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# GUIDE TO CHINESE CLIMATE POLICY

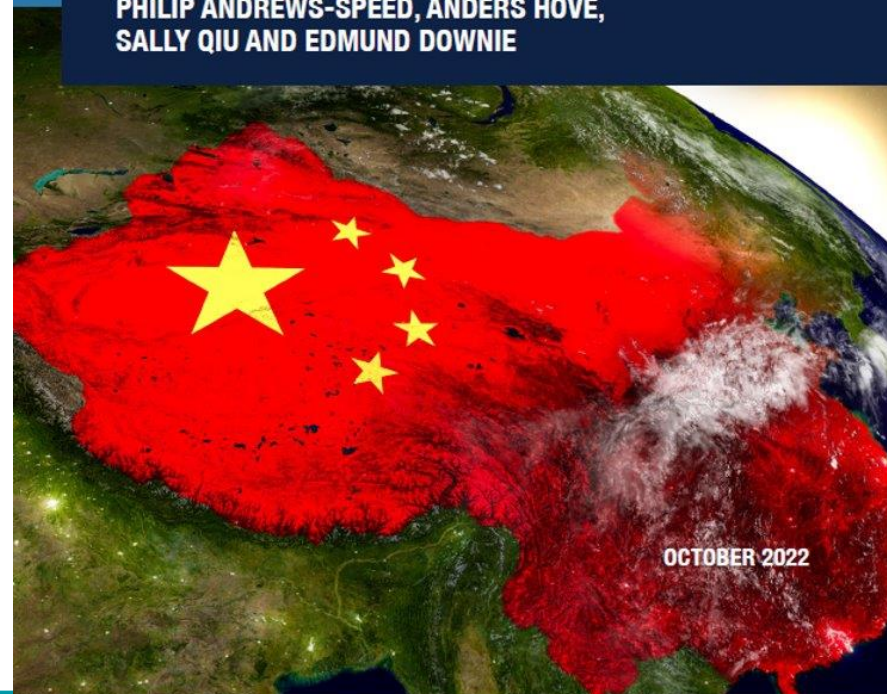
DAVID SANDALOW, MICHAL MEIDAN, PHILIP ANDREWS-SPEED, ANDERS HOVE,  
SALLY YUE QIU AND EDMUND DOWNIE

October 31, 2022



# GUIDE TO CHINESE CLIMATE POLICY 2022

DAVID SANDALOW, MICHAL MEIDAN,  
PHILIP ANDREWS-SPEED, ANDERS HOVE,  
SALLY QIU AND EDMUND DOWNIE





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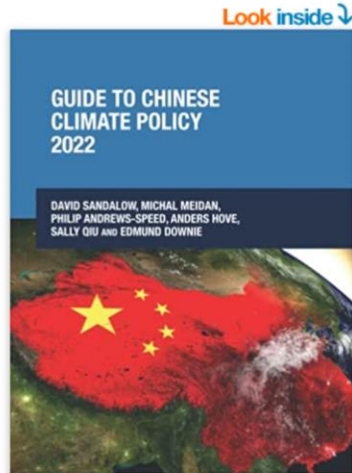
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## Guide to Chinese Climate Policy 2022 Paperback – October 14, 2022

by David Sandalow (Author), Michal Meidan (Author), Philip Andrews-Speed (Author), Anders Hove (Author), & 2 more  
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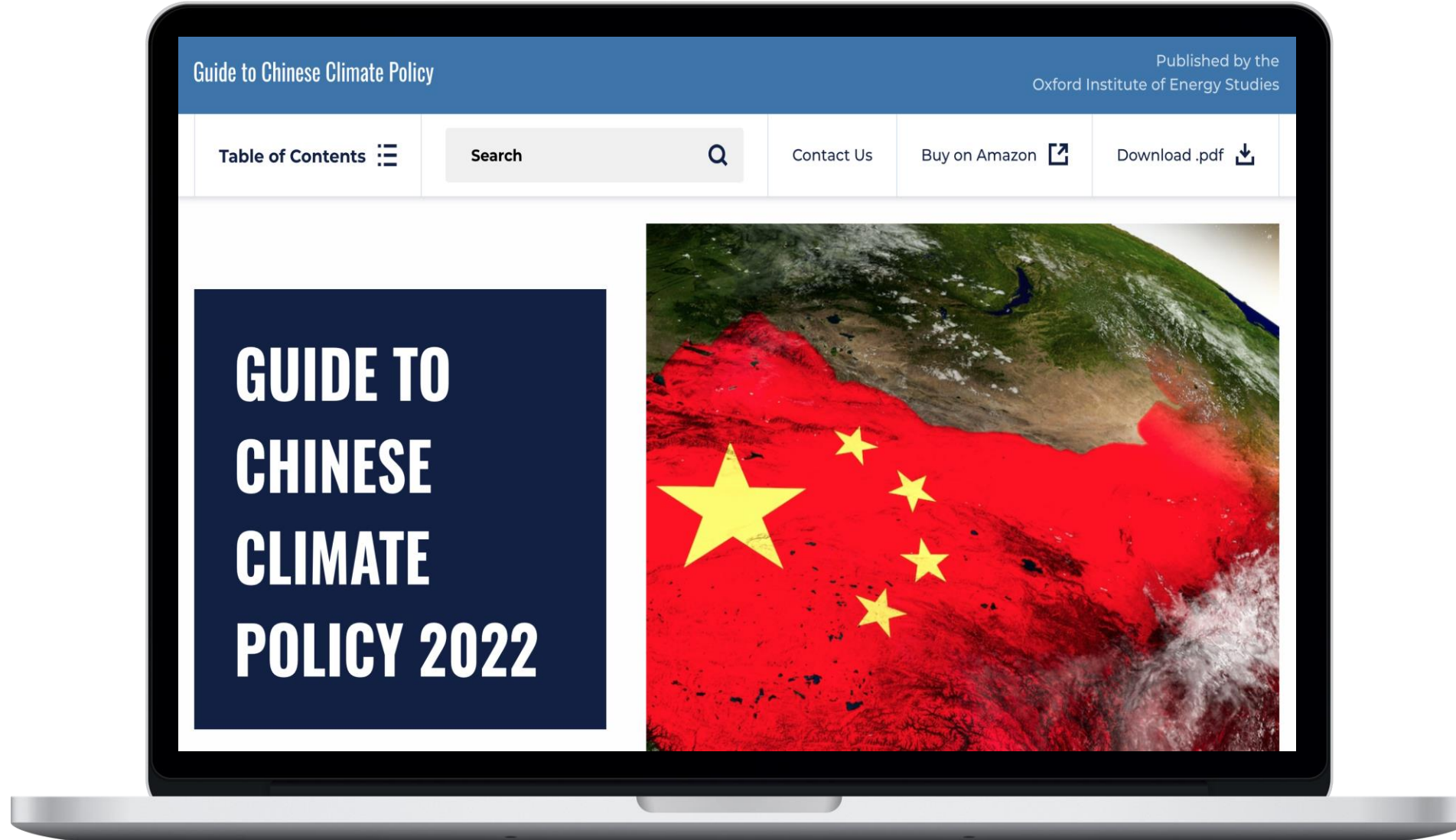


