Action towards Resource-efficient and Low Carbon Cities in Asia

Asian Institute of Technology

ADEME

French Environment & Energy Management Agency

The program in a nutshell

There are 225 urban agglomerations in Asia with populations of 0.5 to 1 million, and 184 cities with populations of 1 to 5 million. These are expected to increase to 241 and 244 respectively by 2015. This will lead to higher resource use and environmental issues. The authorities and planners need to take initiatives to address resource use efficiency of cities and the greenhouse gas emissions.

The Asian Institute of Technology (AIT) with support from the French Environment and Energy Management Agency (ADEME) has initiated a two year **"Action towards Resource-efficient and Low Carbon Cities in Asia"** program with the objective to assist a number of small and medium cities of Asia in their efforts towards low carbon society through improved resource efficiency and promoting environmental sustainability.

At the end of the program, the participating cities are expected:

- to address resource depletion and greenhouse gas emission issues, promote low carbon activities, and to have the sensitivity to take into consideration the voices of their citizens, including the poor and women;
- to formulate policies and strategies that favor equitable and socially fair growth, and sustainable production and consumption practices;
- to acquire knowledge on techniques to introduce low carbon initiatives; and
- to use the Bilan Carbone™ tool, and implement few initiatives based on the analysis and outputs of Bilan Carbone™.

To achieve the above goals, the major activities that will be conducted in consultation with stakeholders and partners, include:

- training city authorities and other stakeholders on Territorial Climate and Energy Plan (TCEP) and "Bilan Carbone™" and their applicability to small and medium-size cities in Asia;
- pilot scale activities in selected Asian cities; and
- Information dissemination among a wider spectrum of cities.

Cities across the globe account for about 2% of the earth's landmass and host 3.1 billion (51%) of the world's population. In 1950, only 231 million (17.1%) people lived in urban areas in Asia. It has increased to about 1.8 billion (42%) by 2010. With more than two fifths of the world's population, Asia now has the largest number of urban dwellers. Cities as units of production and consumption have not only been consuming natural resources, but also degrading the environment through generation of waste and polluting land, water and air. Cities are estimated to contribute 19.8 Gt of CO_2 emissions from energy use in 2006 and by 2030 the amount will increase to about 30.8 Gt.

Why resource-efficient and low carbon cities?

As engines of economic growth and as centers of innovation, cities can help advance clean energy systems, promote sustainable transportation and waste management. As cities are also vulnerable to the impacts of climate change, they need to take bold actions to mitigate climate change and adapt to its impacts. Targeting cities as the first line of action would help countries simultaneously to address resource conservation and to progress towards low carbon societies. Addressing city level issues will help progress climate policy discussions.

Towards low carbon cities: TCEP and Bilan Carbone™ approach

To assist companies, administrations and local authorities in their pursuit of fighting against climate change, the French Environment and Energy Management Agency (ADEME) has developed methodologies and tools - TCEP (Territorial Climate and Energy Plan) and the "Bilan Carbone™" (Carbon Assessment tool).

Bilan Carbone™

ADEME's emissions accounting model, Bilan Carbone™ (Carbon Balance) method, serves as a tool to calculate the GHG emissions to assess the direct and indirect emissions produced by the different activities of all the stakeholders in a territory. The 6th version of the tool was launched in May 2009.

The Bilan Carbone™ module is made up of a series of spreadsheets, with associated utility manuals. A main Excel spreadsheet is used to calculate emissions, compare emissions between different years and assess the potential of various emission reduction actions. The associated utilities assist users in calculating the emissions in road transport, the cooling gas leaks from refrigeration and air conditioning systems, and simulating "what is at stake economically" over the entire range of activities studied. Over 2,000 Bilan Carbone™ diagnostics have been conducted in France and the tool is being adapted in the rest of the world.

