IIPPE 2025 • Ankara, Turkiye

China Confronts “Renewables Capitalism”

Dic Lo

The Lingnan College, Sun Yat-sen University; SOAS University of London

This presentation is mainly based on the following co-authored paper by Dic Lo, Niangjijia Nyangchak, and Fanqi Lin,

“China and Renewables Capitalism in the Green Transition”, *Development and Change*, forthcoming 2025.

Theme

- People concerned with the desirability and viability of coping with Climatic Change within the confine of capitalism – “renewables capitalism”, in short – might want to see what lessons can be drawn from China.
- This is understandable, given the systemic importance of China in the Green Transition worldwide.
- The task is difficult. China’s performance in the Green Transition is complex. The conceptualization of Chinese political economy in the lens of capitalism is controversial.
- People are thus divided, reflecting not only diverse knowledge of China but also questionable understandings of capitalism in the real world.
- This presentation is purported to contribute to the unravelling of the complexities and the clarification of the understandings. This way, it is hoped that some insights can be gained for predicting China’s future performance in the Green Transition as well as the prospects for renewables capitalism.

The Performance

- China stands as both the world's largest greenhouse-gas emitting country and the largest maker and user of clean-energy technologies.
- Its share of global carbon emissions has continued to rise, reaching as high as 33% in 2023 (**Table 1**).
- *Equality*: in 2023, China's per-capita emissions were 201% of the world average. By comparison, all developing countries beside China were 59%, the United States 299%, and all OECD countries 172% (**Table 2**).
- *Decoupling*: China's carbon intensity dropped by 46% from 2005 to 2023. During this period, the carbon intensity of the United States dropped by 44%, that of all OECD countries dropped by an average of 40%, and that of all developing countries beside China dropped by an average of 25%.

Table 1. CO2 Emissions (excluding LULUCF, % of World Total)

	1960	1980	2000	2023
China	8%	8%	14%	33%
United States	31%	24%	23%	12%
World excluding OECD and China	28%	36%	33%	38%
OECD excluding US	31%	34%	29%	17%

Sources: *World Development Indicators*, accessed 6th October 2022 and 23rd June 2025.

Notes: The 1960 and 1980 OECD figures are High-Income Economies data.

Table 2. CO2 Emission per capita (excluding LULUCF, ratio to World Average)

	1960	1980	2000	2023
China	38%	34%	72%	201%
United States	515%	474%	525%	299%
World excluding OECD and China	54%	65%	58%	59%
OECD	155%	207%	279%	172%

Sources: *World Development Indicators*, accessed 6th October 2022 and 23rd June 2025.

Notes: The 1960 and 1980 OECD figures are High-Income Economies data.

- Progress has also been made in the Green Transition.
- The IEA (2024b) reckons that, as of 2022, China’s cumulative renewables capacity accounted for almost a half of the world total. This is likely to reach the ratio of two-third by 2030, according to the respective capacity ambitions.
- And the use of clean energy: according to IEA (2024c), China accounted for almost 60% of global new electric car registrations and over 50% of all electric cars on the roads by 2022.
- In 2024, China produced 31 million motor vehicles, of which about 41% were new-energy vehicles (NEVs, mostly electric cars).
- The 13 million NEVs produced in 2024 accounted for 70% of the world total. In the same year, China exported 2.1 million NEVs.

- Overall assessment: are China’s Nationally Determined Contributions (NDCs) – to peak carbon emissions before 2030 and to achieve carbon neutrality before 2060 – consistent to the global 1.5C target?
- The IEA (2024d) estimates that achieving carbon neutrality by 2050 for the world as a whole might not be far off the mark from keeping warming at 1.5C.
- This being the case, with its developing-country status, China achieving neutrality *before* 2060 is probably in line with the global target of achieving that by 2050.
- But, the problem is that the global target of neutrality is likely to fall short of 1.5C. A great deal of further efforts are needed, both by China and by the broader world.

