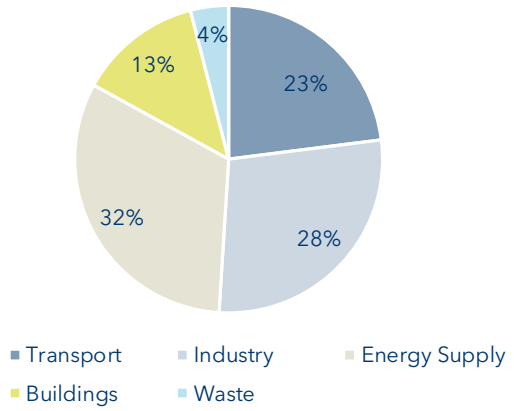
Green City

Theme facet 3: Ecologically sustainable infrastructure

DUE TO THEIR SIZE AND PERSISTENT GROWTH, METROPOLISES ARE RESOURCE GLUTTONS AND MAJOR EMITTERS OF CARBON DIOXIDE (CO_2) AS WELL AS OTHER ENVIRONMENTAL POLLUTANTS. ONLY CLEVER PLANNING CAN PREVENT AN ULTIMATE CALAMITY.

The challenge is enormous. Ever-expanding cities must ensure not only that their inhabitants can continue to organise their daily routine efficiently, but also that the quality of life is maintained and the living environment is protected. Especially in terms of the latter, some cities are more vulnerable than others due to their topography. But ultimately, none of them is served unless they can generate a positive energy/environment balance. This is easier said than done: simply take look at any construction site. As a consequence of relentless population growth, the Organisation for Economic Cooperation and Development (OECD) projects that global demand for raw materials will double to 167 gigatonnes per year, whereby the construction industry alone, with its need for basic materials like sand, gravel and limestone, will account for more than half of that amount. Annual demand for sand is expected to total more than 20 billion tonnes already in 2030. Since sand from rivers and the seabed is the only material suitable for construction purposes, the ecological damage to underwater flora and fauna is and will remain dramatic.

Proportion of CO_2 emissions by urban infrastructures



Sources: VP Bank, HSBC, U-Habitat

Going forward, awareness of this problem should have an influence on the way infrastructures of any kind are planned and built, as well and on their specific use, energy efficiency and environmental neutrality. A study by Schneider Electric found that 40% of all energy consumption in urban buildings is wasted. The European Union has also recognised the inefficiency of ageing urban structures. It therefore comes as no surprise that the recently agreed "European Green Deal" addresses this issue. The renovation of public buildings will receive the highest budgetary allotment (EUR 90 billion). A further EUR 50 billion will be made available in the form of attractively priced mortgage loans for ecologically sustainable buildings in the private sector. On the other side of the Atlantic, Democratic presidential candidate Joe Biden is frequently talking about a "climate and green recovery plan" in his campaign speeches and wants to mobilise huge sums of money for this purpose.

By taking the entrepreneurial approach, TopBuild has become the leading provider of insulation and sustainable housing in the USA. With its broad network and array of services, the company is already a supplier for close to 40% of all new buildings. It also participates in major projects such as the newly constructed "Freedom Tower" (on the site of the former World Trade Center) and the major airport in Orlando, Florida. Canadian company Stantec is the leader in the North American urban utility infrastructure segment, and also enjoys a fine reputation in other English-speaking countries. It has won awards for the design of ecologically sustainable education facilities and is a leader in recycling and water infrastructure.
The iron will to modernise electric power generation is most evident in Germany. The Energy feed-in act (EEG), which initially took effect in 2000, has been particularised several times and today devotes enormous sums to alternative energy production. A large part of this funding comes from the energy surcharge, which is mainly borne by private households, with private partnerships providing added financial backing. Germany-based Encavis is pursuing the latter route with its business model. The company's 85 wind farms and 191 solar parks are spread across Germany, France, Spain and Denmark. In total, they will generate some 2.5 gigawatts (GW) of green electricity by the end of 2020, whereas only 1.7 of that total is attributable to facilities owned outright by the company. Encavis' in-house asset management subsidiary administers the other 0.8 GW on behalf of institutional investors. This enables Encavis to tap more renewable energy sources than would be possible with its own operating business (NB: by 2025, Encavis' share is expected to increase to 3 GW). A new version of the Act, which supplants the original EEG that alternative energy operators depend on so much, shifts the focus from wind farms to solar power, energy efficiency and thus a further reduction of noxious emissions. Today, 70% of the energy required in urban areas comes from fossil fuels. Heating systems in inner-city buildings contribute more to air pollution than do diesel vehicles, which are often claimed to be the biggest sinners.
Hence, the sustainable construction, maintenance and operation of urban infrastructure constitute a colossal undertaking that requires enormous investments.

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Opportunities from sustainable urbanisation

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