

China Races To Carbon Neutrality: Policy Innovation in the Age of Resilience

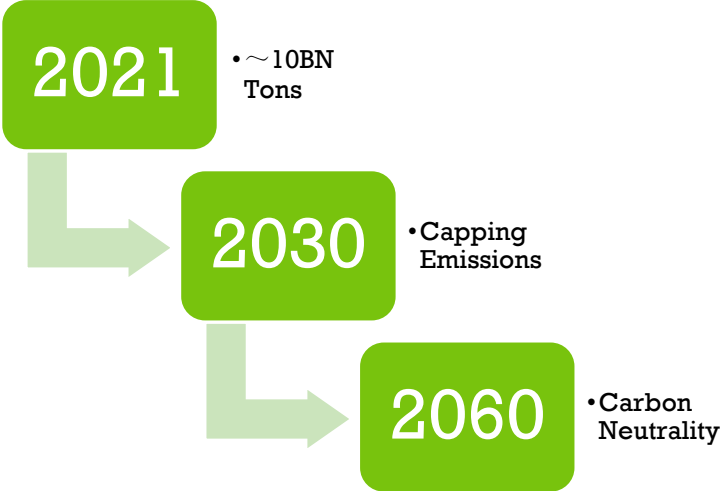
Changhua Wu

China Director, Office of Jeremy Rifkin

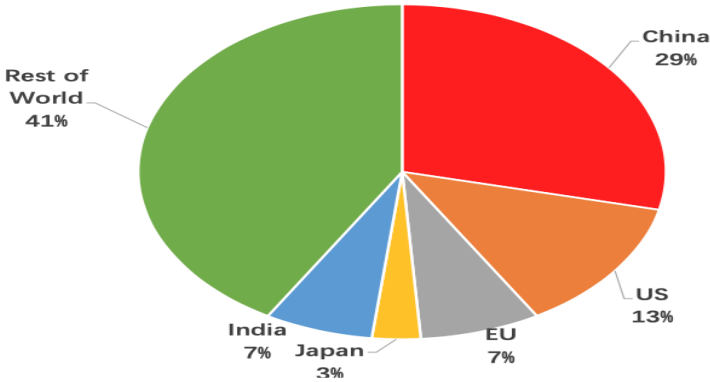
October 6th, 2021

ICEF'21

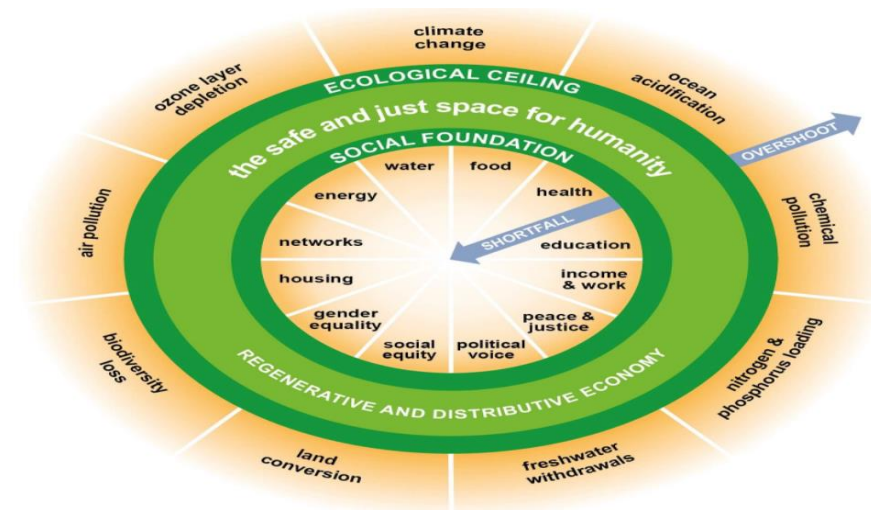
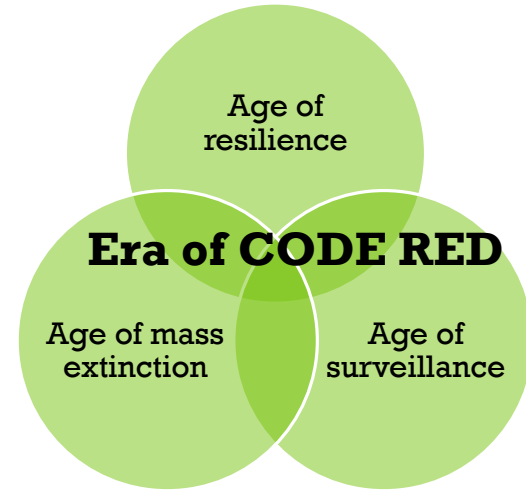
China: A Make-It-or-Break-It Dilemma!



