City Story 9 Bangkok, Thailand

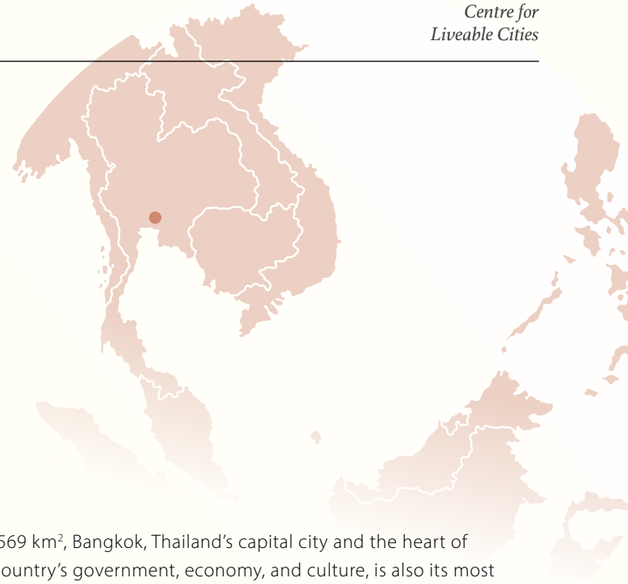
Towards a Low-Carbon City

By: Heng Su Li

Land Area: 1,569 km²

Population: 8,305,218

Population Density: 5,293 people/km²



At 1,569 km², Bangkok, Thailand's capital city and the heart of the country's government, economy, and culture, is also its most populous city. While its registered population stands at about 8 million, this figure swells to 10 million when accounting for non-registered residents, tourists and commuters.

As Bangkok grows as a metropolis, environmental challenges such as air pollution, wastewater and solid waste generation are becoming more complex. Climate change is also driving Bangkok's need to mitigate and adapt, while growing energy consumption by various sectors (e.g., transport and industry) can worsen air pollution and carbon emissions.

Determined to address these challenges, a team from the Bangkok Metropolitan Administration (BMA) led by Dr Supachai Tantikom, Advisor to the Governor of Bangkok, attended the TFLUGP in 2014. Following mutual exchanges with CLC's Resource Persons at the programme, the team gained key insights on their energy conservation plans. This included the importance of public-private partnerships through the example of Singapore's BCA Green Mark Scheme and educating the public on energy conservation practices through public campaigns. BMA also worked with relevant agencies to augment its energy conservation plans to develop strategies centered on energy conservation and transitioning to a low-carbon society.

Bangkok's (Thailand) skyline at night.

Image: Andreas Brucker on Unsplash

An infographic summarising the SGBMP.

Image: BCA

Singapore Green Building Masterplan (SGBMP) 2021

As part of Singapore's drive to achieve more ambitious sustainability standards, the SGBMP was launched by the Building and Construction Authority (BCA) in 2021, following consultations with industry stakeholders and the community. The SGBMP expands and builds upon the Green Mark Scheme, first introduced in 2005. It aims to deliver "80-80-80 in 2030", encompassing the following key targets:

- Green 80% of buildings by 2030, through improving energy performance in existing and new buildings.
- 80% of new developments to be Super Low Energy (SLE) from 2030.
- 80% improvement in energy efficiency for best-in-class green buildings by 2030.

Enhancing Energy Conservation

Bangkok's energy conservation strategies are undergirded by Thailand's energy plans. The 20-year Energy Efficiency Development Plan (2011–30) looks at enhancing the economic use of energy and improving energy efficiency. It outlines the plan to cut energy intensity by 25 per cent by 2030 from 2005 levels.[27] BMA followed the 10-year Alternative Energy Development Plan's framework (2012–21) to increase alternative energy consumption by 25 per cent in 2021.[28] Following a Cabinet Resolution (27 March 2012), BMA also plans to reduce energy consumption at government-owned buildings by 10 per cent.[29]

BMA has launched several projects to promote energy efficiency in Bangkok. Fluorescent lamps in 15 BMA-controlled buildings were replaced with energy saving bulbs, as were those in old streetlamps. The Building Energy Management System was also installed in all 50 district offices and the BMA developed an energy consumption database to track energy consumption.

New technologies to improve energy efficiency were also supported, such as the use of a low-velocity electricity mill project to produce wind energy and recycled biodiesel fuel from used vegetable oil. BMA has also pushed schools and markets to install anaerobic-digester tanks to convert organic waste to biogas fuel. BMA has also rolled out other alternative energy pilot projects at its facilities.

To strengthen institutional capacity in implementing projects and disseminating information on energy efficiency, BMA worked with agencies to train their officers. BMA also raised public awareness by encouraging its residents to participate in activities such as Earth Hour, tree planting and using stairs instead of elevators.

Bangkok's Low Carbon Society Network

Education is also a key part of Bangkok's energy conservation strategies. The 2012 Low Carbon School Network Project introduced the idea of a low-carbon school to Bangkok's youth and educated both students and teachers on energy efficiency.[30] Cooperating with the Foundation for Environmental Education for Sustainable Development Thailand, BMA sought to motivate students in participating schools to adopt environmentally friendly actions in their own daily activities.[31] School curricula also highlighted smart energy solutions to encourage positive behaviours towards the goal of creating a low-carbon society in schools.

Beyond schools, the Low Carbon Society Network was launched in 2014. This larger network includes department stores, hotels, office buildings, government offices, universities and more. It aims to spread awareness on how to adapt to climate change and reduce energy consumption in buildings. Through this network, involved groups can reach a common understanding and have greater understanding of the importance of energy conservation. This also encourages participation from all sectors and civil society. The project constitutes three main elements:

- Technical aspects, which include data collection and analysis.
- Campaign activities including seminars, workshops, trainings, public hearings, and a green building design contest.
- Promotional activities including a project kick-off press conference, booklet distribution, and dissemination of information through various media and the distribution of campaign promotion products.