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David Sandalow



# Pudong, Shanghai

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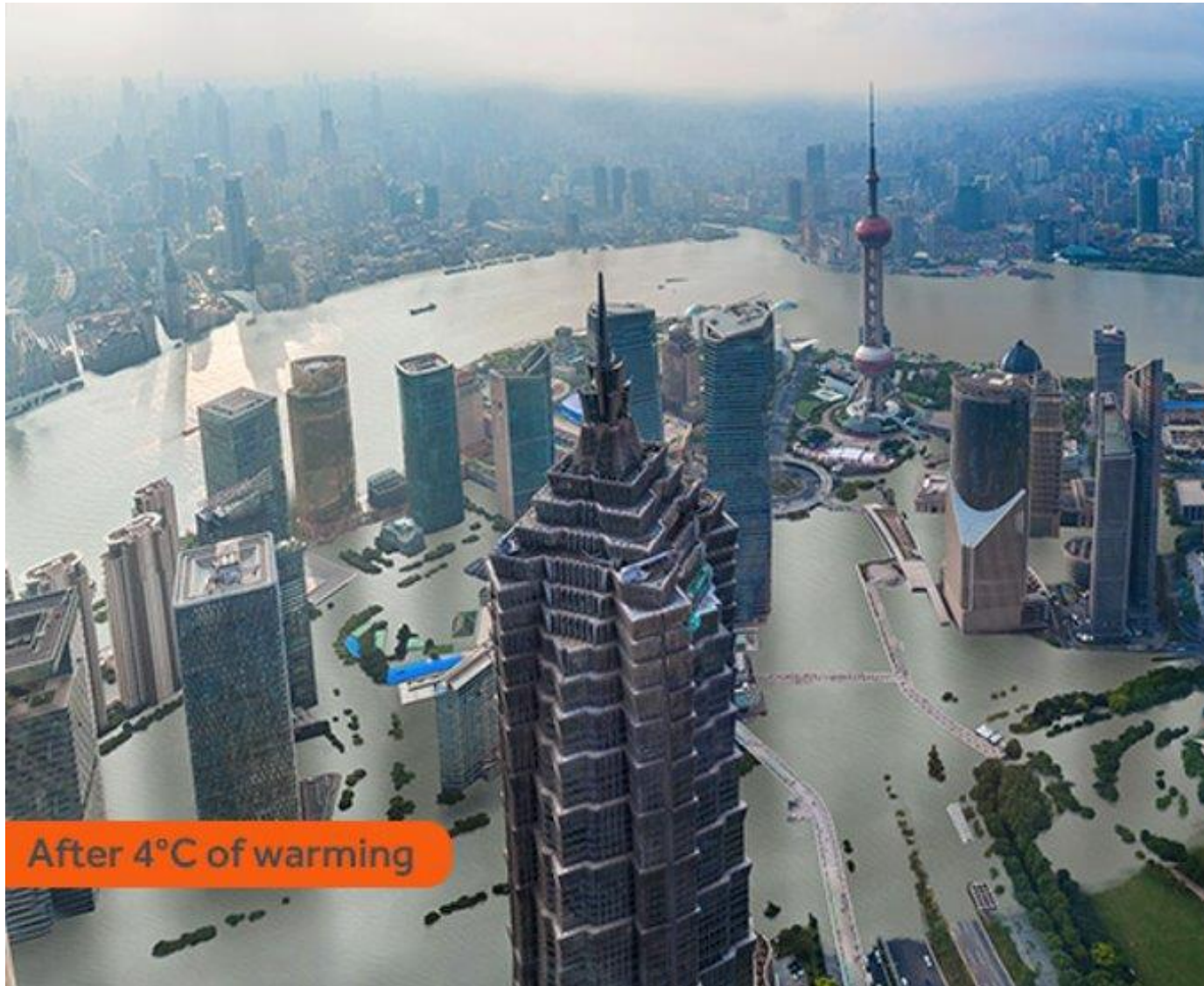






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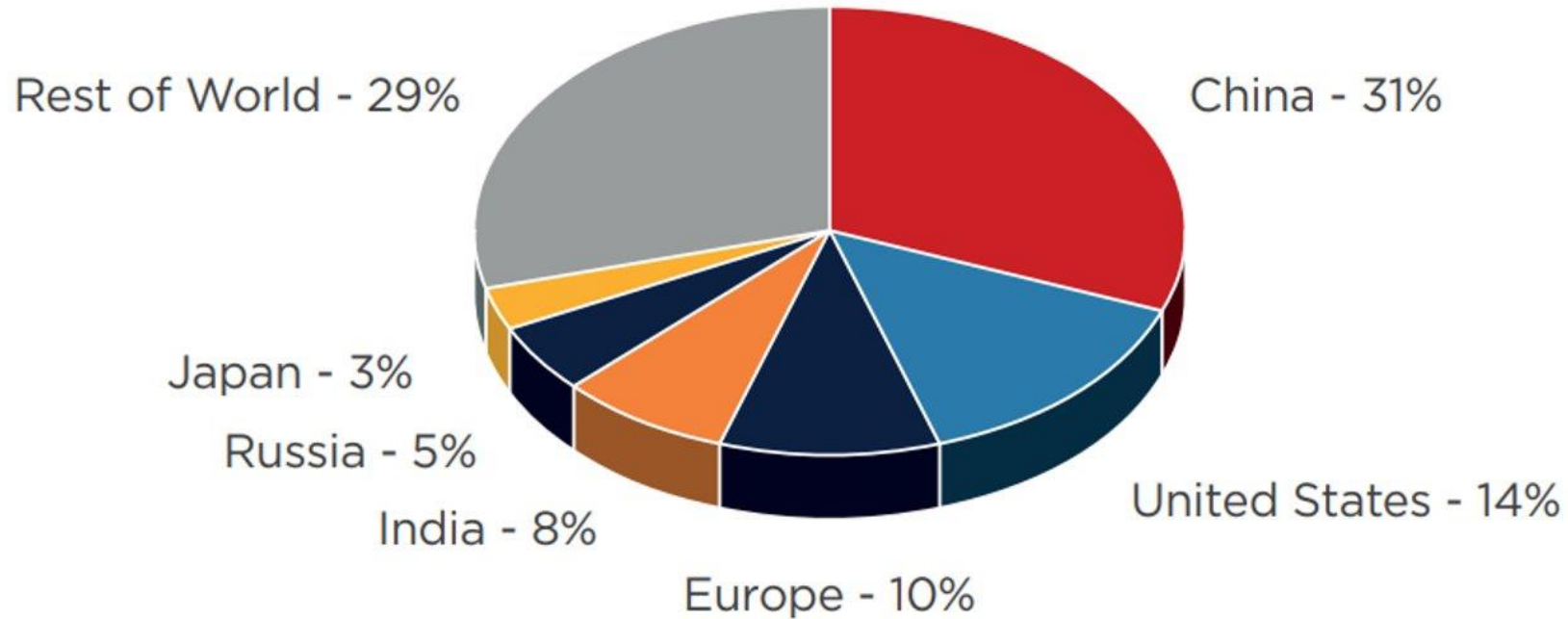
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In 2021, more CO<sub>2</sub> emissions from China than the US, Europe and Japan combined.