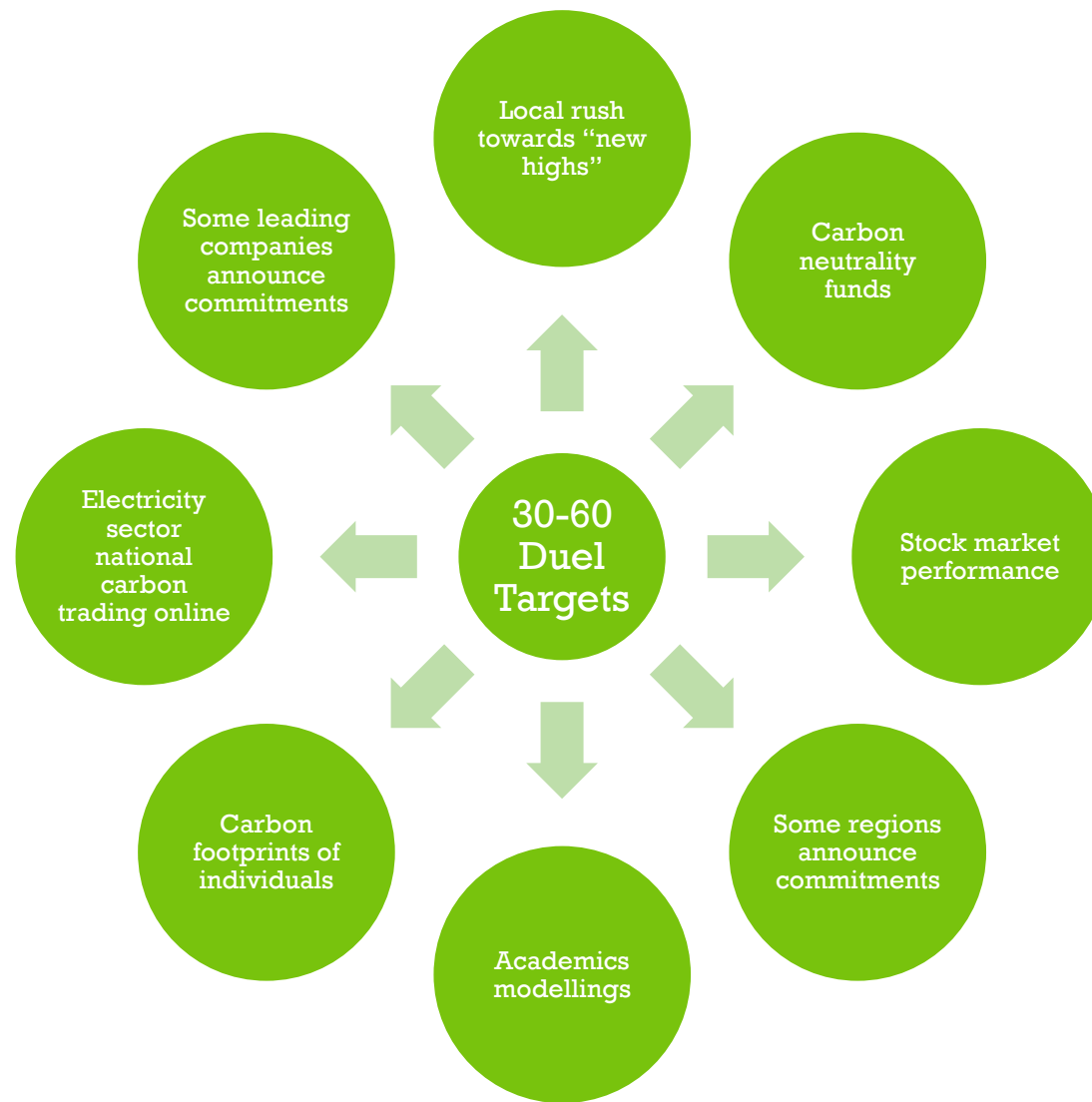
Share of Global Energy-related CO2 Emissions



