

# The Chinese Way in Climate Policy

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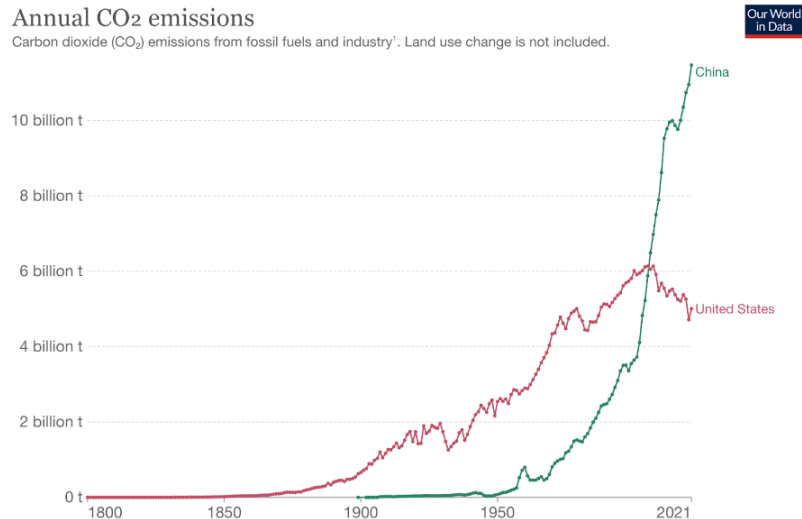
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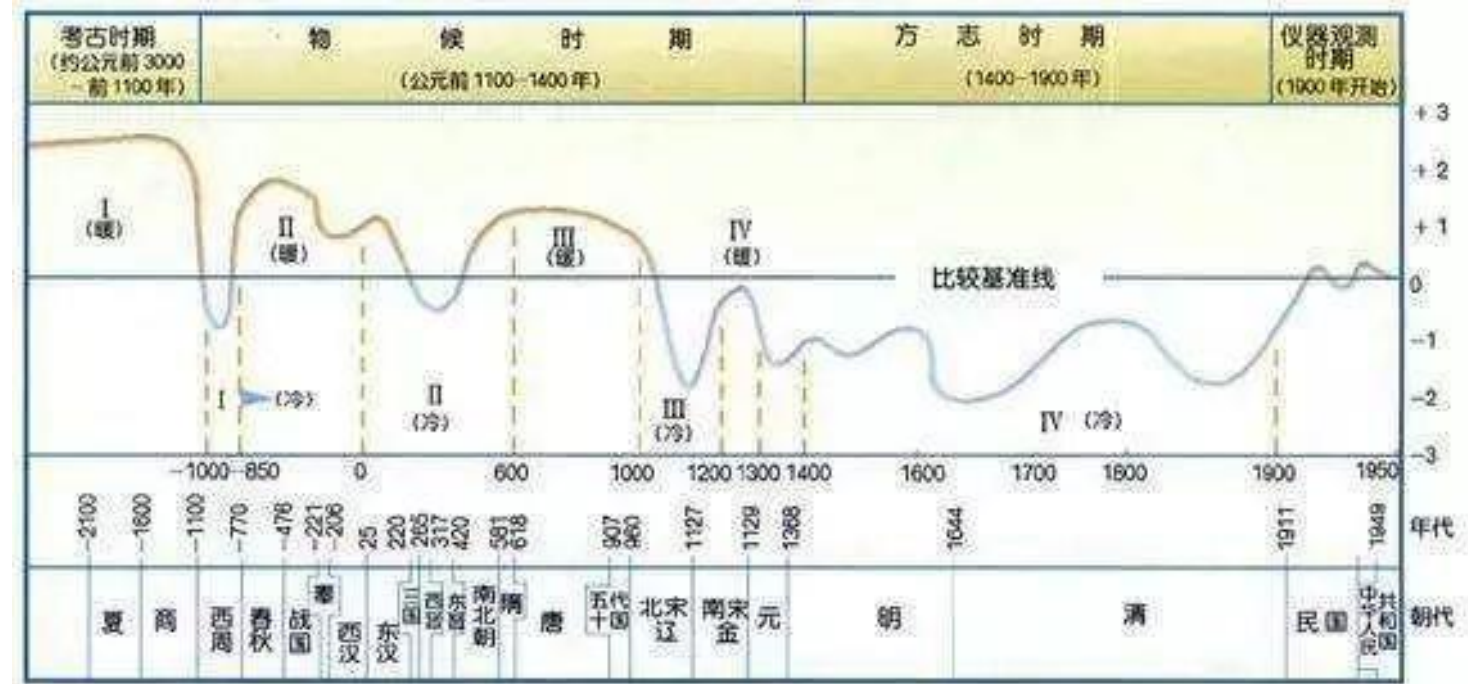
# Climate and China

- ❑ China is the country with the **largest emissions** of greenhouse gasses (GHG) in the world
- ❑ But China is also a country that will be seriously **affected** by climate change – actually, it already is...