**Figure 1-1:** CO<sub>2</sub> Emissions from Fossil Fuel (2021)

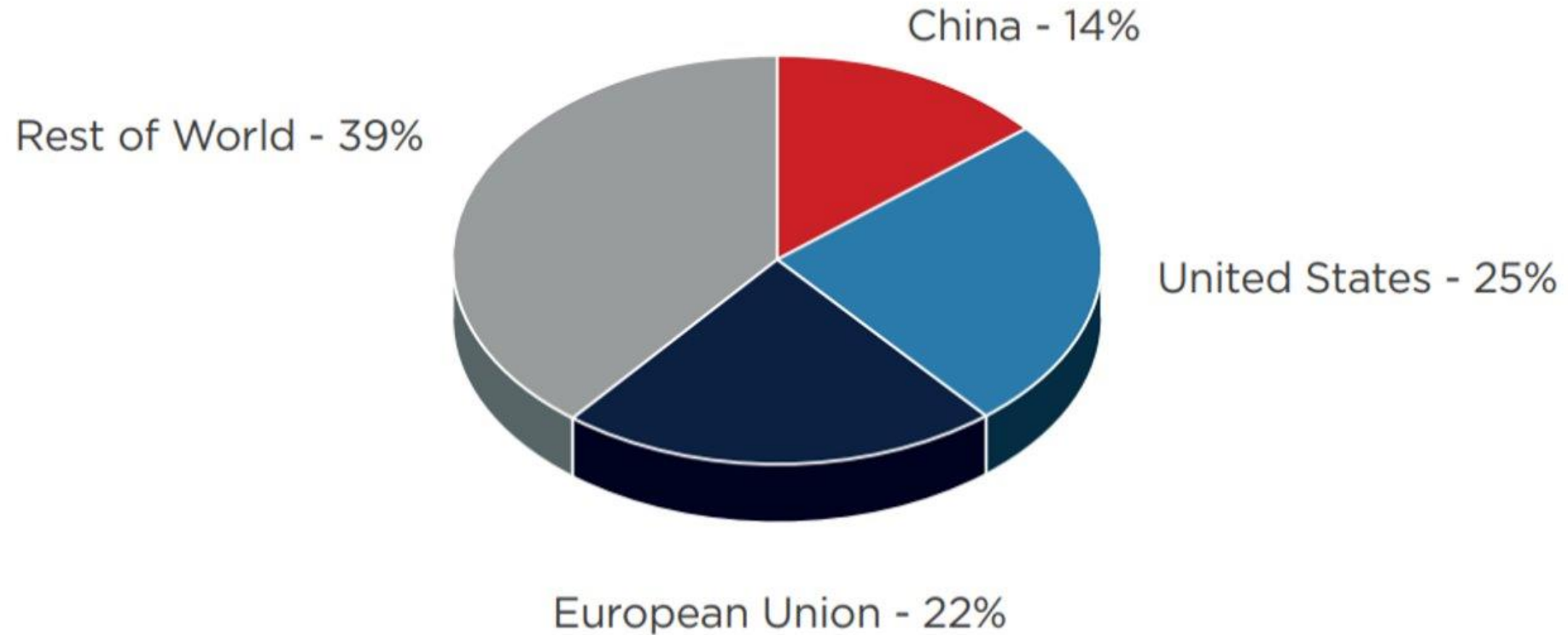


Source: BP Statistical Review of World Energy 2022<sup>3</sup>



## More cumulative CO<sub>2</sub> emissions from China than all countries except the US

**Figure 1-2:** Cumulative CO<sub>2</sub> Emissions (1751–2021)

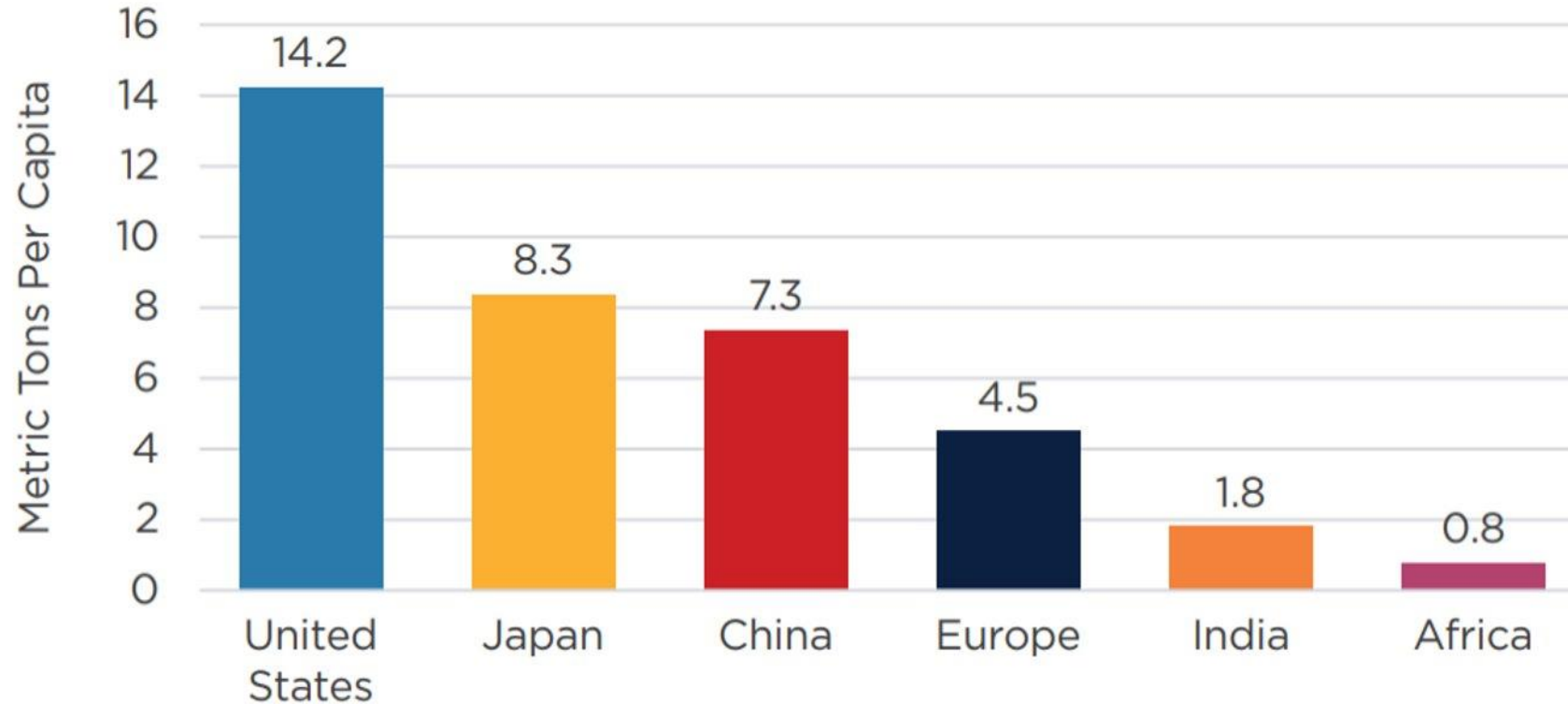


Source: Our World in Data based on CDIAC and Global Carbon Project<sup>6</sup>



In 2021, China's per capita CO<sub>2</sub> emissions were more than those from Europe.

**Figure 1-3:** Per Capita CO<sub>2</sub> Emissions from Fossil Fuels (2021)

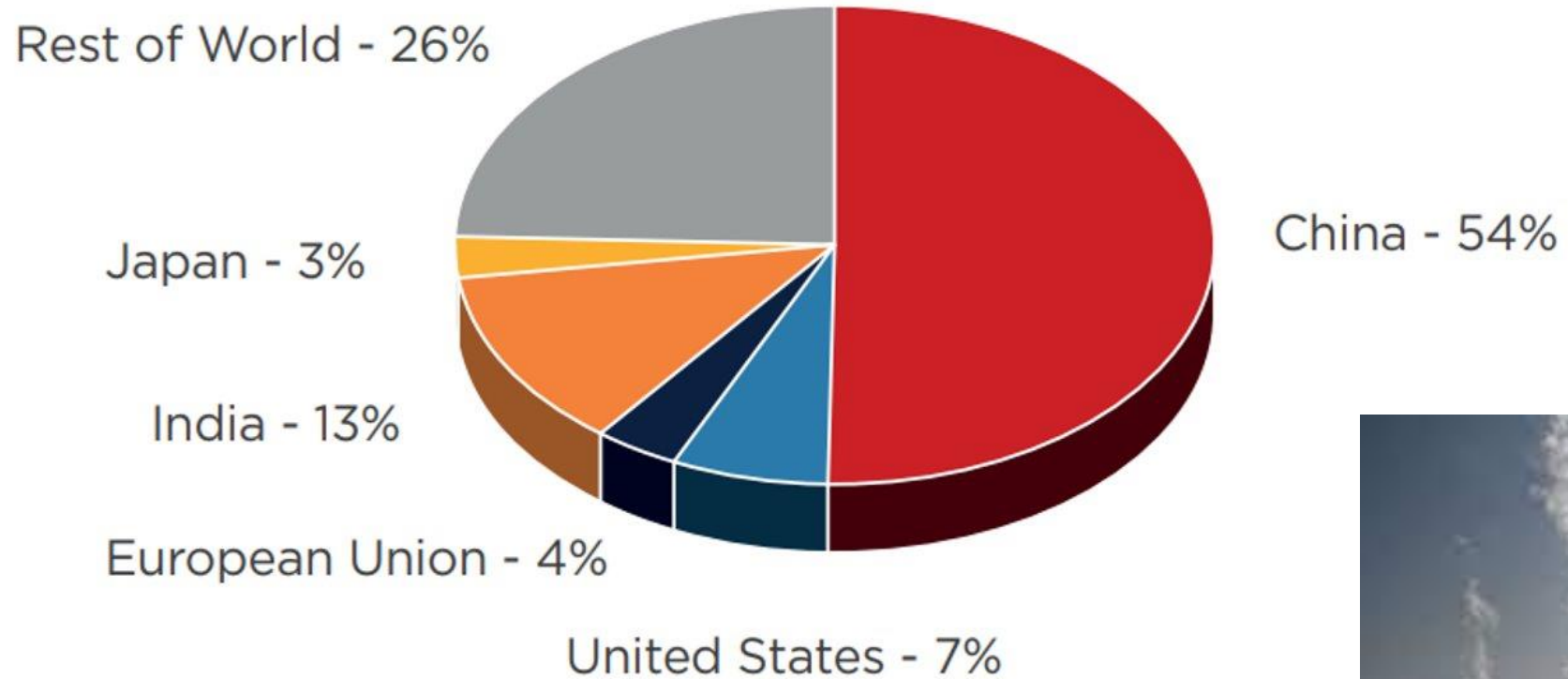


Sources: BP Statistical Review of World Energy (June 2022);  
UN Department of Economic and Social Affairs - Population)<sup>8</sup>