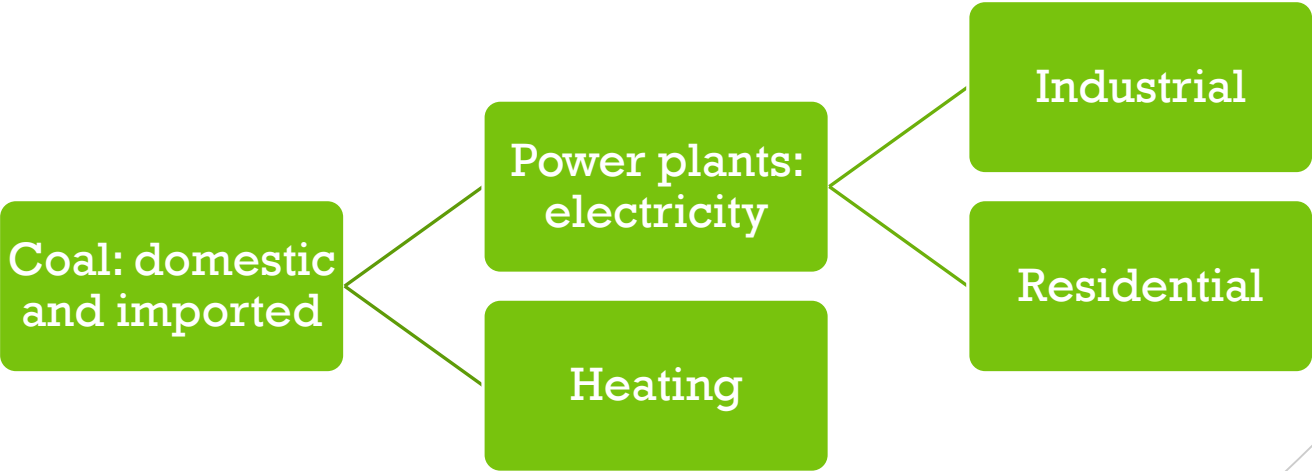
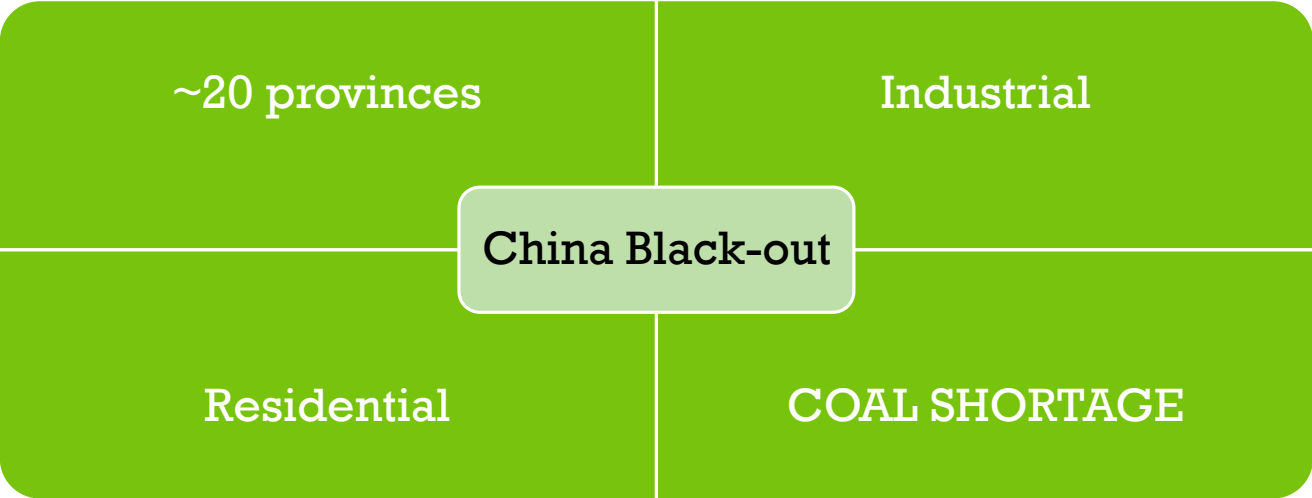
Global Challenge: The 10 BN Tons



