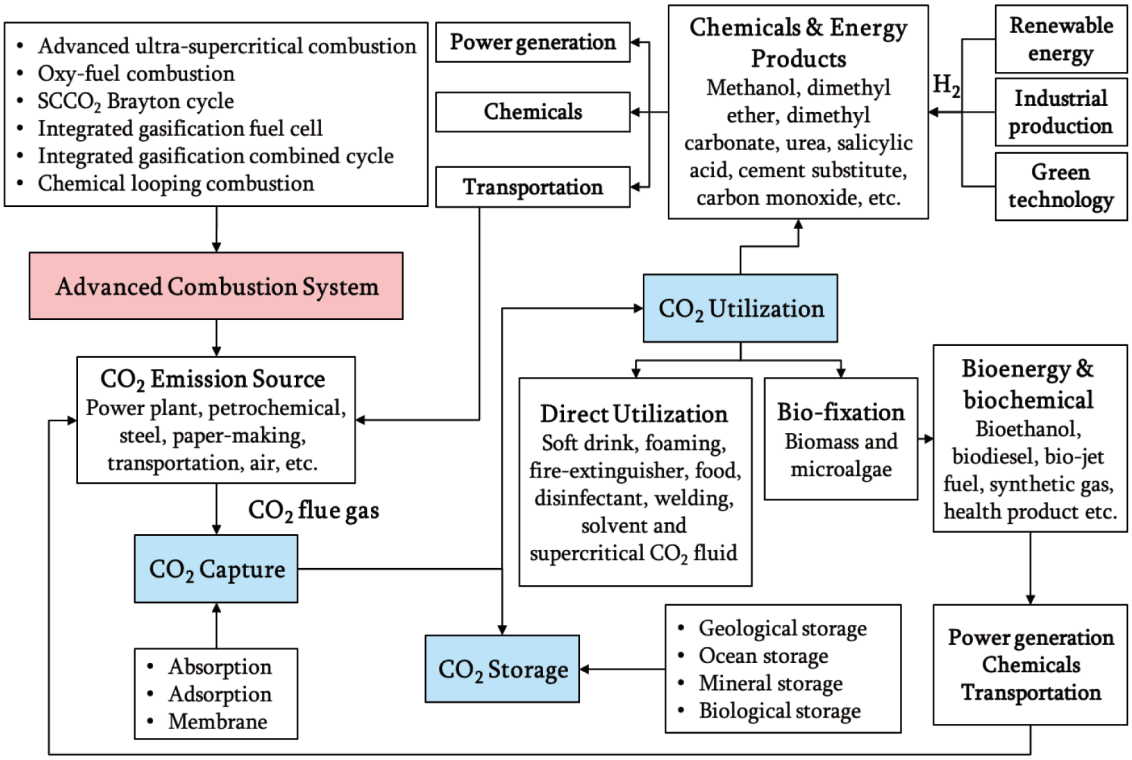
Carbon-Reduction & Clean-Coal Technologies for Zero-Carbon Emission

Taiwan imports about 98% of its energy of which 92% belongs to fossil fuels. As part of the efforts to advance the energy and industrial structures in the region to zero-carbon emission, the Carbon Reduction and Clean Coal Focus Center (CRCCFC) has been developing and commercializing new technologies for the capture, utilization, and storage of carbon dioxide, as well as advanced combustion and solid fuel cell systems. We welcome and look forward to technology and/or business cooperation worldwide.



Emerging Energy and Industrial Structures with Zero-Carbon Emission

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減碳淨煤主軸中心
Carbon Reduction and Clean Coal Focus Center

NEP 第二期能源國家型科技計畫
National Energy Program-Phase II

CO_2 Capture Technologies

CRCCFC

Tsing-Hua Univ. & China Steel Co.
Chemical Absorption (0.1 t/d) &
Adsorption (1.0 t/d)

Tsing-Hua Univ. &
Formosa Petrochemical Co.
Chemical Absorption (1.0 t/d)

Ind. Tech. Res. Institute (ITRI) &
Taiwan Cement Co.
Calcium Looping Process (24 t/d)

Chemical Absorption

Absorbent improvements

- Amines with promoters (PZ+DETA)
- Organic solvent (PZ+DEG)
- Inorganic salts additives (PZ+DETA+KCl)

Process intensification

- Replacing packed bed with rotating packed bed

Advantages

- Better mass transfer rate
- Absorber and stripper volumes reduced by 70%
- Absorbent regeneration energy reduced by 22%