Pre-Commercial Procurement for Smart Energy and Intelligent Mobility Solutions

VALLE D'AOSTA REGION, ITALY

Procurement objectives

Alcotra Innovation is a cross-border cooperation project between Italy and France. Research and open dialogue conducted by project partners identified the common societal need for innovative smart energy and intelligent mobility solutions.

Renewable energy sources tend to be intermittent and non-programmable and energy generation is not always simultaneous with consumption. Multiform and decentralised production of energy introduces technological challenges for electrical energy systems. One key aim of this procurement was to come up with new ways of solving these problems.

A parallel objective was to tackle issues related mobility. Specific aims included finding ways to monitor poor road conditions which can lead to collisions and congestion, along with facilitating the use of cleaner modes of transport such as buses or bicycles.

The Pre-Commercial Public Procurement Procedure was undertaken to meet these objectives and stimulate innovation.

Background

"Alcotra" describes the cross-border territory of Regions Rhône-Alpes and Provence-Alpes-Côte d'Azur in France and of Regions Piemonte, Liguria and Valle d´Aosta in Italy.

The Alcotra Innovation project began in September 2010 and lasts for three years. It is co-financed by the European Regional Development Fund via the Alcotra Italy-France Interreg Programme. The contracting authority is the Valle d'Aosta Region, a project partner of Alcotra Innovation.

The project aims to create and develop a culture of partnership and collaboration between innovators on both sides of the Alpine frontier, in order to improve their ability to compete effectively in international markets.

The overarching objective was to explore new solutions to currently unsustainable local and renewable energy systems and traffic congestion by testing prototypes in real life situations.

Criteria used

Subject matter:
Research and Development Services within the context of the Alcotra Innovation project.

Technical specifications:
Full scale development and testing of prototypes, installed on end user premises (using the "Living Labs" methodology) should be undertaken in order to meet one or more of the following needs in relation to smart energy:

- **Energy accumulation systems** (e.g. batteries, flywheels, pumping systems, thermal storage systems etc.) with the power to balance, at a local level, the production of energy from renewable sources with demand, with a view to improving the overall efficiency of the system, also with regard to the electricity grid.
- **Systems for monitoring, controlling** (incl. remotely) **and managing consumption and energy production of users characterised by complex** (multi-) **energy systems.** The aims are to inform users in real time of consumption and production trends, report system malfunctions, advise on how to improve system efficiencies, provide forecasts on the energy capability of renewable sources and measures to balance power consumption. Information should be provided on widely used equipment such as smartphones and tablets.
- **Smart management systems for service networks.**
  For example, the continuous monitoring of the water supply network to identify leaks in the main piping. A suitable sensor system would be installed to transmit data to a collection centre for the real time analysis and use in maintenance and repair operations, which could lead to significant savings of electrical energy used for pumping.

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In relation to ***intelligent mobility***:

- **Monitoring of the road networks** by means of sensors with the capacity to detect the environmental conditions of road surfaces, and/or accidental events that might change circulation conditions and/or traffic congestion. This should enable timely road works to be carried out and a traffic flow database to be created for planning purposes.
- **Innovative parking payment systems integrated with local public transport information systems.**
  For example a parking payment application for smartphones, designed for people who use intermodal transport. It would be linked with public transport monitoring and information systems and would provide travel details, the option to purchase tickets for public transport and suggested alternative journeys in the event of delays.
- **Vehicle sharing management systems.**
  An application example would be systems that enable the withdrawal and payment via smartphone of electrical bicycles under a bike sharing scheme, with the option of booking the bicycle online.

Results

9 bidders tendered for the pre-commercial procurement and in June 2012, the contract was awarded to:
- 2 economic operators in the technological area of smart energies;
- 3 consortia of economic operators in the technological area of intelligent mobility.

The activity is taking place in two phases, each lasting 6 months. So far the successful bidders have been focusing on:
Smart Energy
- Energy accumulation systems
- Systems for the monitoring, control and management of the consumption and production of energy.

Intelligent Mobility
- Monitoring of the road networks
- Innovative parking payment systems integrated with local public transport information systems
- Vehicle sharing management systems

The contracting authority were pleased by the number of declarations of interest made towards this pilot action, the first Pre-Commercial Public Procurement in Italy, as well as by the positive feedback from stakeholders about its capacity to address societal challenges and reinforce open innovation.

Environmental impacts

Intelligent mobility: Road transport vehicles are responsible for 26% of EU final energy consumption and 24% of CO_2 emissions. Greenhouses gas (GHG) air pollutants including HC and NOx are also emitted, along with small particulate matter (e.g. PM_{10}), which is associated with the aggravation of respiratory ailments.

Urban areas in particular suffer from air and noise pollution from vehicles due to heavy traffic and congestion. New and improved technologies aimed at reducing congestion and facilitating the use of public or alternative means of transport could play an important part in trying to solve these issues.

Smart Energy: Electricity generation based on fossil fuels is associated with high CO_2 levels. Alongside reducing levels of consumption, the use of renewable energies in the electricity sector is one of the most effective measures for achieving climate protection goals. Developing innovative solutions to problems caused by intermittent supply and overloading of the grid have the potential to improve the feasibility of local, renewable energy provision.

Lessons learned

The contracting authority emphasised the importance of a sound and consistent open dialogue with the market, citizens and end-users. It was also highlighted that attention must be given to meeting the provisions established in the EC Communication about Pre-Commercial Public Procurement (COM (2007) 799 14.12.2007), in order not to fall under a case of State Aid.

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