# A bit of Chinese History

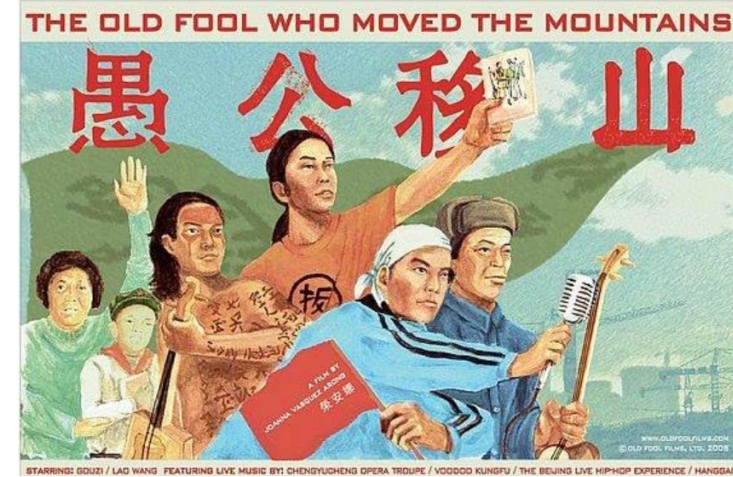
- Climate change has influenced China for several thousand years
  - **Often led to the decline** and rise of dynasties
- China **suffered** during the “medieval ice age”
  - Fall of the Ming dynasty 1368 to 1644
  - Taiping Rebellion during 1850-64



Chinese climate scientist Zhu Kezhen's graph

# Environmental Policy During the Early Years of the People's Republic of China

- ❑ Mao Zedong believed that **human beings should conquer nature**
  - The Old Fool Who Moved the Mountains
- ❑ As Mao's Cultural Revolution abated, **Zhou Enlai encouraged scientific research** on environmental pollution in 1972
  - Sent a Chinese delegation to the United Nations Conference on the Human Environment in Stockholm
  - First National Conference on Environmental Protection in 1973
- ❑ **State Environmental Protection Administration** set up 1984
  - Environmental legislation + economic incentives



# Awareness of Climate Change and International Scientific Cooperation

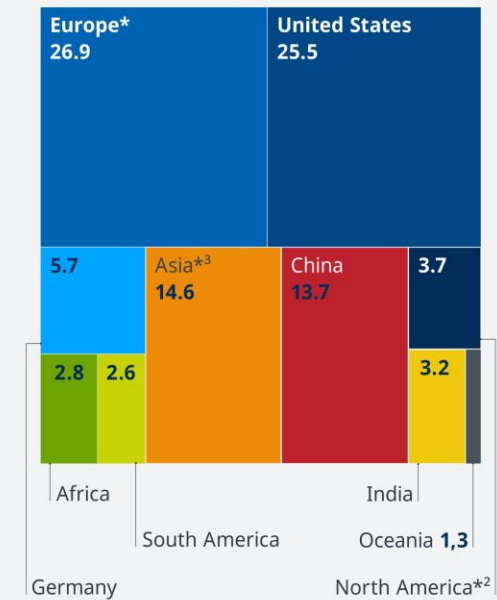
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- Chinese scientists raised **awareness** of global climate change
  - Ye Duzheng participated in the UN World Climate Research Programme 1982
  - Establishment of China's **National Committee on Climate Research** in 1985
  - Participation of scientists and officials, preparations for negotiations for the **1997 Kyoto Protocol** – where China was categorized as non-Annexe B country, i.e., did not have to reduce emissions
- **National climate change expert committee** set up in 2007 with leading scientists, to advice leadership
  - **White paper** on China's Policies and Actions for Addressing Climate Change released in 2008
  - Developed China's position for COP15 at Copenhagen Summit 2009

# China's Climate Policy Key Principles

- ❑ China has emphasized Kyoto Protocol's “**common but differentiated responsibility and respective capabilities**”
  - Industrialized countries are seen as carrying the main responsibility for **reducing emissions**
  - Industrialized countries have more technical capabilities and should **transfer** these to developing countries
  - Industrialized countries should also **finance clean development** in the Global South
- ❑ Mitigation of emissions should **not hamper** economic development
  - China resisted US/EU efforts to commit the country to a fixed level of emissions, and instead proposed to reduce emissions intensity