Conceptualization

- China, like most other countries in the world, is not really free to choose between emitting or not emitting. A balance between the Green Transition and energy security is needed, at least for developing countries.
- The question is whether, on top of such balance that reflects genuine social needs, there are additional forces fostering or obstructing the Green Transition.
- The discourse on renewables capitalism provides strong arguments that capitalism tends to obstruct the technically feasible transition to renewables. Three main arguments.
- First, renewables are difficult to be commodified, in terms of stable generation of electricity and connection to the grids – hence they are not favored by capital.
- Second, existing fossil capitals have market power, and, as vested interests, they tend to resist the transition to renewables.

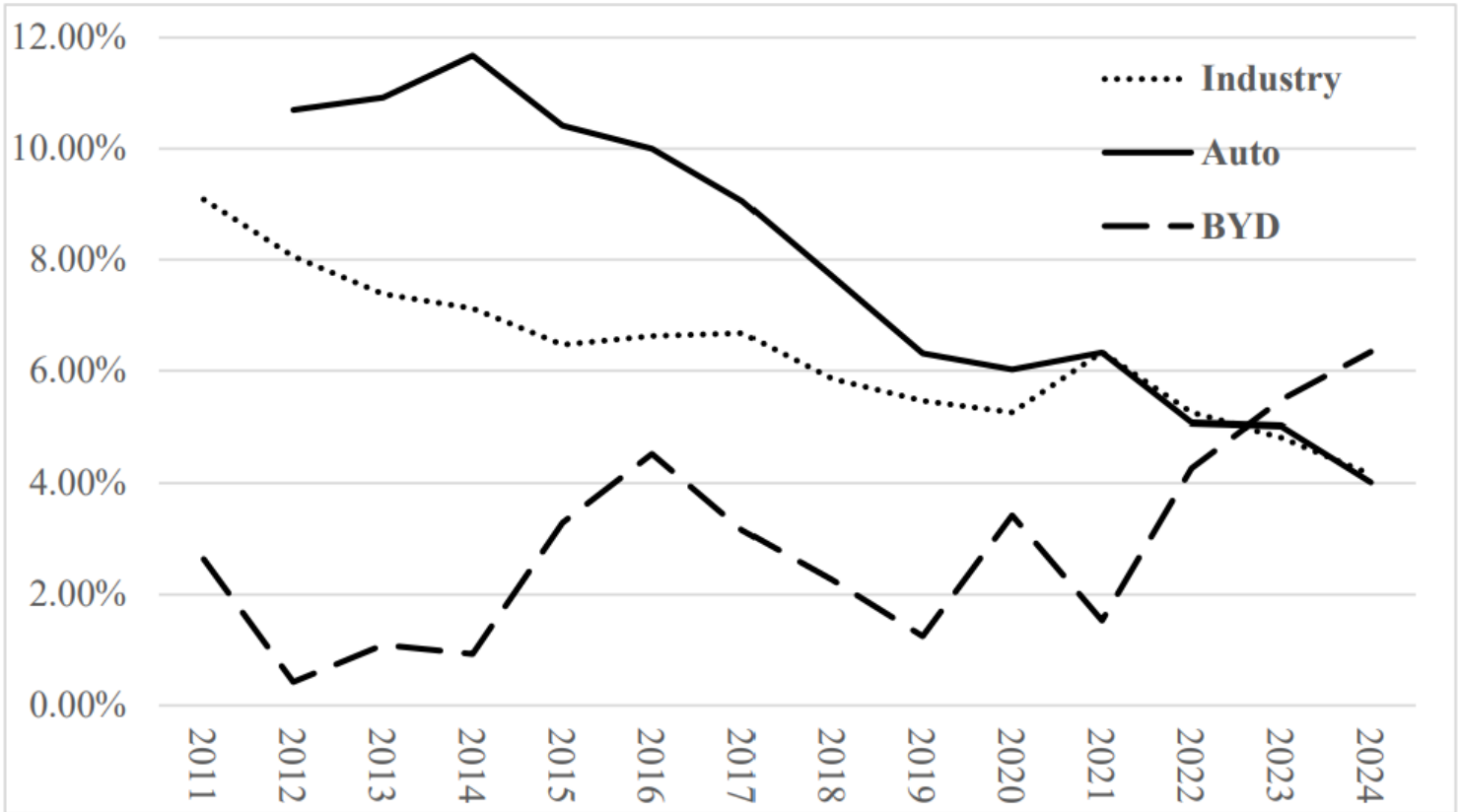
- Third, with the inclination to short-termism that is pervasive in today's world-dominating neoliberal financialized capitalism, upfront long-term investment that is normally needed for renewables is unlikely to come about.
- Do these arguments add up conclusively exterminate any possibility for renewables capitalism?
- Theoretically, conceptualizing capitalism in a systematic way necessitates thinking in terms of three different logics of profitability: (a) individualistic (blocs of capital), (b) systemic in the short term (total capital), and (c) systemic in the long term (capitalism).
- Capitalism might be able to accommodate deviations from the first two logics, but not the third. Systemic profitability in the long term, therefore, delineates the limit of capitalism.
- What's the position of China in relation to these logics?