# China uses more coal than the rest of the world combined.

**Figure 5-1:** World Coal Consumption (2021)



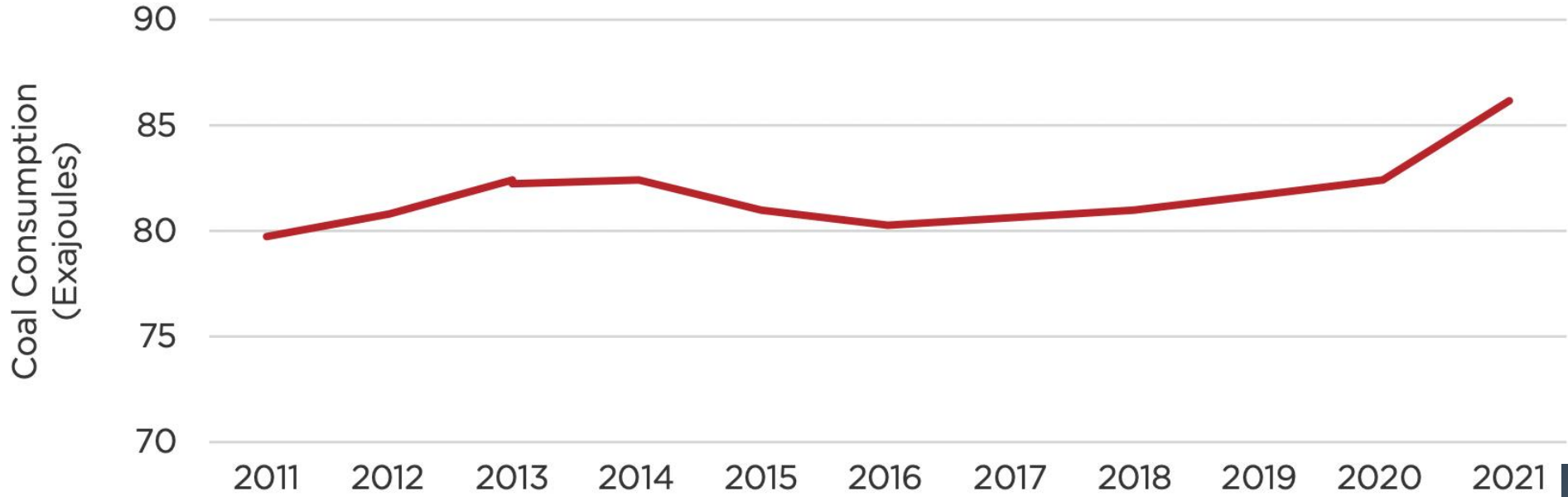
Source: BP<sup>4</sup>





# Coal consumption in China is rising.

**Figure 5-2:** Chinese Coal Consumption (2011-2021)



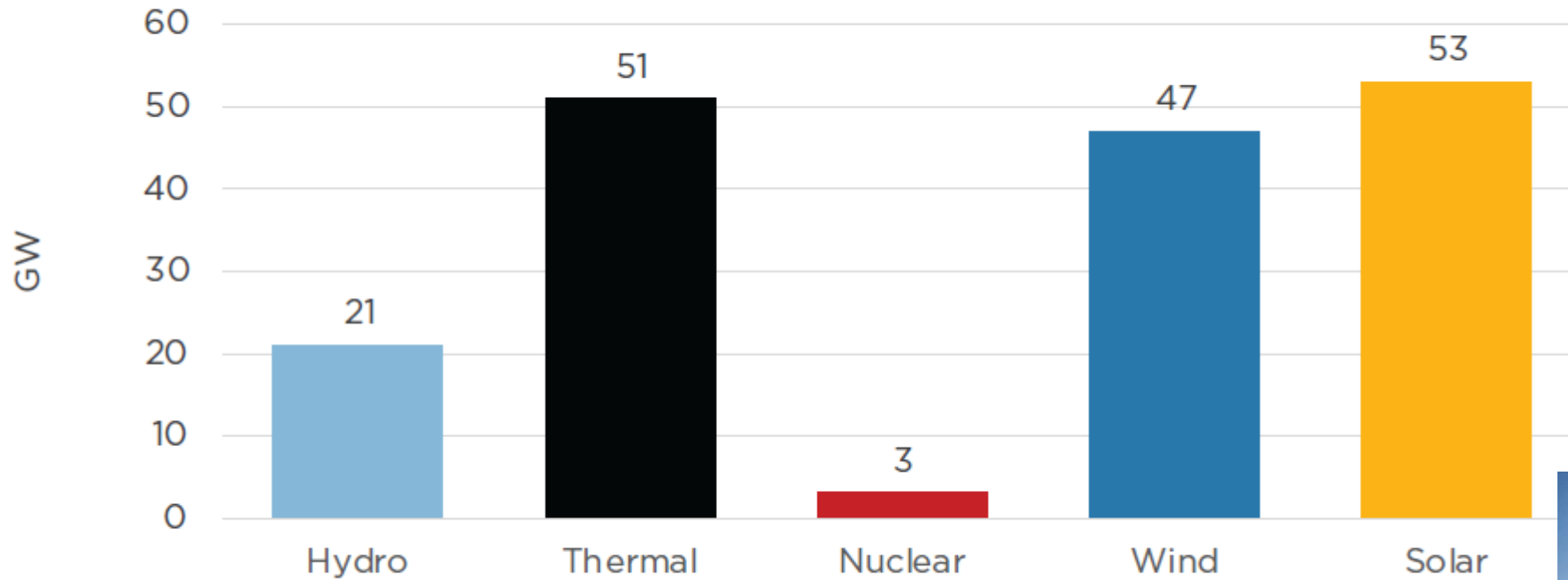
Source: BP<sup>7</sup>





## But renewable capacity is increasing at a rapid pace

Figure 5-6: Annual Increase in Generating Capacity in China (GW) (2021)



