Source: Endesa, Town council of Castellar del Riu, 2010

1.3.2 Town council emissions per sources

| | 2005 | 2007 |
|-------------------------------|------|-------|
| Electricity | 8,64 | 13,00 |
| Natural gas | 0,00 | 0,00 |
| Liquefied Petroleum Gas (LPG) | 0,00 | 0,00 |
| Liquid fuels | 0,66 | 0,00 |

Source: Endesa, Town council of Castellar del Riu, 2010



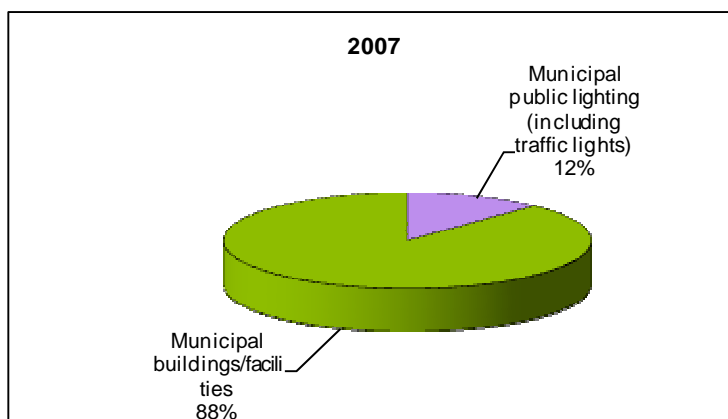
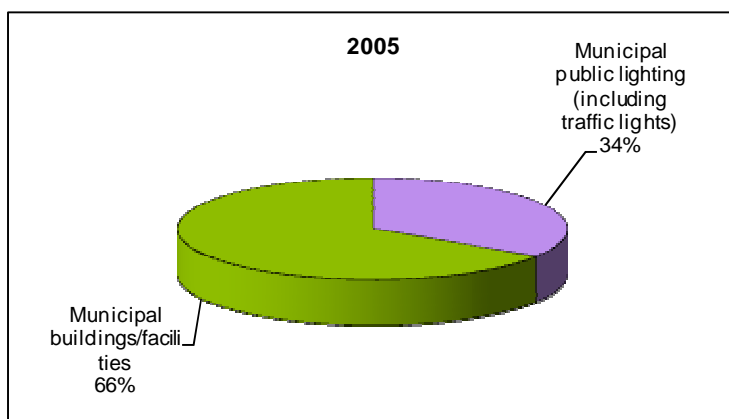
Source: Endesa, Town council of Castellar del Riu, 2010

1.3.3 Town council emissions per sectors

| | 2005 | 2007 |
|--|------|-------|
| Municipal public lighting (including traffic lights) | 3,18 | 1,58 |
| Municipal buildings/facilities | 6,12 | 11,42 |
| Municipal fleet | 0,00 | 0,00 |
| Outsourced services fleet (*) | 0,00 | 0,00 |
| Public transport | 0,00 | 0,00 |

Source: Endesa, Town council of Castellar del Riu, 2010

(*) The waste transport emissions are included in the Waste management sector of the SEAP emissions



