NR.	SECTION	DESCRIPTION
0	**Photographs**	 
1.	**Title of the practice**	***Courses on efficient driving of vehicles (P1)***
2.	**Precise theme/issue tackled by the practice**	Economic and social development has generated a considerable increase in car use. This is associated with an increase in pollution and traffic congestion. These courses aim to reduce these negative impacts and promote more efficient and sustainable transport.
3.	**Objectives of the practice**	The aim of the course is to encourage a new way of driving passenger vehicles. Reductions in fuel consumption of close to 15% with respect to conventional driving can be obtained through this new way of driving.
4.	**Location**	- **Country:** Spain - **Region, district or county:** throughout the Region of Aragon - **Population:** 1,346,293 inhabitants - **Area:** 47,719 km² - **Population density:** 28.21 ppl/km² 
5.	**Detailed description of the practice**	
	Origin: • Families are directly responsible for 30% of the energy consumed in Spain. This consumption is shared equally between housing and cars. • Although private cars provide users with independence and freedom of movement, it should be noted that cars account for 15% of total final energy consumption in Spain. For every litre of diesel and petrol, 2.64 and 2.35 kg of CO_2 are emitted into the atmosphere, respectively. • Therefore, to meet the Kyoto Protocol agreements and achieve the objectives defined in European policies, the rational and efficient use of private vehicles is of vital importance. Timescale: • The driving courses were taught from October 2010 until August 2012. • A total of 731 courses on efficient driving have been scheduled. Around 2,400 students have been trained in the provinces of Zaragoza, Huesca and Teruel in 2011-2012.	

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• These courses have been organized within the framework of the Action Plan of the Energy Saving and Efficiency Strategy in Spain (PAE4 +) and the Energy Plan of the Government of Aragon 2005 - 2012 through the Institute for Energy Diversification and Saving (IDEA) and the Department of Economy and Employment of the Government of Aragon, in collaboration with CIRCE.

Bodies involved/implementation:

• Organized by: Ministry of Industry, Energy and Tourism of Spain and Department of Industry and Innovation, Government of Aragon.

• Collaborates: Research Center of Energy Resources and Consumption (CIRCE).

• Aimed at: General public with a driving license, concerned about the irresponsible consumption of energy and sustainable development.

Process and detailed content of the practice:

All driving courses are free. It is possible access them by contacting the CIRCE foundation or the Government of Aragon.

Each course lasts about four hours and three participants take part in each course. The course consists of several phases:

1. Welcome (10 minutes).
2. First round driving: Each student will drive the vehicle according to his or her own style. The instructor will accompany students (1 hour and 5 minutes).
3. A theory class will be given (1 hour). The instructor will explain the benefits of efficient driving versus conventional driving, the energy savings and the pollution reductions.

   Furthermore, the theoretical concepts and the ten keys to drive the car efficiently will be presented:

   • Start the car without touching the accelerator.
   • Do not use first gear for more than 2 seconds.
   • Do not exceed 2000 r.p.m.
   • To use high gears as much as possible when driving.
   • Maintaining a uniform speed.
   • Attempt to stop smoothly.
   • Whenever possible, stop the car without downshifting.
   • In prolonged stoppages, it is advisable to switch off the engine.
   • Always keep an adequate safety distance.
   • Try to maintain proper tyre pressure.
4. There will be a practical demonstration by the instructor using efficient driving techniques (20 minutes).
5. Second round driving: Each student will drive applying the new techniques that have been taught during the course (1 hour and 5 minutes).
6. Analysis and opinion (20 minutes).

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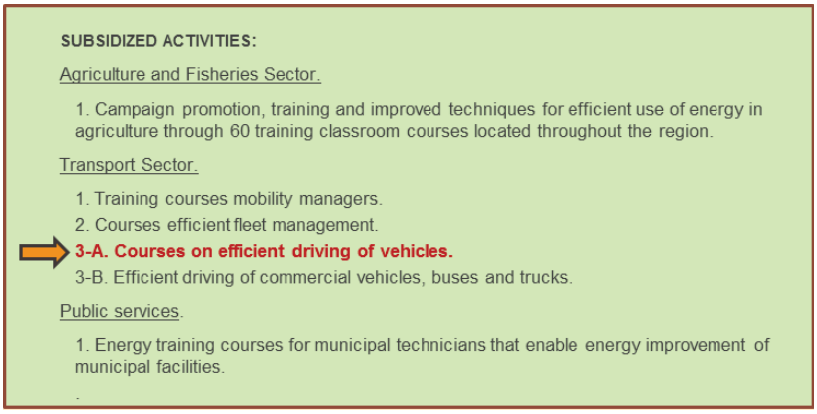
Legal framework:

There are two legal frameworks that propose this energy saving and energy efficiency measure.

- National level: 2008-2012 Action Plan for the Energy Saving and Efficiency Strategy of Spain (PAE4+). In July 2007, the Council of Ministers approved the Action Plan for the period 2008-2012. It aims to generate savings of 87.9 million tons of oil equivalent (equivalent to 60% of primary energy consumption in Spain in 2006) and it allows a reduction of CO_2 emissions to the atmosphere of 238 million tons.
- Regional level: Energetic Plan of the Government of Aragon 2005-2012. This Plan aims to ensure a quality energy supply, the competitiveness and the compatibility with environmental preservation. The promotion of renewable energy and energy improvement can contribute to economic and social development.

Financial framework:

2008-2012 Action Plan for the Energy Saving and Efficiency Strategy of Spain allocated 713,000 Euros to CIRCE to perform a series of activities, which include this good practice.



Use degree (%): users/total population:

Around 2,400 students have been trained in the provinces of Zaragoza, Huesca and Teruel in 2011 and 2012.

6. Evaluation

Possible demonstrated results (through indicators):

- Efficient driving permits achieving average fuel savings and CO_2 emissions reductions of around 15%.
- While driving, using higher gears considerably reduces fuel consumption.
- A single car at 4.000 r.p.m. makes the same noise as 32 cars at 2.000 r.p.m.
- A vehicle with higher cylinder capacity consumes more fuel.
- Fuel consumption increases significantly with increasing speed.
- Other factors that increase fuel consumption: the addition of external vehicle accessories, using air conditioning, driving with the windows down, 100 kg of extra

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	• Weight and lack of pressure in the tires. Possible success factors: • Significa nt reduction of pollutant emissions associated with transport. • The courses hav e been very successful in driving schools o r private c ompanies (General Motors). Difficulties encountered: The capacity of each course is ve ry limited (3 students), so the courses are expensive and are difficult to deliver to a lot of people.	
7.	**Lessons learnt from the practice**	With sim ple rec ommendations it is pos sible to a chieve a significant decrease in fuel consumption and a red uction of pollution.
8.	**Contact information**	Elisa Domínguez Phone: + 34 976 761 863 E-mail: infoaae4@unizar.es

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