Source: China Electricity Council<sup>36</sup>



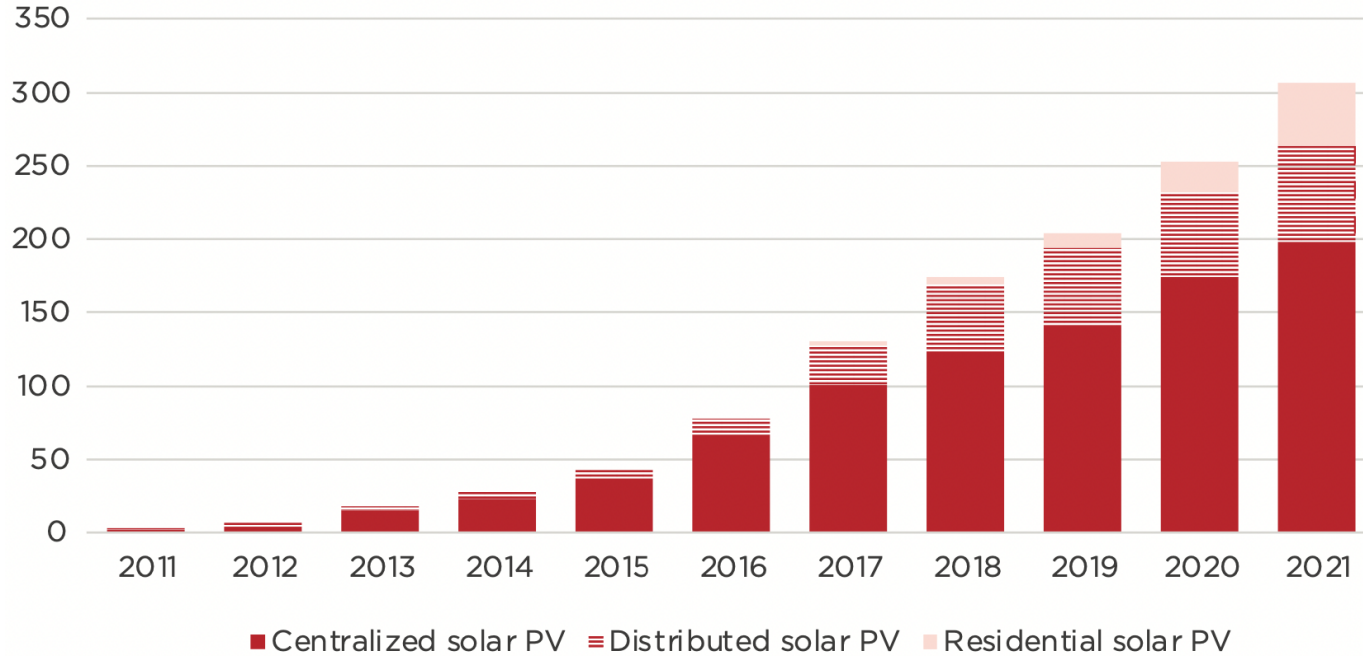






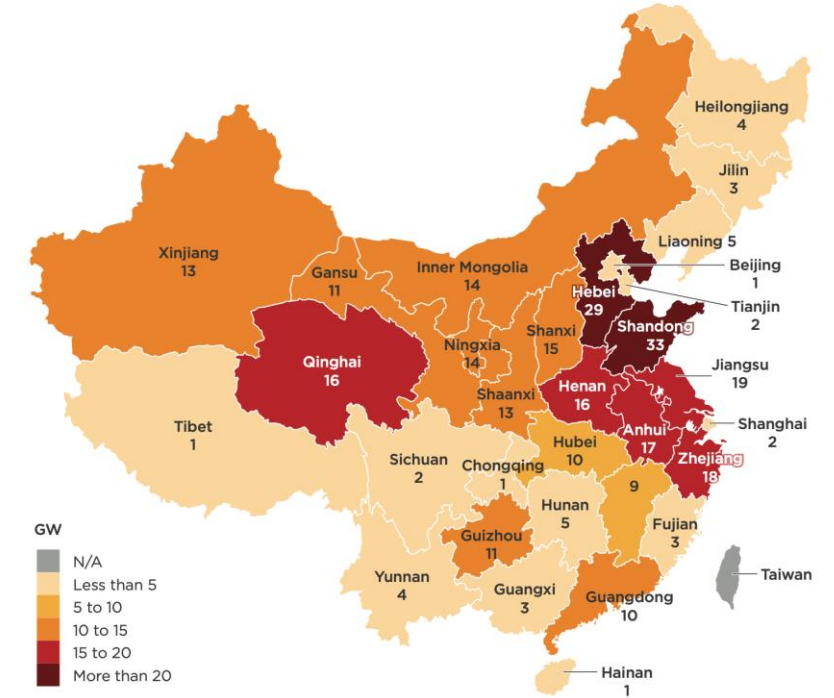
# And almost 50% of the world's solar capacity

**Figure 6-4:** China Solar PV Installed Capacity (2010-2021)



Source: GIZ 2022, NEA data<sup>50</sup>

**Figure 6-5:** Cumulative Solar PV Installed Capacity by Province (GW) (Year-End 2021)



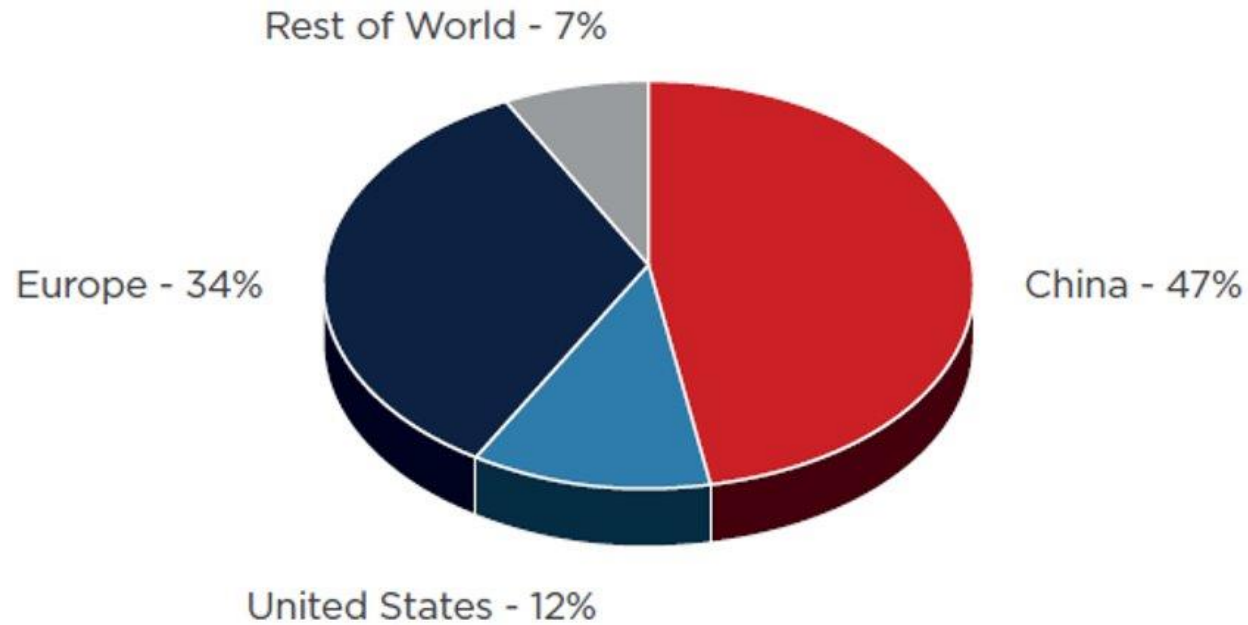
Source: GIZ 2022, based on data from NEA<sup>65</sup>





# Almost half the electric cars in the world are in China.

**Figure 16-1:** World Electric Car Stock



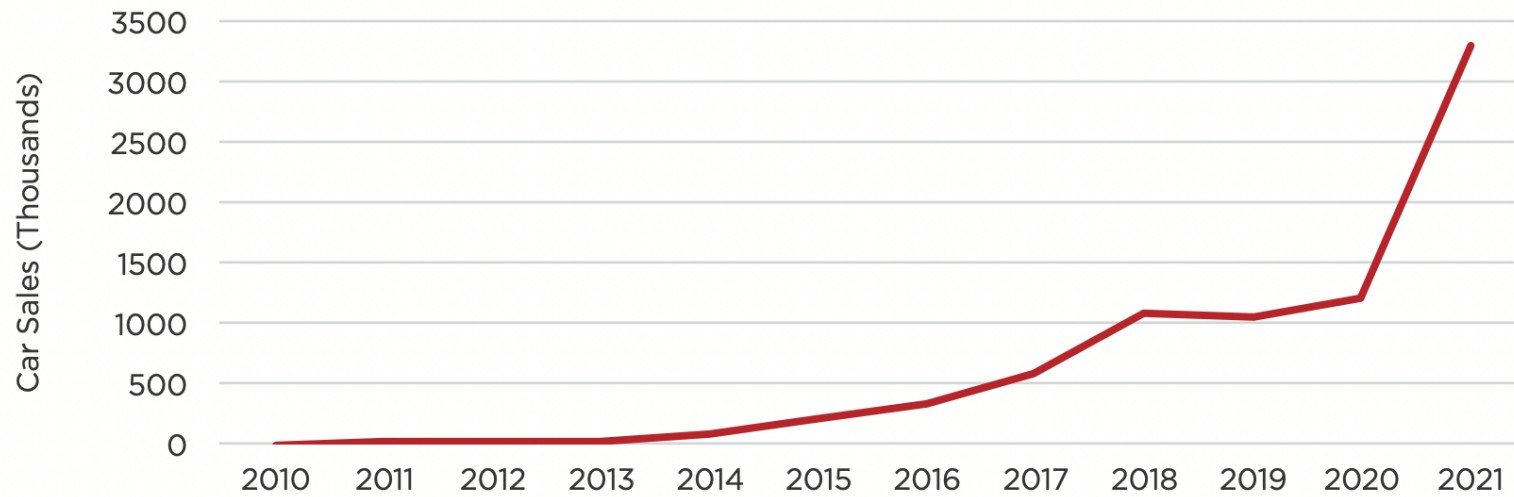
Source: IEA, *Global EV Outlook 2022* at p.16<sup>23</sup>