Source: Endesa, Town council of Castellar del Riu, 2010

1.3.4 Highest consumers of municipal buildings/facilities (%)

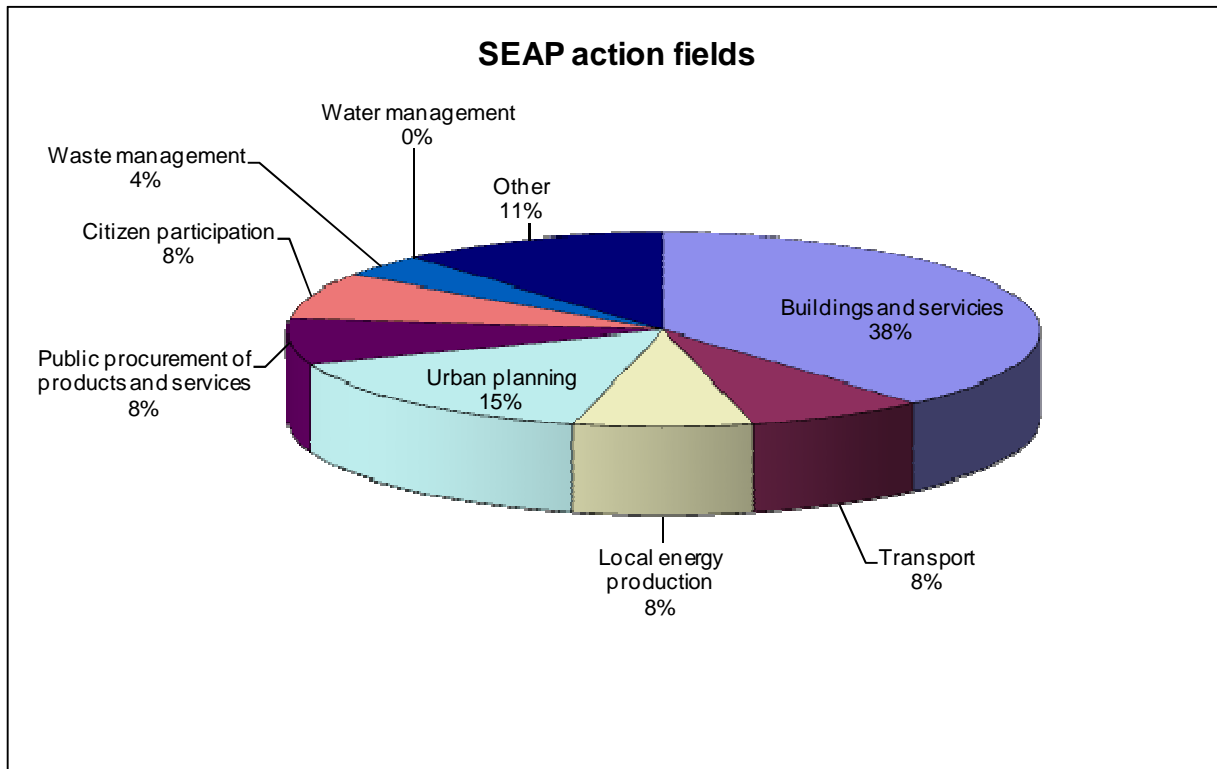
| Highest | Buildings/facilities | 2005 | 2007 |
|---------|---|--------|---------|
| 1 | Town council building (Espinalbet) + Civic Center (*) | 92,97% | 100,00% |
| 2 | Old Town council building (Espinalbet) | 7,03% | 0,00% |
| lowest | | | |

Source: Endesa, Town council of Castellar del Riu, 2010

(*) The town council building and civic center initiated full operations in 2006

2 Action plan

2.1 Selection of action fields²



Source: Actions of the SEAP, 2010

| | |
|---|---------------|
| SEAP emissions reduction target >20% (%) | 44% |
| SEAP emissions reduction target (tones) (*) | 239,35 |
| SEAP emissions reduction target (tones/capita) | 1,56 |
| Number of actions of the SEAP | 26 |

(*) there are 9 actions that haven't been quantified, but they will contribute to emission reduction therefore the final reduction will exceed the established target (20%)

