

Build Carbon Recycled City in post pandemic era

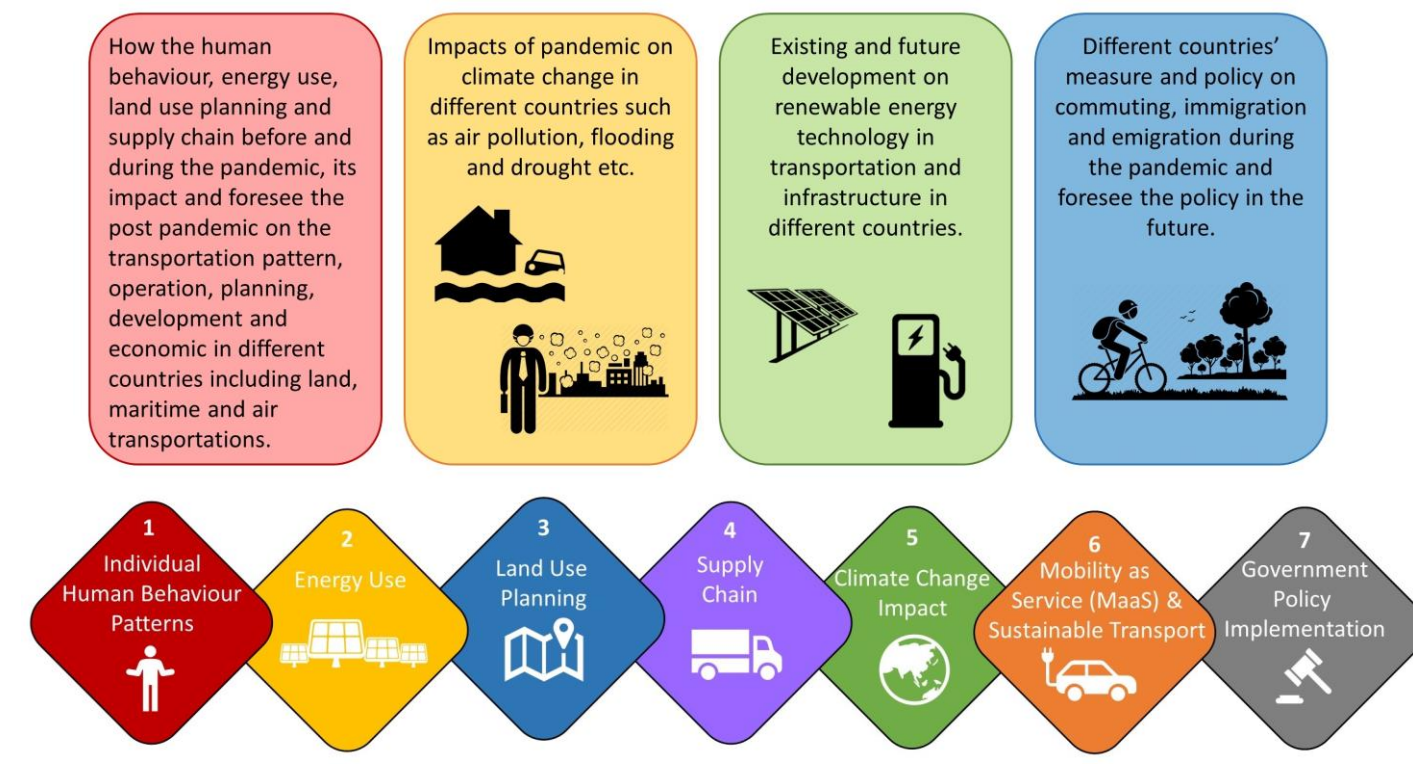