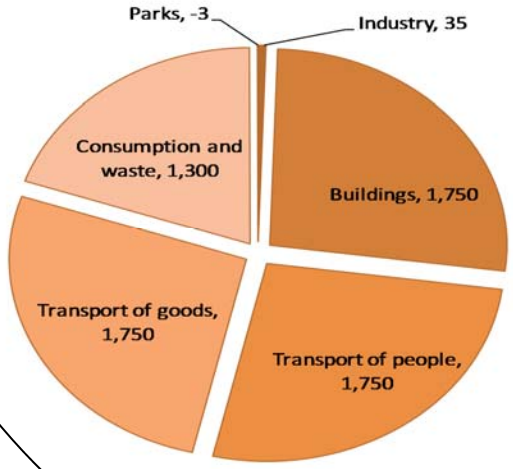
Territorial Climate and Energy Plan

The TCEP has three main objectives: First, mitigation of GHG emissions and reducing the territories' vulnerability to climate change. TCEP developed by ADEME for the local actors consists of tools for evaluating GHG emissions and identifying the path to progress. Secondly, it helps them in developing action plans based on the identified paths and their policies related to urban planning and management, transport, housing, etc. Thirdly, it provides for sharing information and mobilizing local population for action towards climate change mitigation and adaptation.

A Bilan Carbone™ diagnostic: Example of the city of Paris

Paris encompasses 3,000 hectares of green space, receives 30 million tourists annually, and accounts for 10% of the national GDP. The carbon balance study took into account all the major fluxes of consumption or movements: energy use, mobility of people and merchandise, consumption of Parisians and visitors, production of waste, etc.

Three major sectors account for 80% of all the emissions through the use of energy (see figure): energy consumed in buildings, transport of people, and transport of merchandise. Such estimations will be useful for the city authorities to provide right direction in setting policies that can help Paris to achieve resource efficiency and environmental sustainability, and in meeting the Kyoto Protocol obligations.



Emissions, tons equivalent of carbon in '000

Annual carbon balance for the city of Paris

For more information on Bilan Carbone™, visit:
http://www.ademe.fr/bilan-carbone-eng

An invitation to cities and interested partners

For the **"Action towards Resource-efficient and Low Carbon Cities in Asia"** initiative to succeed, partnership and collaboration among various stakeholders – city authorities and its service units, NGOs, businesses, civil society, donors' organization, etc. – are imperative. We look forward to work jointly on issues and areas of interest from stakeholders, who wish to contribute in this effort. Support for this program can be in the form of:

- supporting workshops and training programs to sensitize city authorities towards low carbon initiatives;
- assisting cities to carry out the diagnostic studies in consultation with urban stakeholders that allow to prioritize the action plan in the participating cities;
- consultation on the activities the cities would implement;
- assisting in implementing specific initiatives in the participating cities; and
- dissemination of program results and sharing of information.

Asian Institute of Technology (AIT)

For fifty years, AIT (www.ait.asia) has been serving as a regional hub for higher education and research in natural sciences, engineering & technology, management and societal development, corresponding to the environmental, economic and cultural dimension of sustainable development. Low carbon issues and its promotion (technology and policy) is an important focus area of training and research at AIT. Earlier, AIT has been the regional anchor institution for the Urban Management Program of UN-Habitat for the Asia-Pacific. AIT has also been a knowledge management center for the Sustainable Cities Program of UN-Habitat. AIT has been coordinating Asian Regional Research program on Energy, Environment and Climate, Asian Regional Research program on Environmental Technologies, Renewable Energy Technologies in Asia- A regional research and dissemination program, and Southeast Asia - Urban Environmental Management Applications program.

French Environment and Energy Management Agency (ADEME)

ADEME (www2.ademe.fr) is a key player in the area of sustainable development at the European and world levels. In close collaboration with its supervisory ministers and varied network, the agency is extending its expertise to emerging and developing countries in addition to industrialized nations. On a multilateral level, ADEME provides expert advice to French and European delegations, under the framework of the Climate Change Convention, the Sustainable Development Commission, the UNECE Transboundary Pollution Convention or the International Energy Agency Treaty. It takes part in large multilateral meetings and implementing the resulting decisions. ADEME participates in number of bilateral or decentralized cooperation programs, thereby assisting in the development of regional, national or local policies focusing on ways to improve energy efficiency, urban environment management, the use of renewable energy or access to energy in rural areas. It supports the development of policies in these sectors, and follows up on them with concrete actions.

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Action towards
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