The NEV Experience

- Possible lessons from the development experiences of the new-energy vehicles (NEV) industry, which might be representative of the achievement side of China in the Green Transition.
- Three features.
- First, the main business agents leading the development have been new private or mixed-ownership firms, rather than incumbent oligopolistic state-owned enterprises (SOEs); and the enormous scale of financing has mainly come from non-state sources, far more than from state-controlled banks.
- Second, the activities of private business, and the co-ordination by the market, have occurred under state guidance. State activism not only provides the necessary facilitating environment but also involves direct interventions in helping cum disciplining business in the development of the industry.

- Third, both state and private actions are discernibly not oriented to the logic of individualistic profitability, not even systemic profitability at least in the short term.
- The auto industry has undergone a secular trend of profitability decline over the past decade, far worse than the average of Chinese industry. BYD has had its profit rates substantially below the levels of the auto industry and Chinese industry as a whole, all the way until the turnaround in 2023 (**Figure 1**).
- Yet, there has been the tremendous investment growth: the value of total assets of BYD in 2024 is 11.4 times of 2012, compared to the auto industry's 2.9 times and the 2.3 times for Chinese industry as a whole.
- The development experience of NEV, whilst defying neoliberalism, is potentially consistent with the nexus of entrepreneurial capitalism and developmental-state capitalism. Whether it will defy the logic of systemic profitability long term, therefore capitalism, remains to be seen.

Figure 1. Profit Rates of Industry Total, Auto Industry, and BYD (%)



Sources: *China National Statistics*, accessed 20 March 2025; and BYD company reports.

Further Thought

- The question of capitalism is always burdened with the tension between theory and praxis.
- For a mixed system like China's, verifying the reality by simply comparing it to a theoretical model could run the risk of essentialism. For a peripheral entity like China vis-à-vis world capitalism, assessing the reality needs to go beyond the vision of capitalism as a national model.
- Some scholars claim that the widespread institution of waged labor is sufficient to prove that China has become capitalist. They also list phenomena such as the fast expansion of private ownership of the means of production, the appropriation of the surplus product from direct producers, the worsening in income distribution, etc., as auxiliary evidence.
- But, adopting such an approach could suffer from selection bias. What is important is to verify to what extent the logics of capitalism reign in a society whose systemic dynamics are determined by multiple forces.

- The question of capitalism is always burdened with the tension between theory and praxis.
- The point is that the institution of waged labor, however systemic, is necessary but not sufficient evidence of the proletarianization of labor in China. The other side of the coin concerns the appropriation and utilization of the surplus.
- The utilization of the surplus has hitherto fundamentally deviated from the logics of profitability, not only in systematically non-profitable investment such as high-speed railway networks but also, more important, in the fact that China's national rate of investment has persistently far exceeded any other country in the world throughout the era of globalization.
- On balance, therefore, China's experience in the Green Transition is more likely (than unlikely) to have transcended the nexus of developmental-state cum entrepreneurial capitalism – therefore renewables capitalism.