# Electric car sales in China are growing fast.

**Figure 16-2:** Electric Car Sales in China (2010-2021)



Source: IEA, Global EV Outlook 2022<sup>26</sup>

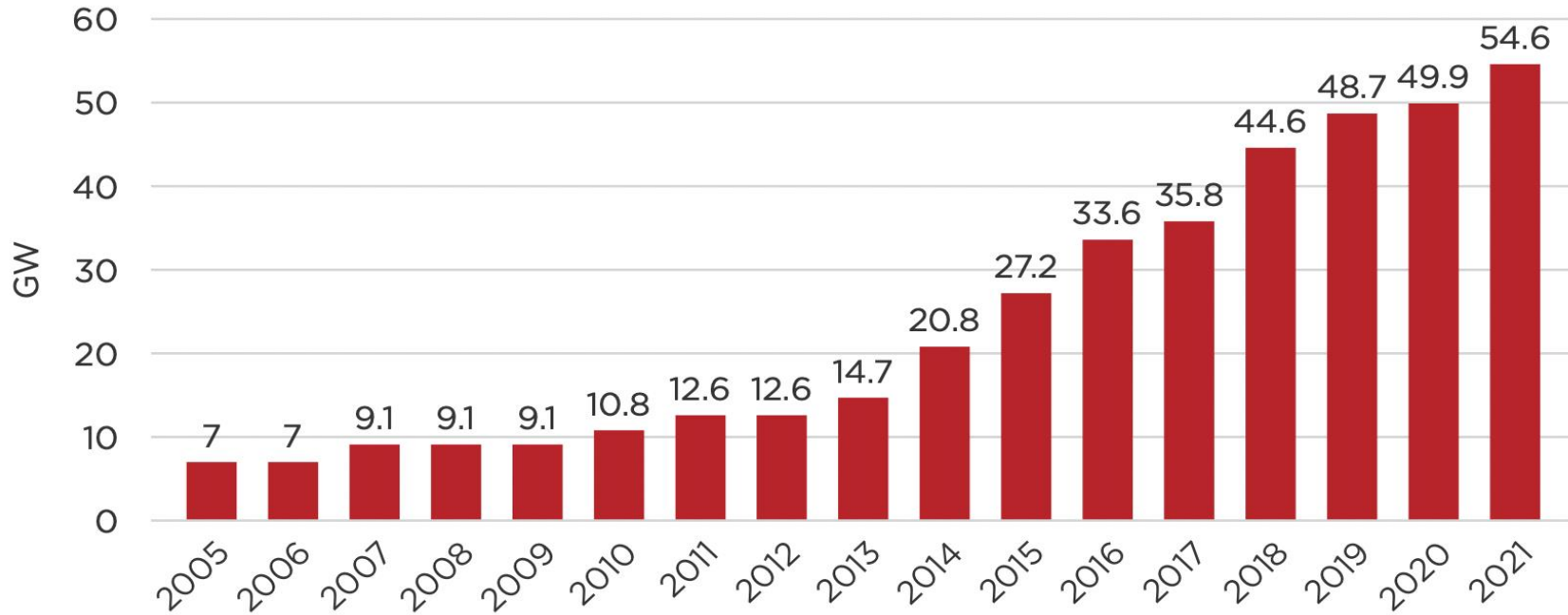


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# Nuclear power is growing steadily in China.

**Figure 7-1:** Nuclear Power Capacity in China (2005-2021)



Source: World Nuclear Association (September 2022)<sup>10</sup>





# Current nuclear plants are all in coastal provinces.

Figure 7-2: China Nuclear Power Plants



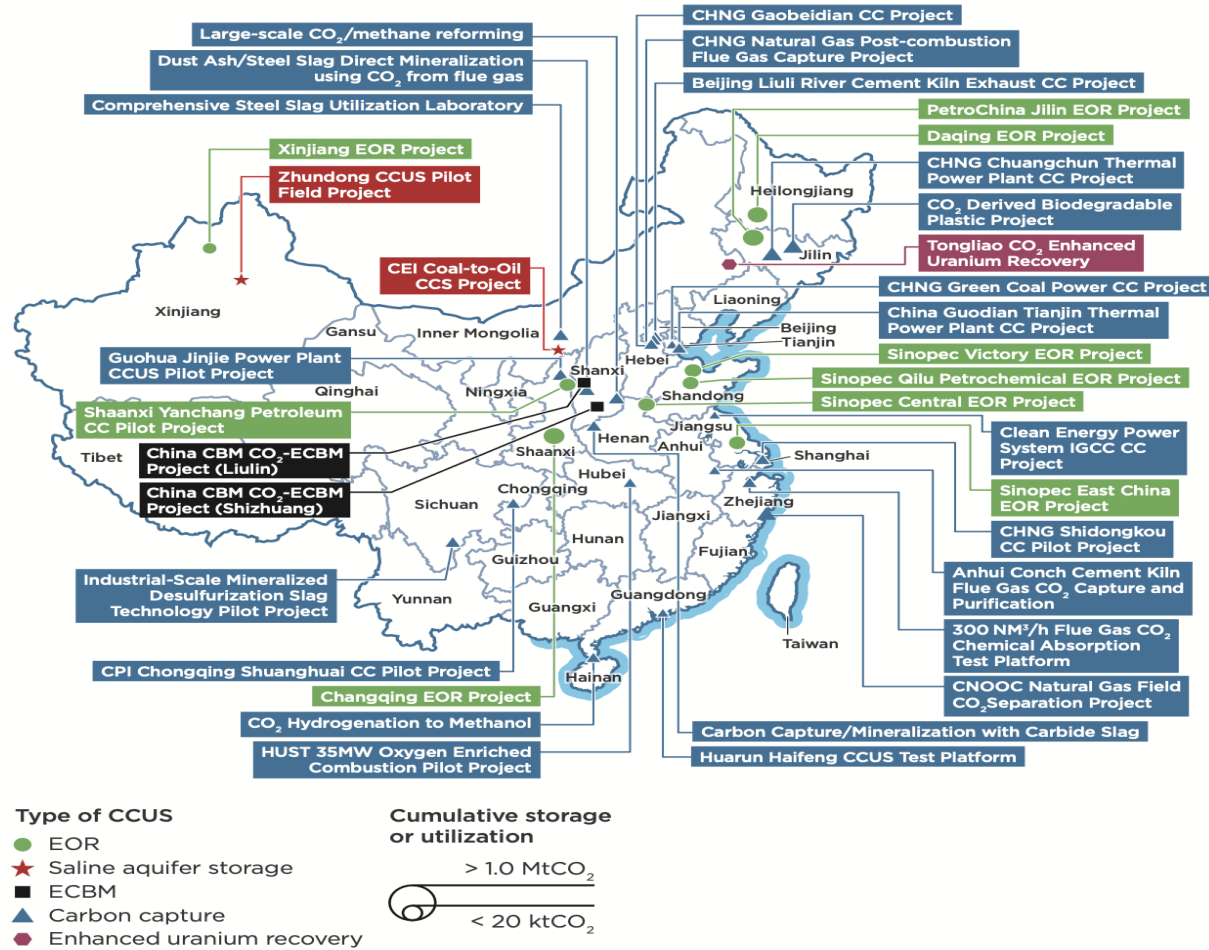
Source: World Nuclear Association (February 2022)<sup>29</sup>





# Pilot-scale CCUS plants launched in China.

Figure 15-1: CCUS Projects in China (2021)

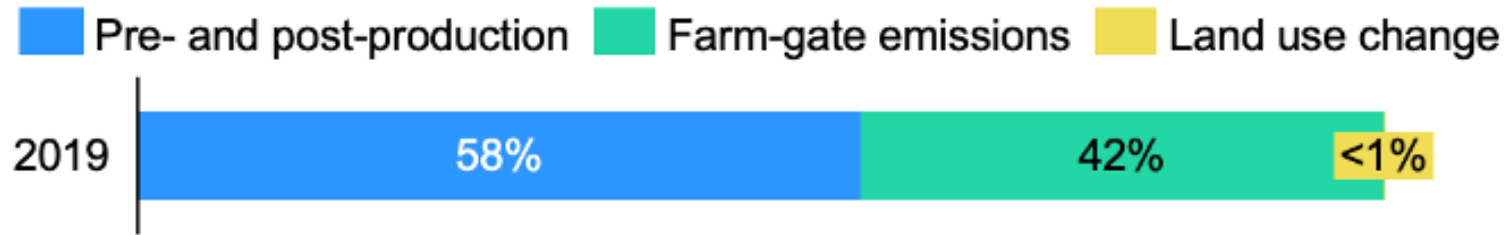


Source: Kevin Tu and Sally Qiu based on China CCUS Annual Report 2021<sup>4</sup>