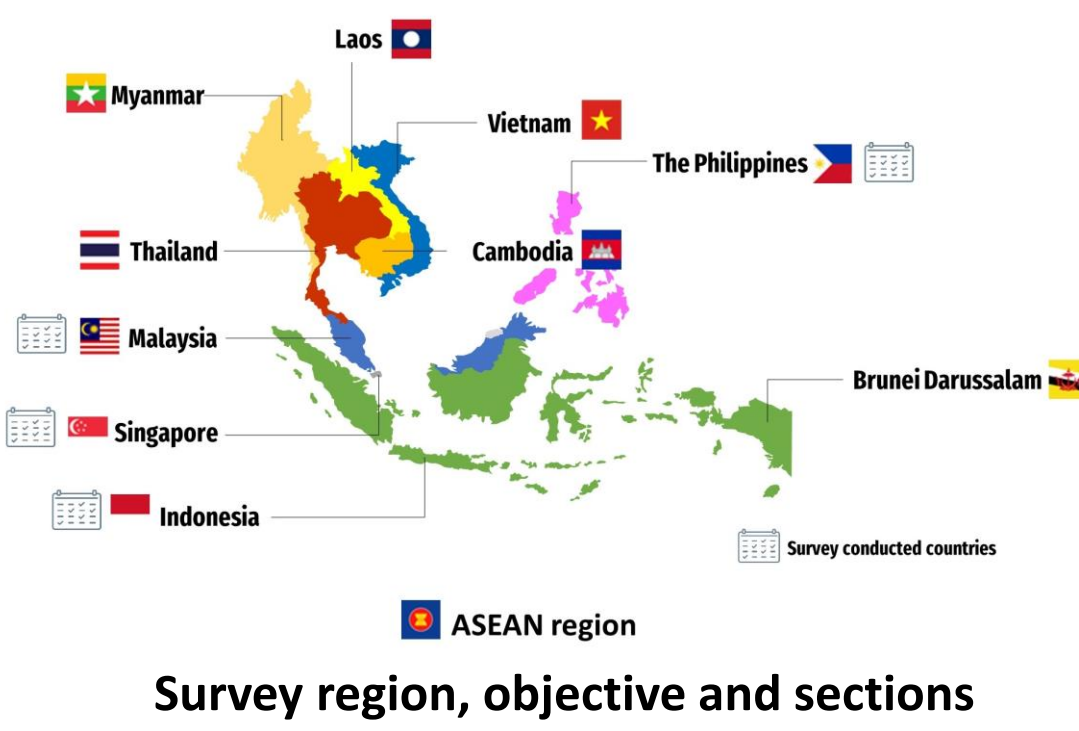
Siu Kiu Suen, Technical University Berlin