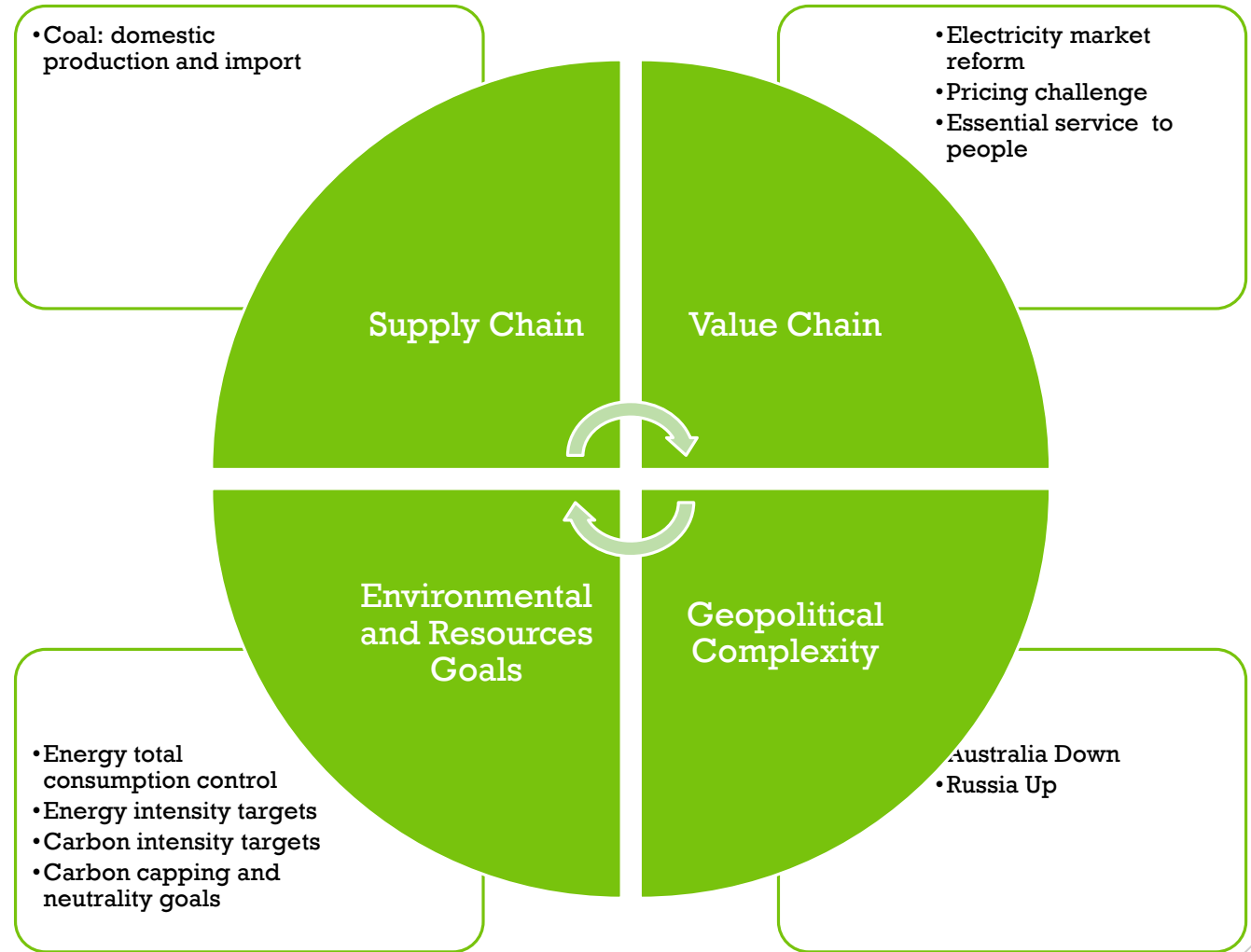
Chinese Frenzy to Race to Carbon Neutrality



