

Phnom Penh, Cambodia



Mr. MEAN CHANYADA,

Vice Governor of Phnom Penh Capital City

H.E. MR. MEAN CHANYADA has currently served his terms in office at the Phnom Penh Capital City since 2013. He has responsibility and participated in community concerns in order to construct and strengthen infrastructure, safety, security, and public order as well as to encourage individuals to keep all of their accomplishments as their own. He has made significant and successful contributions to addressing

the impact assessment of urban growth in areas such as compensation work, resettlement, involving and negotiating with individuals who are effective in the development area, and public order management.

Mr. CHANYADA holds a bachelor's in Health and Science from University of Health Sciences and a master of Health from University of Health in Japan.

Carbon emissions reduction strategies by 2050 - Accelerating Climate Action through Urban Innovation

Achieving an environmentally sustainable construction sector in Cambodia has been a challenge to date due to the limited regulations and policies focusing on green buildings and limited sustainable construction knowledge among property developers and architect firms. Cambodia's updated first NDC is 158 pages long and outlines specific emission reduction targets within the construction sector: for example, a commitment to reducing brick production emissions by 44 per cent (1.799 million tons of CO₂ equivalent) by 2030, public awareness campaigns, and new building codes, enforcement, and certification for new buildings. The Ministry of Land Management, Urban Planning and Construction Cambodia with UNDP and the Global ABC also developed an 'NDC Roadmap for Low-Carbon, Climate Resilient Buildings and Construction' outlining priority action to increase the scale, pace and impact of climate action towards a zero-emission, energy-efficient and resilient buildings and construction sector.

Almost 37% of global CO₂ emissions have been contributed by building and construction sectors. Having understood that building is a primary source of emissions, it is critical to emphasize that the construction sector is a priority for low-emissions development, and the sustainable transition of the build environment will contribute to combating climate change in Cambodia, some 70% of urban infrastructure that will be needed to accommodate a fast-growing world is yet to be built.¹

According to the Cambodia's Long-Term Strategy for Carbon Neutrality, urban transportation will become more widespread and electric vehicle penetration will grow in the passenger vehicle fleet. Investment in rail development will start after 2030 Emissions will start after 2023. Emissions will be also reduced by more moderate use of electric vehicles, increased fuel efficiency for internal combustion engine vehicles and higher penetration of compressed natural gas (CNG) for interregional buses and for trucks. Under the LTS4CN scenario, 70 percent of motorcycles and 40 percent of cars and urban buses are expected to be electric vehicles by 2050.²

In Cambodia, the cooling sector consumed a total of 4,738 gigawatt-hours (GWh) of electricity in 2020, and this is expected to nearly double to 8,944 GWh¹¹ by 2040 in the absence of significant action towards sustainable cooling. National refrigerant consumption for all cooling sectors totaled 1,226 Metric tons (Mt) in 2020 and is based on products with high GWP as well as some ozone-depleting substances, such as hydrofluorocarbons (HFCs) and hydro chlorofluorocarbons (HCFCs). The annual GDP loss due to heat stress in Cambodia is in the range of an estimated US\$1.12 billion to \$1.26 billion, and the loss of crops and produce from broken links or a lack of infrastructure in the food cold chain is significant. The cooling sector contributed 6.27 million tons of carbon dioxide (CO₂) equivalent emissions in 2020. Moreover, space cooling in buildings was responsible for 37 per cent of total cooling sector emissions, followed by mobile air conditioning at 30 per cent and process cooling at 27 per cent.

¹ (Source: 2021 Buildings GRS)

² (Source: Long-Term Strategy for Cambodia Neutrality)

Total cooling emissions are expected to increase 1.8 times by 2030 and 2.7 times by 2040 from 2020 levels.

In 2022, the Cambodia's National Cooling Action Plan (NCAP) established to pave the way for a transition towards climate-friendly cooling by reducing cooling demand, improving the energy efficiency of appliances and promoting low-GWP refrigerants to help reduce GHG emissions. This roadmap focuses on five main areas: 1) Building Space Cooling, 2) Food Cold Chain, 3) Health care Cold Chain, 4) Mobile Air Conditioning, and 5) Process Cooling. The interventions under the NCAP are divided into three main periods: the short term (5 years), medium term (10 years), and long term (20 years).³

Ministry of Land Management, Urban Planning and Construction to prepare an NDC Buildings and Construction Roadmap for Cambodia to increase the scale, pace and impact of climate action towards a zero-emission, energy-efficient and resilient buildings and construction sector. In this regard, the country is developing a green standard for new buildings supported by capacity-building programmes for buildings professionals and the public.

Building are one of the six sectors which can collectively cut carbon emissions to limited temperature rise to 1.5 °C. The integration of green building concept into Cambodia's construction sector through sustainable city concept including site section, energy efficiency, water efficiency, construction and material as the national green building system and ending with behavior and decision toward the green building. Through the collaboration between the Department of Green Economy of NCSD, Ministry of Environment (MoE) Cambodia, the **Green City Strategic Plan for Phnom Penh 2017-2026 adopted** to deal with economic and natural disaster issue including the natural flood control and wastewater management systems in the city. Then, **Phnom Penh Sustainable Plan 2018-2030** adopted to strengthen the strategic plan in the city.

³ (Source: The Cambodia's National Cooling Action Plan, 2022).

Recently, the **Sustainable Strategic Plan 2020-2030 for Seven Secondary Cities** adopted to aims to promote green growth of strategically important secondary cities in Cambodia, selected as priority cities for green city development by the national government. The seven selected cities represent three city clusters: the coastal region (Sihanoukville and Kep), plain region (Kampong Cham, Suong, and Bavet), and Tonle Sap Lake region (Siem Reap and Battambang). In 2023, the **Environmental and Natural Resources (ENR) Code promulgated** which will be one of Cambodia's longest laws breaking new ground in a large variety of areas and would provide higher levels of reducing carbon emission and environmental protection, openness and accountability than is the case with virtually all of Cambodia's existing laws.⁴

Conclusion

To encourage sustainable development, Phnom Penh has been investing in projects of various sizes in accordance with the city's financial resources: By (a) expanding the amount of green space, (b) investing in energy-saving projects, such as smart lighting for cities, and (c) working with many stakeholders, the community's socioeconomic and living conditions would be strengthened. Coordinating urban-level planning, investment strategies, and options while taking into account the city's constrained financial capacity and development priorities is a critical problem in realizing the low-carbon vision.¹

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⁴ (Source: 2022, Roadmap for Energy-Efficient Buildings and Construction in ASEAN)