Introduction & Methodology

This project is a Phd project which is supported by CILT International and the papers related to this topic has been selected by different conference in ASEAN region and Transportation Practitioners Meeting (TPM) 2022 and 2023.

The idea of the project came from the Climate Change problem raised by IPCC, pandemic and energy and food crisis caused by the geopolitical crisis in Europe. Carbon dioxide which is one of the sources of climate change but it is inevitable. How could we transform it to energy and contribute to the society? Carbon capture, utilization and storage (CCUS) integrate with other renewable energy and the resources from nature could be the solution.

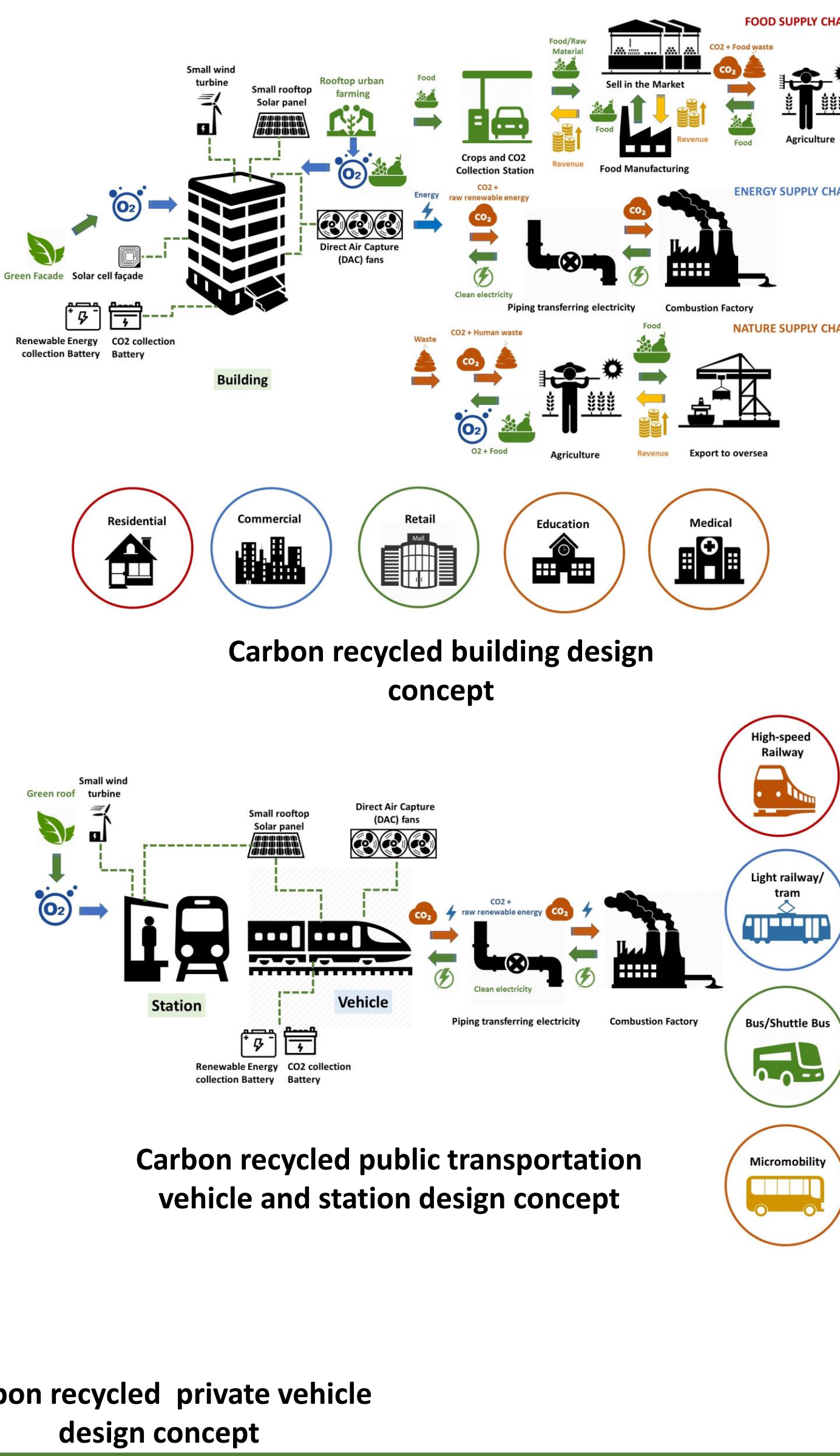
This project is supported by CILT International and there is an ongoing survey in ASEAN region to understand the possibility of building the Carbon-recycled city (CRC) in this region. As UK is well-experienced on CCUS technology, there is opportunity for both regions to cooperate on the building the CRC and exchange knowledge.



Building and Transportation Application

Carbon recycled city is a sustainable urban transport development model which the main concept is how to recycle the carbon dioxide from our existing environment and transform it to clean energy for supplying the building, transportation, energy facilities and agriculture.

