

Terms of Reference
Study Group on: Energy for Mega Cities
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Introduction

The scale of present urban expansion, driven by migrations of the poor mostly in low and middle income countries, is unprecedented and places almost impossible constraints on all of the urban infrastructures that have come before. Energy systems, designed to last decades, are being overwhelmed on the time scales of years. Within 10 years projections are for nearly 500 cities with populations of more than 1 million people. Cities in Asia and Africa are most vulnerable, although Latin America is also at risk. Mega Cities, defined as 10 million or more inhabitants, are proliferating, and nowhere more so than Africa. The UN projects that by 2020, nine cities will have more than 20 million inhabitants. Metropolitan Tokyo already has more people than the entire population of Canada.

Objectives

The Study will focus on the demand for energy and the delivery of secure and reliable services in the growing number of large cities around the world (megacities, and cities of more than 5 million inhabitants). The main objective is to develop a concept for a secure energy supply and distribution system for large cities based on modern developing technologies, including the transport sector, in order to ensure a sustainable future. This will also include policy formulation and recommendations, suited to specific regions. A side benefit should be lessons learned that can provide the benefits of urban living to those in rural areas and thus relieve one of the main drivers of migration to cities and help achieve the goal of Accessibility for all.

Scope of Work

Energy efficiency and conservation will be highlighted as a necessary first step, before determining how much and what kind of energy is required. Security and reliability of supply is an important issue in large cities, as the impacts of supply disruptions in these centers of economic activity are severe, and can amount to tens of billions of dollars over time. Sources of energy related emissions will also be examined, particularly power plants and road transport. Solid waste as well as fresh water will be considered only as far as energy is concerned.

The Chair of the study will be from industry and conversant with urban energy issues and familiar with experts in this field. At least one workshop will be held in each of the 5 WEC regions.

Methodology and Timeline

The proposed time frame for the Study is 2050, when the world's population will reach 9 billion or so, and almost 80% are projected to live in urban areas. The Study Group will examine electricity supplies, transport fuels, retrofit costs, lack of infrastructure, and solutions such as city innovation partnerships. These will be examined on both a regional and global scale, with particular attention paid to urban needs tailored to specific regions. Finally policy actions and investment needs will be identified and communicated in the report.

Deliverables

A report will be delivered in March 2010 for publication.