Green Buildings for sustainable cities

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1 ABSTRACT

75% of the world's energy is consumed in cities.

40% of the world's energy is consumed in buildings.

The most interesting potential for CO2-reduction in cities from an economical point of view lays in the modernization of the builing infrastructure.

Making existing and new buildings to Green Buildings is one of the most effectice levers to meet the challenges of CO2 reduction in cities.

Siemens as endorser of the Green Building program of the European Union has already implemented several projects for the program. The objective of the presentation is to give a short overview of the frame conditions, the existing labels and – most important – show success stories.

2 INTRODUCTION

Cities cover less than 1% of the earth's surface but are disproportionately responsible for causing climate change.

Currently, around 50% of the world's population live in cities. Until 2030, 60% of the world's population growth will occur in cities

Cities and urban areas consume some 75% of the world's energy and are responsible for up to 75% of greenhouse gas emissions.

Cities directly or indirectly account for 60% of world's water use

So a majority of the world's energy consumption either occurs in cities or as a direct result of the way that cities function (eg through transport of goods to points of consumption in cities).

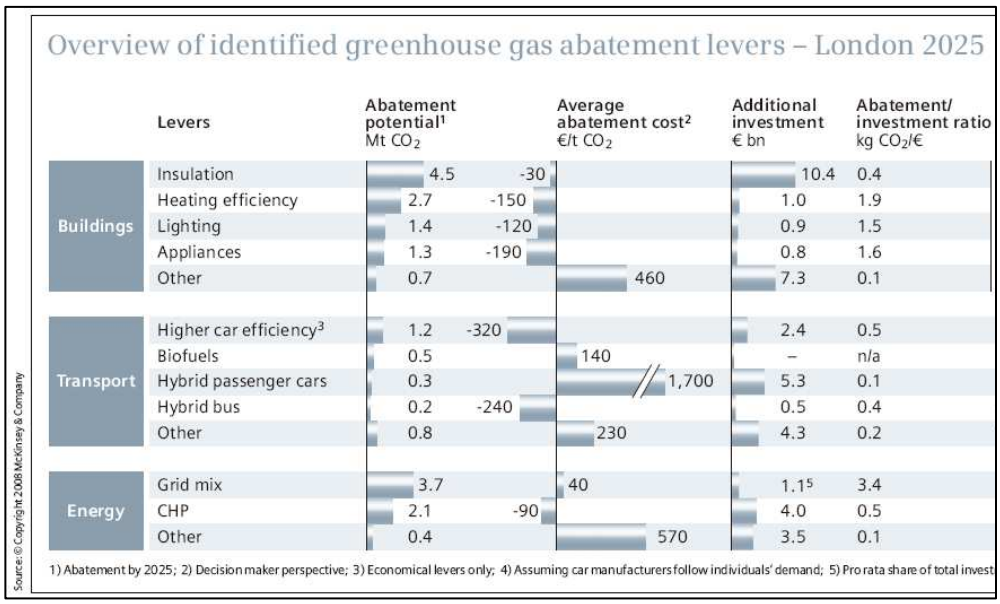
A study issued recently issued for the city of London showed the following facts:

More than half of the reduction potential lies within buildings. London could reduce a third of its green house gas emissions (10.6 Mt) until2025

Nearly 90% of this potential are based measures, that result in profitable lifecycle economics.

The installation of efficient lighting is the single most economic measure for buildings, resulting in 0.4 Mt of emission reductions, worth €270 per ton saved.

Commercial buildings may profit from a large set of measures, including the mornization of the infrastructure and optimization of building controls.



Energy saving measures in buildings could account for more than half of London's overall emissions reduction potential, cutting emissions by 10.6 Mt, or nearly one-third, by 2025.

Almost 90% of this carbon abatement potential is based on technological levers that will payback their initial investment through energy savings.

Businesses have a wide array of carbon-cutting options at their disposal, ranging from more efficient equipment to optimized building automation.

3 GREEN BUILDINGS AS SOLUTION FOR SUSTAINABLE CITIES

3.1 What is a Green Buidling?

A sustainable building, or green building is an outcome of a design which focuses on increasing the efficiency of resource use – energy, water, and materials – while reducing building impacts on human health and the environment during the building's lifecycle, through better siting, design, construction, operation, maintenance, and removal.

3.2 Which Green Building labels are known so far?

3.3 Best practice – Examples for Green Buildings

So far the Green Building Program of the European Union has 180 partners, which at least made one their buildings fulfilling the requirements of the program.

Siemens as one of the main endorsers encouraged several organizations to participate in the program. On the other side Siemens participates in the program as a partner by making its own buildings to Green Buildings.

4 REFERENCES

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