Development of a Local Renewable Energy Planning as path to a Biodiesel Implementation Plan

First International Conference on Carbon Management at Urban and Regional Levels: Connecting Development Decisions to Global Issues - Mexico, 4 - 6 September 2006

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Introduction

As many municipalities in the Globe, Almada-PT, is also greatly interested in promoting the sustainable development, and more specifically, the rational energy use and in the promotion of the use of the local renewable energies resources.

For this purpose, Almada Municipality, in the figure of its Local Energy Agency - AGENEAL, joint the LETIT - Local Energy Technologies Implementation Project in a research consortium, that RGESD was also part.

The project objective was focused in support local governments in the assessment of new and renewable energy sources. The methodology include the development a ‘Toolkit’ to be used by the local authorities – without technical external assistance → self-help - to assess:

• Identifies possible energy assets at local Level;
• What technologies that could be used to developed the local assets;
• An assessment of the associated risks of each option
• Formatting an action plan for the development of such renewable resources

This poster do resume the results obtained with the application of those tools in order to help other municipalities to do the same valorization process for their local energy resources.

In the case of Almada, the main drives for this enterprise were the energy profile for the region (to tackle the fossil fuel demand on the transport sector) and the need to address the GHG profile for Almada (specially concentrated in the Transport sector - Almada - Portugal). Located at the Tagus River south margin, Almada had two main drives for this enterprise were the energy profile for the region (to tackle the fossil fuel demand) and the need to address the GHG profile for Almada (specially concentrated in the Transport sector).

This can be understood if one look to the energy consumption per sector, as shown in figure below, where transport, and its associated emissions are significant (based on 1997 data).

Methodology

As part of the proposed methodology were analysed the energy assets for Almada, how they would fit within the local priorities, what are the technologies to further develop those assets, what are the risks associated (to each asset/technology), and the main local level impacts associated.

To have a better understanding on the energy demand for Almada Municipality, the fuels consumed in the Municipality are shown in the graph below in the sales in 2003.

Results

The outcomes form the application of the Developed tools are here summarized, but a more comprehensive version can be seen at:

http://www.rgesd-sustcomm.org/LETIT/Tool_Box/Resources/PTU/LETIT_in_ALMADA.pdf

is analysis and the results obtained was based in the methodology developed in the project. In this project it was developed a tool to support local authorities in developing those assets for sustainable energy purposes.

Advantages

Within the many advantages, we would like to highlight:
• Environmental gain when used cooking oils is not thrown in the sewage.
• Reduction on energy dependency, as biodiesel displace imported fossil diesel
• Emissions reductions up to 3 112 ton/year the CO2 emissions.
• Reduction on the fuel invoice as the sale of the total biodiesel production
• Environmental gain when used cooking oils is not thrown in the sewage.
• Reduction on energy dependency, as biodiesel displace imported fossil diesel
• Emissions reductions up to 3 112 ton/year the CO2 emissions.

Action Plan Developed - Biodiesel from waste oil

Diesel fuel consumption does hold a great percentage in the fuels consumtion in the municipality (around 56 %), in this sense, one of the priorities of the Municipality must be the substitution of this diesel by biodiesel.

But the production of biodiesel by vegetable oils has some difficulties in the Municipality of Almada, as was pointed by the risk assessment tool, whose result is shown in the figure below.

Potential

The potential production in Almada Municipality by waste oils is around 1475 tep/year.

Would be small when compared to the diesel consumption (2.6%), but would fulfill the obligation imposed by the Directive 2003/30/EC, in the need to substitute 2% of the diesel consumption until 2005, and 5.75% until 2010, by renewable fuels.

The Tools

The Electronic tools for the process were made available at a free of access website, http://www.rgesd-sustcomm.org/LETIT/TK_ENG_LETIT.htm as can be seen in the figures below.

Table with a partial result from the application of the Assets identification tool. Mixing Buildings and Transport services as sources of energy saving programs.

Table with the main assumed impacts from the application of the proposed action plan in Almada region. A full version of the document can be seen at: http://www.rgesd-sustcomm.org/LETIT/Tool_Box/Resources/PTU/Action_Plan_ALMADA.pdf

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