The Curse of Coal

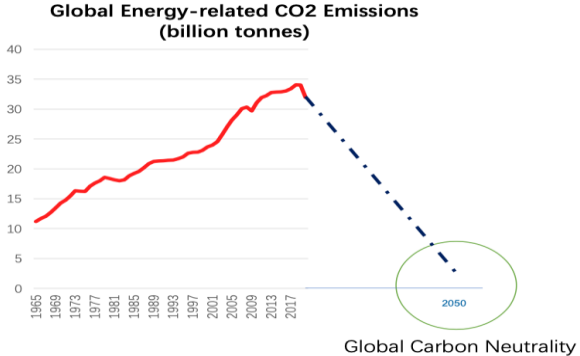


Policy Disconnect: Energy Security, Economics and Environmental Integrity



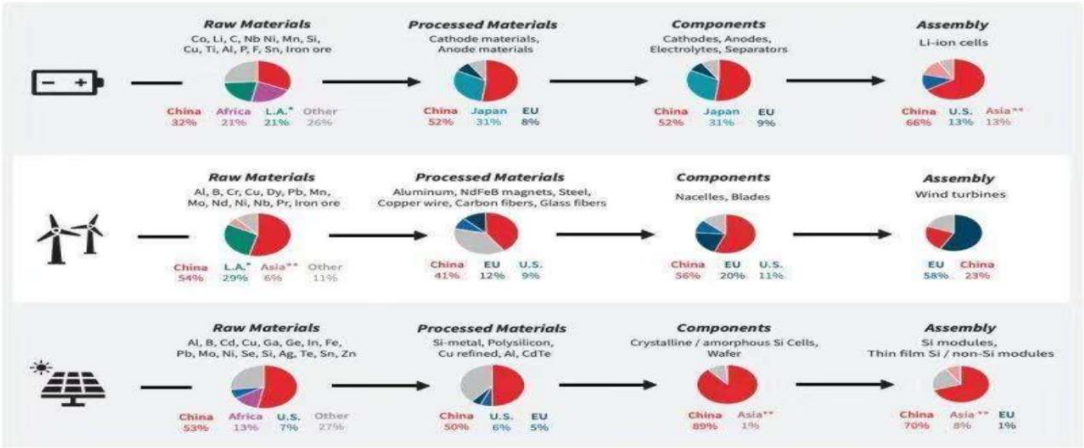
China Gospel of Clean Energy Revolution

Global Netting-Zero calls for **accelerated innovation**



- Net-zero requires global deployment of **best manufacturing capabilities**.
- It call for **accelerated innovations** in technology, cost, regulation and business model.
- **Business model innovation** is required to
 - Efficiently deploy Chinese manufacturing capabilities in solar, wind, batteries and other carbon reducing technologies;
 - Channel global innovations to help China reducing its carbon emissions.

Global Netting-Zero needs Chinese manufacturing capabilities...



Chinese Innovation Examples

“Reverse steam-engine”: Water-vapor heat pump – a **proven technology**



More efficient than air-sourced heat pump; 1kg of condensed water from 10C° releases 593kcal of heat (60 g of oil).

This HP replaces fossil fuels for central heating, saving cost by over 40%.

Captures pollutants, produces clean water.

“Reverse combustion”: CO2 conversion technology – **industrial pilot ongoing**



Plasmon catalyst that converts CO2 and H2O into hydrocarbons under normal conditions at large scale and very low cost, i.e. ½ of oil products.

Reverse-Combustion Technology is underway



Guanghe New Energy (or GH) - a Beijing-based start-up company – has developed a catalyst based on surface plasmon technology that can convert CO2 and H2O into hydrocarbons using industrial waste heat or solar heat.



Based on industrial pilot that produces 20kg of hydrocarbons a day, 48.2% of input CO2 can be converted into hydrocarbons while energy conversion efficiency is 28.7%. GH estimates that when this technology is widely deployed, it can produce oil and gas from CO2 and water at half the cost of the current pump prices.

Policy Innovation to Deliver People and Planet Positive



From geopolitics to biosphere politics – Biophilia consciousness

From age of progress to age of resilience

Economic infrastructure transformation enabled by new generation of technologies

A younger generation of millennials and Gen-Z spearheading a planetary mobilization for sustainability and setting agenda for a bold political movement to clean revolutionize society



THANK YOU!

Together,

We Can Innovate for A Better Shared Future.