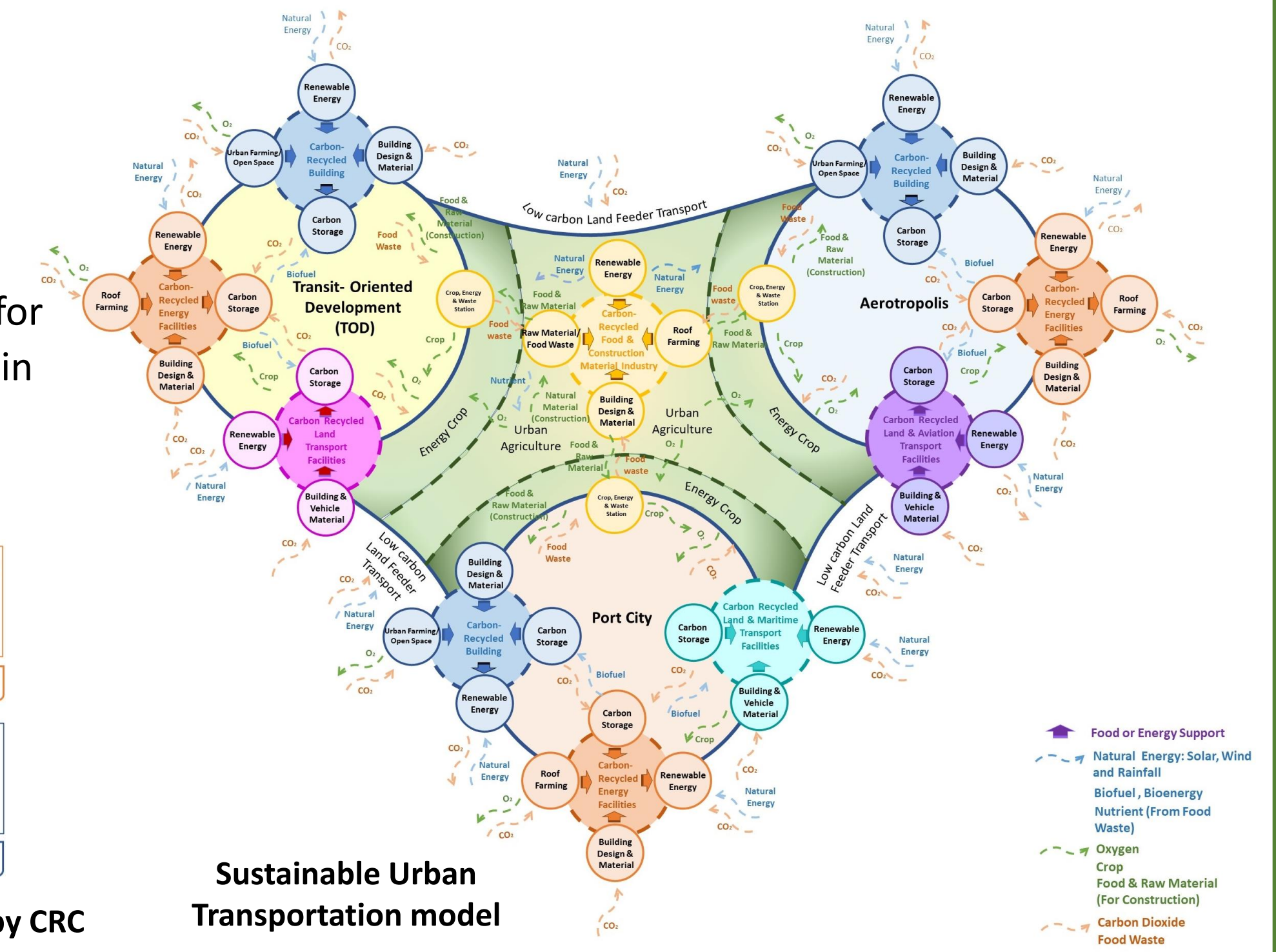
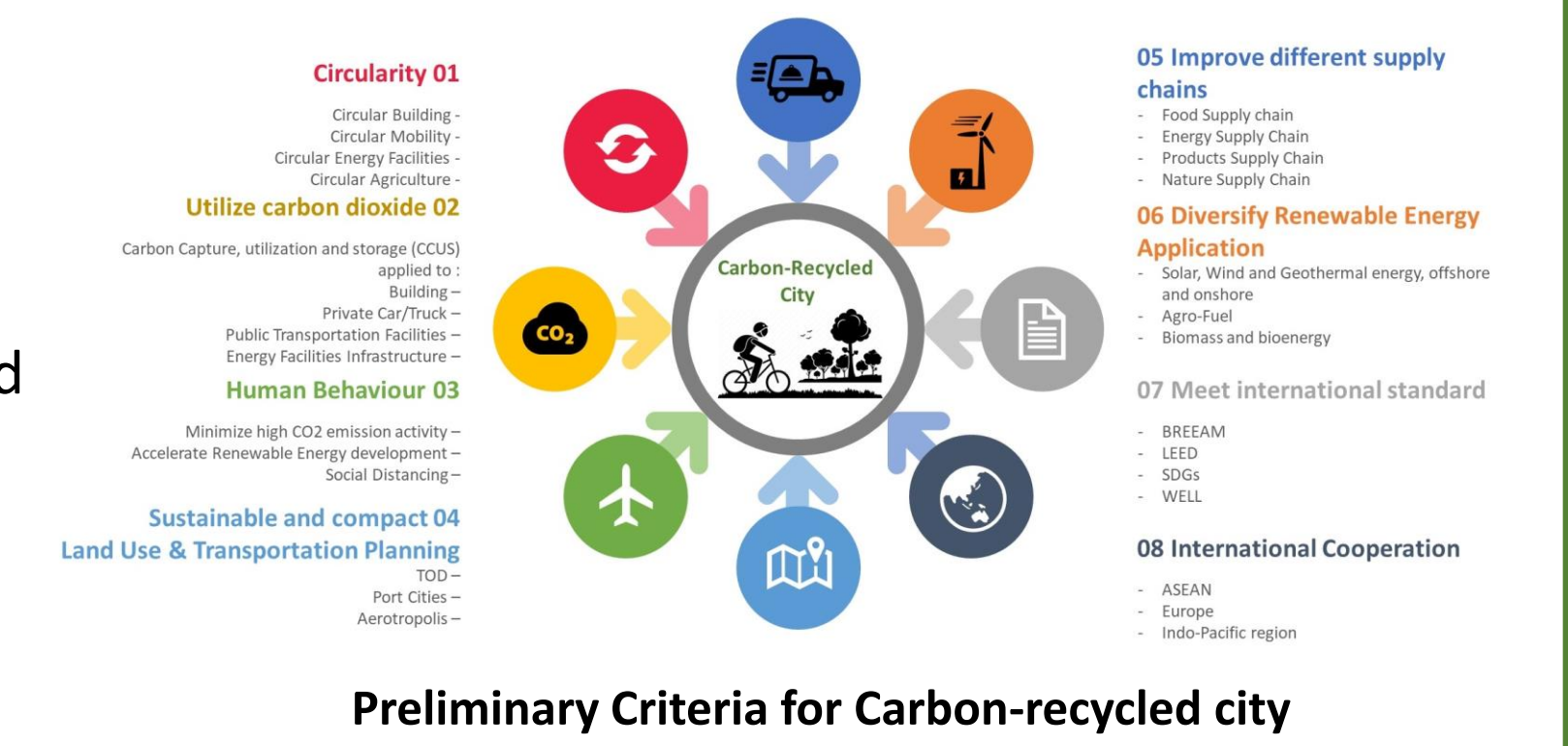
Carbon capture, utilization and storage (CCUS) technology is adopted which is well-known in the UK. But how could we implement it into our urban and transportation planning and the people could benefit directly from this technology? It could be integrated to the building, public and private transportation vehicles and stations design. They could become the CO2 collector in the city and the city could produce the raw material (CO2) to clean energy. Both regions, Europe and ASEAN, could further deepen the cooperation on energy generation technology and become the alternative energy supply to each region.



Integration with Land Use Planning

Sustainable urban transportation planning strategy could be adopted in the Carbon recycled city such as transit-oriented development (TOD), aerotropolis and sustainable port or waterfront. These could be integrated with both nature and man-made nature which could form a circular system in energy generation amalgamating with renewable energy technology.

Different international standard including the SDG will be used for evaluating the final proposed development model and criteria will be established for future urban development in both Europe and Asia.



Carbon-Recycled City Concept