² % of the number of actions for each SEAP action field

2.2 Key elements of the SEAP

| SECTORS & optional fields of action | Energy saving target per sector [GWh] in 2020 | CO ₂ reduction target per sector [kt] in 2020 | Actions/measures per field of action | Responsible department, person | Implementation [start & end time] | Estimated costs per action/measure | Expected CO ₂ reduction per measure [kt/a] |
|---|---|--|--|--|-----------------------------------|------------------------------------|---|
| BUILDINGS, EQUIPMENTS/FACILITIES AND INDUSTRIES: | | | | | | | |
| Municipal buildings, equipments/facilities | 14,72 | 81,57 | Improvement of the thermal behaviour, heating and lighting | Technician of maintenance and Department of Works and Services | 2010-2015 | 12064,40 | 3,38 |
| Tertiary (non municipal) buildings, equipments | | | Implanting thermal solar energy and renewing boilers | Department of Environment | 2010-2015 | 2500,00 | 28,49 |
| Residential buildings | | | Implanting thermal solar energy and renewing boilers | Department of Environment | 2010-2015 | 2500,00 | 48,10 |
| Municipal public lighting (including traffic lights) | | | Replacement of bulbs | Technician of maintenance | 2010-2012 | 960,00 | 1,59 |
| TRANSPORT: | | | | | | | |
| Municipal fleet and outsourced services fleet | 5,25 | 1,43 | - | - | - | - | - |
| Public transport | | | Promotion of the region public transport | Department of Environment | 2010-2012 | 0,00 | 1,43 |
| Private and commercial transport | | | Promotion to share car | Department of Environment | 2010-2020 | 0,00 | - |
| LOCAL ELECTRICITY PRODUCTION: | | | | | | | |
| Hydroelectrical power | | | - | - | - | - | - |

| SECTORS & optional fields of action | Energy saving target per sector [GWh] in 2020 | CO ₂ reduction target per sector [kt] in 2020 | Actions/measures per field of action | Responsible department, person | Implementation [start & end time] | Estimated costs per action/measure | Expected CO ₂ reduction per measure [kt/a] |
|---|---|--|---|--|-----------------------------------|------------------------------------|---|
| Wind farm | | | Study a local wind farm | Department of Environment | 2010-2020 | - | - |
| PVs | | | Solar photovoltaic in municipal buildings and water tanks | Technician of maintenance | 2010-2015 | 445000,00 | 41,31 |
| CHPs | | | - | - | - | - | - |
| LAND USE PLANNING: | | | | | | | |
| Strategic urban planning | | | Improve energetic efficiency in urban planning revision | Department of Urban planning | 2010-2012 | 0,00 | - |
| Transport / mobility planning | - | 48,48 | - | - | - | - | - |
| Standards for refurbishment and new development | | | Implanting more sustainable energies: solar energy and local net of gas | Department of Works and Services and Environment | 2010-2012 | 1500,00 | 48,48 |
| PUBLIC PROCUREMENT OF PRODUCTS AND SERVICES: | | | | | | | |
| Energy efficiency requirements/standards | 11,59 | 5,03 | Included efficiency criteria in the public agreements | Department of Environment | 2010-2015 | 0,00 | - |
| Renewable energy requirements/standards | | | Renewable energy in the electricity market | Department of Economy | 2010-2020 | 0,00 | 5,03 |
| WORKING WITH THE CITIZENS AND STAKEHOLDERS (CITIZEN PARTICIPATION) | | | | | | | |
| Advisory services | 65,65 | 31,06 | - | - | - | - | - |
| Financial support and grants | | | Promotions of the electric and hybrids electric cars | Department of Economy | 2010-2020 | 915,00 | 31,06 |

| SECTORS & optional fields of action | Energy saving target per sector [GWh] in 2020 | CO₂ reduction target per sector [kt] in 2020 | Actions/measures per field of action | Responsible department, person | Implementation [start & end time] | Estimated costs per action/measure | Expected CO₂ reduction per measure [kt/a] |
|--|--|--|--|---------------------------------------|--|---|---|
| Awareness raising and local networking | | | - | - | - | - | - |
| Training and education | | | Diffusion of good energetic practices | Department of Environment | 2010-2015 | 5000,00 | - |
| OTHER SECTORS | | | | | | | |
| Waste management | | | Promote home composting | Department of Environment | 2010-2015 | 6000,00 | 30,46 |
| Water management | 16,90 | 30,46 | - | - | - | - | - |
| Other actions | | | Promote an energetic computability in the town council | Department of Environment | 2010-2020 | 5000,00 | - |
| TOTAL | 704.969,73 | 239,35 | | | | 481.439,40 | 239,35 |