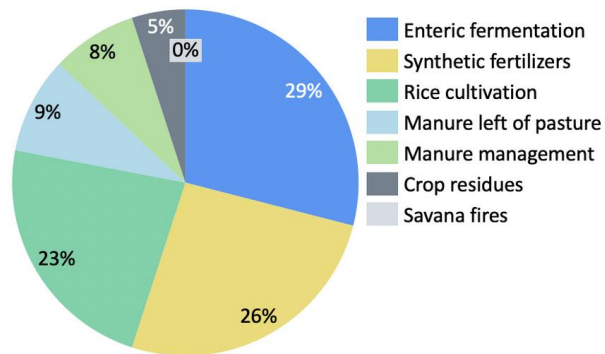




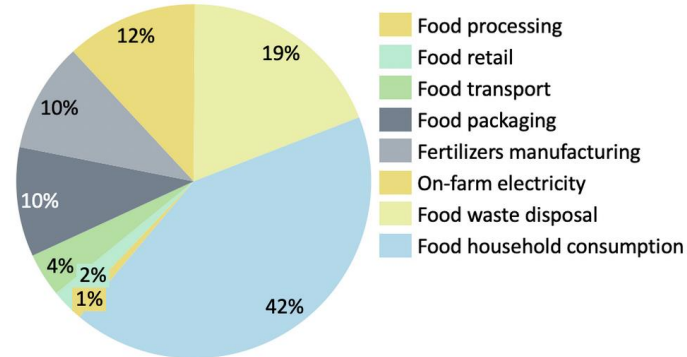
In 2019, food system greenhouse gas emissions in China were 14.4% of China's total emissions.



**Farm-gate emissions (2019)**



**Pre- and post production emissions (2019)**



Source: FAOSTAT, 2022





# China's forests are a next CO2 sink.

Figure 23-1: China's Forests (2019)



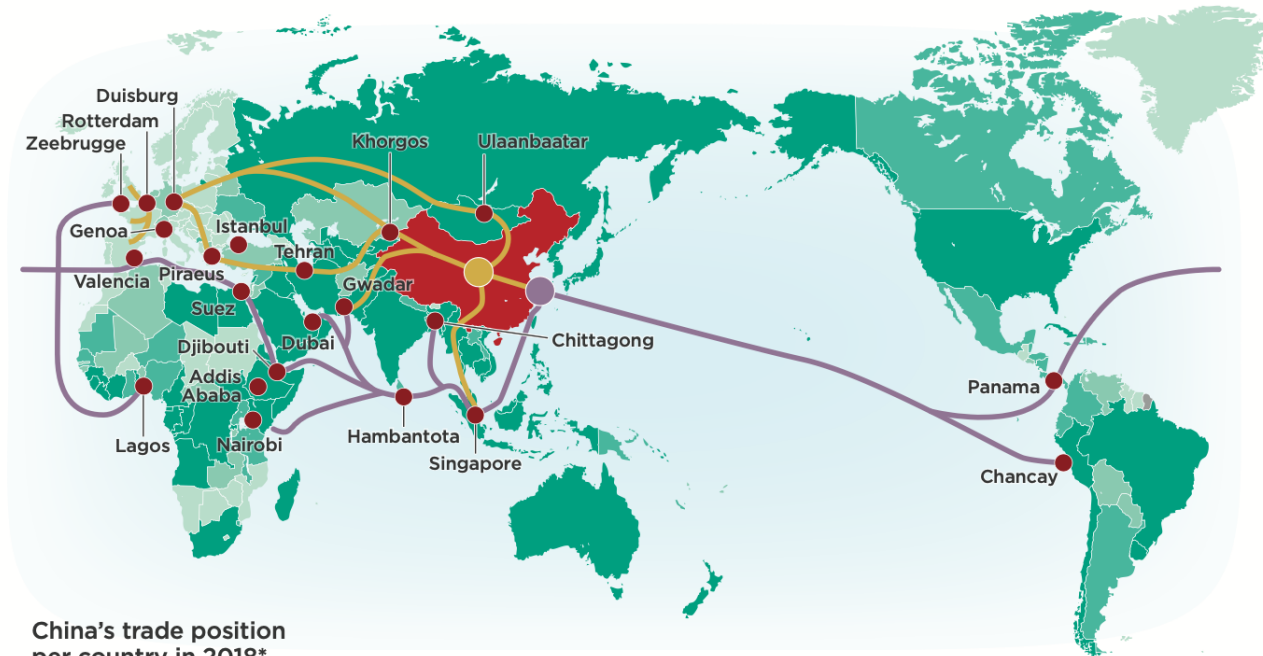
Source: National Forestry and Grasslands Administration<sup>7</sup>



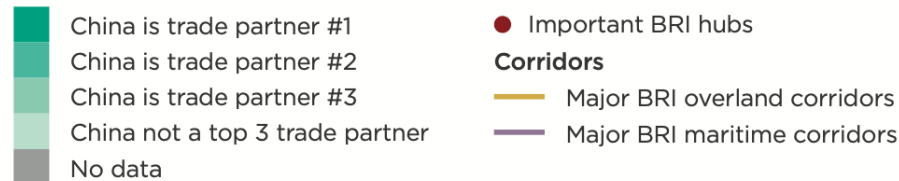


# Belt and Road Initiative has significant climate change impacts.

Figure 26-1: Belt and Road Initiative



China's trade position per country in 2018\*



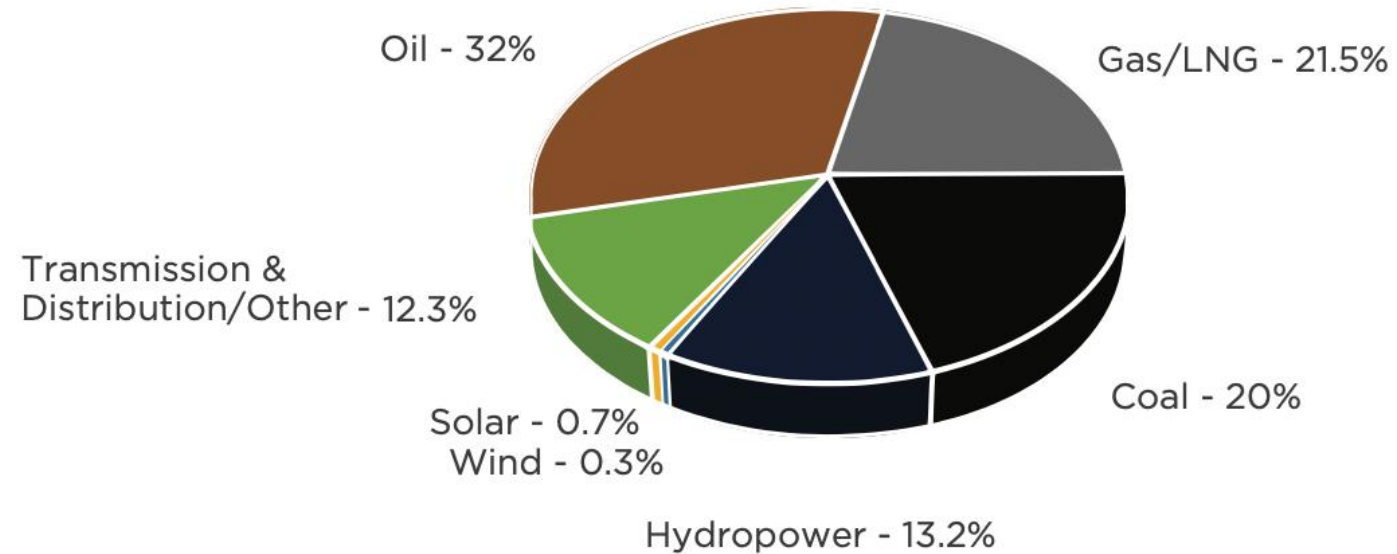
\* Based on IMF Direction of Trade Statistics 2018: Exports (FOB) + Imports (CIF) with China per country, relative to other countries

