LINGO
Leave it in the Ground Initiative

GREEN GOING OUT

China's potential role in addressing climate change

Discussion Paper

China is already an energy transition leader

China's power system is shifting rapidly towards clean energy. China has become a champion in clean energy innovation and is leading in several fields. It has successfully made clean energy cheap, which now beats dirty and expensive in many important contexts. China today already has the new energy technology that the world needs for decarbonization.

The fossil fuel dependency challenge

The world is still largely hooked on fossil fuels. Clean energy, although cheaper, needs up-front finance, and this is prohibitive for many Global South contexts, even in the Global North, in particular with high inflation – ironically partly driven by fossil fuel dependency – upfront RE or efficiency investments are challenging. So people stay locked into expensive fossils.

Trump & Co. are working to prolong this dependency, but putting stones in the way of new energy diffusion are temporary phenomena. The fundamentals are moving in the same direction: dirty gets more expensive, via resource exhaustion or via environmental taxation, clean gets cheaper. Over time, the pressure between expensive & dirty vs. cheap & clean gets bigger and bigger – and many business opportunities arise.

Overcapacity?

China currently faces a supposed "overcapacity" in RE and EV manufacturing, as geopolitical tensions and trade wars dampen export business, which depresses prices and impacts profitability. China has the capacity to produce 8 million additional EVs and several hundred Gigawatts in solar panels for export. We believe that overcapacity is a misnomer: these are bottlenecks in decarbonizing the world.[1]

Additional renewables don't automatically mitigate climate change

An important caveat: Additional renewables don't protect the climate.
Without using the phase-in of modern renewables to phase out dirty fossil fuels, leaving existing coal, oil and gas deposits in the ground, the climate system will see no difference: adding renewables will be a wasted opportunity for the global fight against climate change. LINGO proposes to link de-risking renewable investments with fossil fuel non-extraction in Leave-it-in-the-Ground Incentive Deals (LIDs).[2]

[1] China's 'spare' solar capacity offers climate and energy access opportunity. Ember, June 2024
[2] Kühne & Boëffard (2024) Toolbox of Financial Incentives to Leave Fossil Fuels in the Ground. LINGO, November 2024

A GREEN GOING OUT STRATEGY

China's technological and financial capacity puts it in a good position for contributing to a swift global decarbonization while generating strong demand for its export industry. Via a Green Going Out strategy, the development of new international markets for China's green technology and infrastructure can be accelerated, contributing to green transitions in Belt and Road countries and beyond. Helping other countries replicate the Chinese shift to clean energy can be a wise investment that pays back more than just financially.

Linking financial support to **demonstrated phase-out of fossil energy** (fossil fuel demand replaced or fossil fuels left in the ground) turns it into a measure that helps the international community address the urgently needed fossil fuel phase out, and in the Global South can help leapfrog populations to modern energy services.

The Chinese government can implement this strategy for example via the People's Bank of China backing up credit guarantee schemes, e.g. up to the amount of the avoided damages within China (see the Example calculation below), lending guidance or other ways to participate in derisking these investments.[3] China, with the world's largest banking system and trillions in reserves, has the financial capacity to self-finance the upfront investments RE needs and which many potential clients struggle to raise. It could do so in RMB, increasing the global use of the currency.

With many renewable technologies, in particular solar PV and batteries, e.g. in Zerocarbon Energy Prosumerage Systems,[4] but also electric two- and three-wheelers with swappable batteries, one can **start small, then scale**. Pilot projects can test the concepts for wider application.

Making **full use of China's spare production capacity** would require about 200 billion USD per year for EVs and 100–150 billion USD for solar panels. This would allow for the deployment of several hundred Gigawatts in overseas projects. Unlocking that potential could contribute to three important goals at once:

1. **Economic stability in China**, in particular in the strategic new energy sector.
2. **Addressing the climate crisis**/avoiding climate damages in China and the world.
3. Playing a new and much needed role on the global stage: **China as a reliable partner** that provides **cheap, modern and clean energy** for the rest of the world.

Example calculation:

1 kilowatt (KW) of solar PV can avoid 20 tons of CO2 over its lifetime, which would result in >8000 USD of damages globally, and ~500 USD of damages in China.[5] Coincidentally, that is roughly the overall investment needed for installing a kilowatt of solar PV in China today. This means that each KW installed avoids climate damages in China equal to its investment value and sixteen times more around the world – if it displaces fossil fuels.

[3] Just in October 2025, the PBOC injected billion 900 billion CNY into the economy via its Medium-Term Lending Facility. The amount is roughly comparable to what it would take per year to absorb all spare solar panel manufacturing capacity.
[4] 零碳单元体, a concept pioneered by Prof.Pan Jiahua at Beijing University of Technology.
[5] Ricke et al. (2018) Country-level social cost of carbon. Nature Climate Change, 8, 895–900, 2018, provide a median global social cost of carbon estimate of 417 USD per ton of CO2, and 24 USD for climate damages in China alone.