Source: Belt and Road Research Platform<sup>5</sup>



## Most BRI energy sector finance has been for fossil fuels.

**Figure 26-2:** China Development Bank and China Exim Energy-Sector Lending by Energy Source, 2016-2021



Source: Boston University Global Development Policy Center<sup>83</sup>

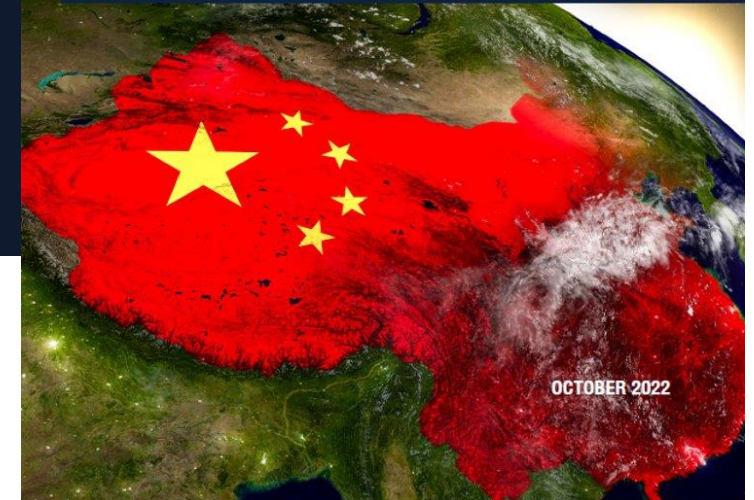


1

President Xi Jinping's pledge that China will achieve carbon neutrality by 2060 elevates low-carbon development as a priority within the Chinese system.

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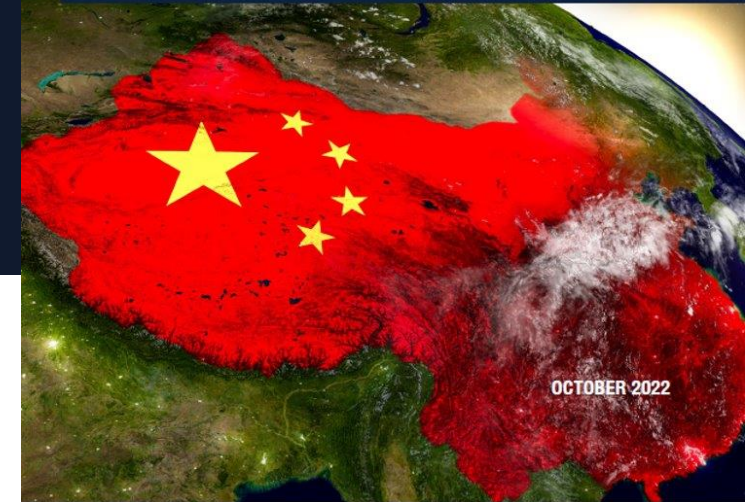


2

In the near-term, COVID control, economic growth and energy security are higher priorities for Chinese policymakers than low-carbon development.

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3

The Chinese government's climate change goals often align with other policy priorities.

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## 4

**The state's central role in the Chinese energy sector both helps and hinders the low-carbon transition.**

### Helps

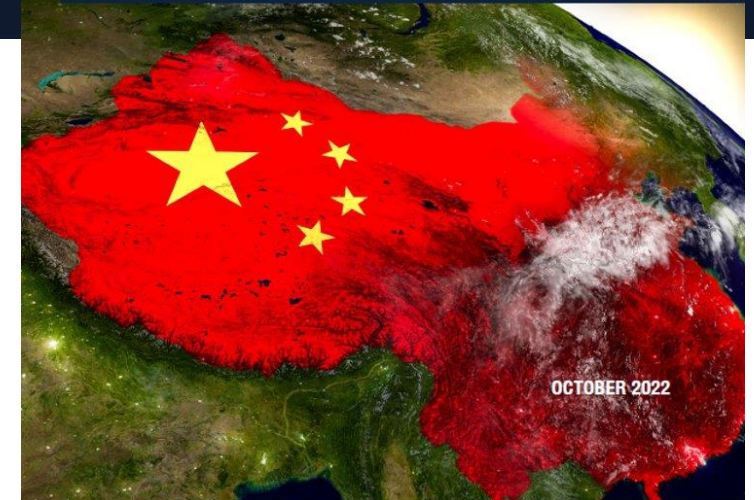
- Facilitates long-term planning.
- Increases funds available for low-carbon transition.

### Hinders

- Contributes to overcapacity in many industries.
- Results in less innovation.

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5

**Fifth, China—like all major emitters—will need to do more for the world to achieve its climate goals.**

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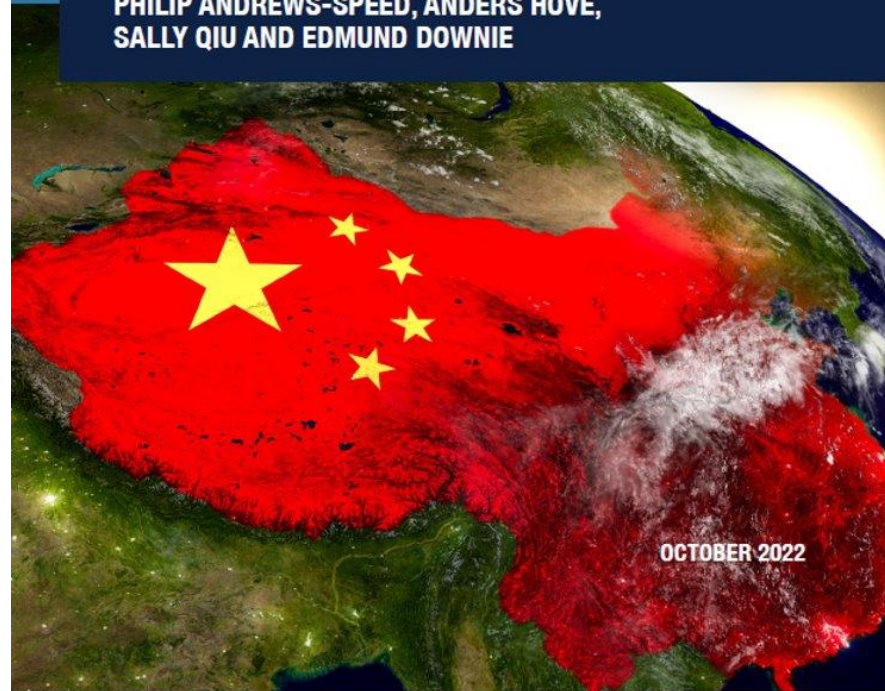
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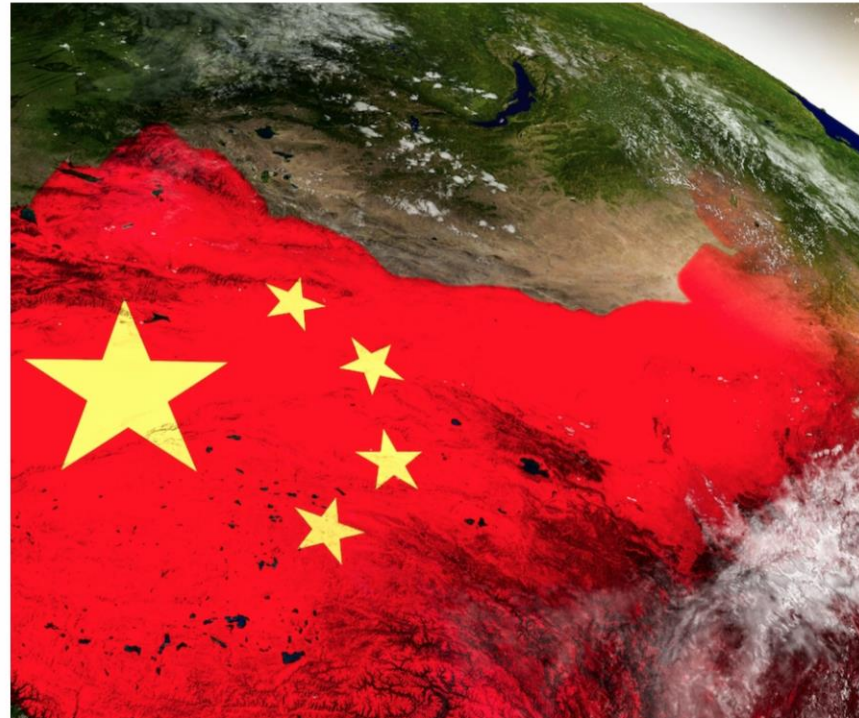


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David Sandalow



# Thank you

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