Share of total CO2 emissions 1750-2019  
In %



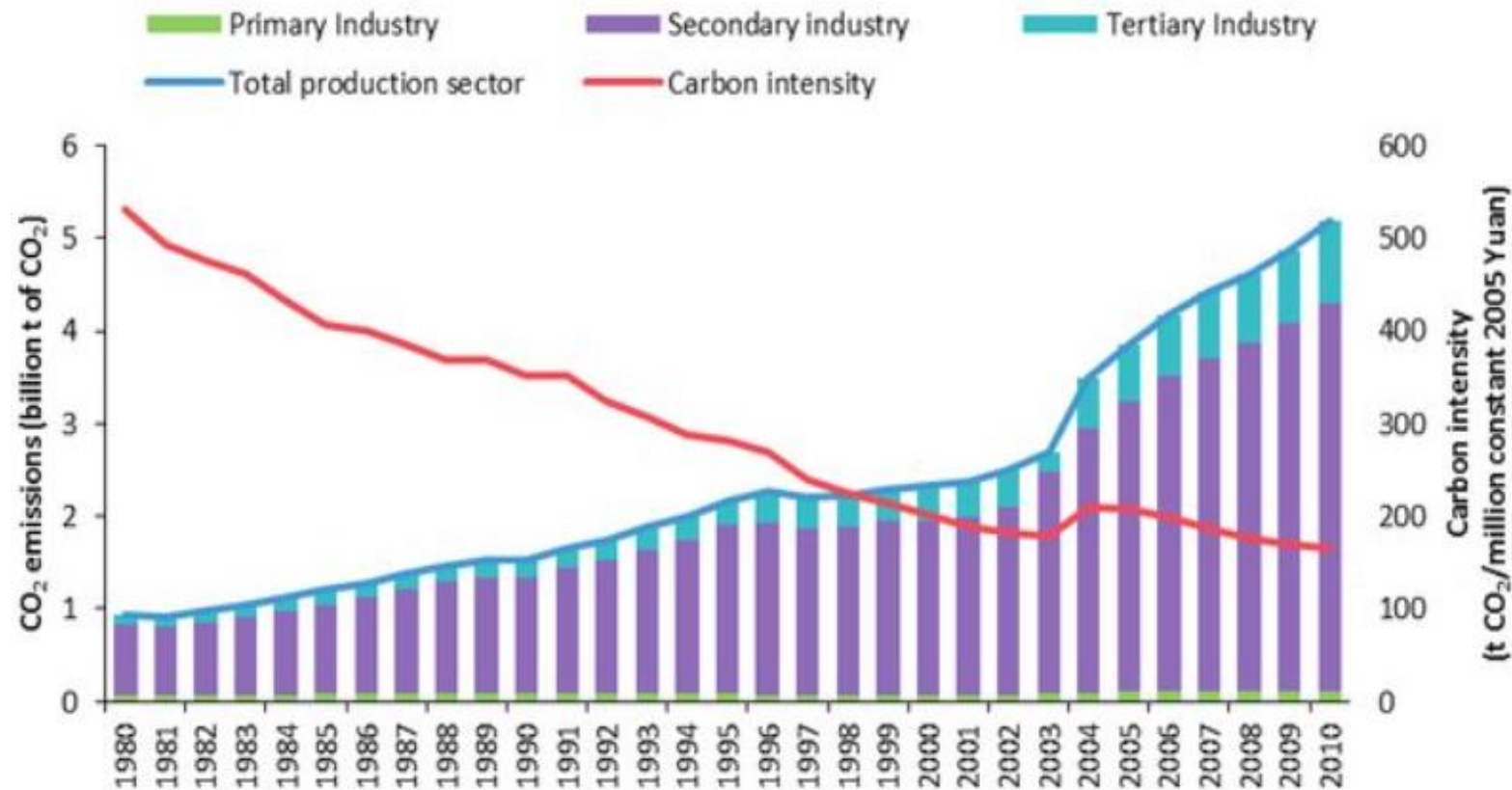
This measures CO2 emissions from fossil fuels and cement production only — land use change is not included.

Source: ourworldindata.org | \*without Germany / \*\*without US /  
\*3 without China and India



# Carbon Intensity as the Key Climate Policy Metric in China

- China had reduced its “energy intensity” by 20% during the 11<sup>th</sup> Five Year Plan (2006-2010)
- This success inspired a focus on “carbon intensity”, defined as **carbon emissions per unit of GDP**, which meant that the Chinese economy/carbon emissions could continue to **grow** while carbon intensity was reduced



# International Negotiations and Cooperation

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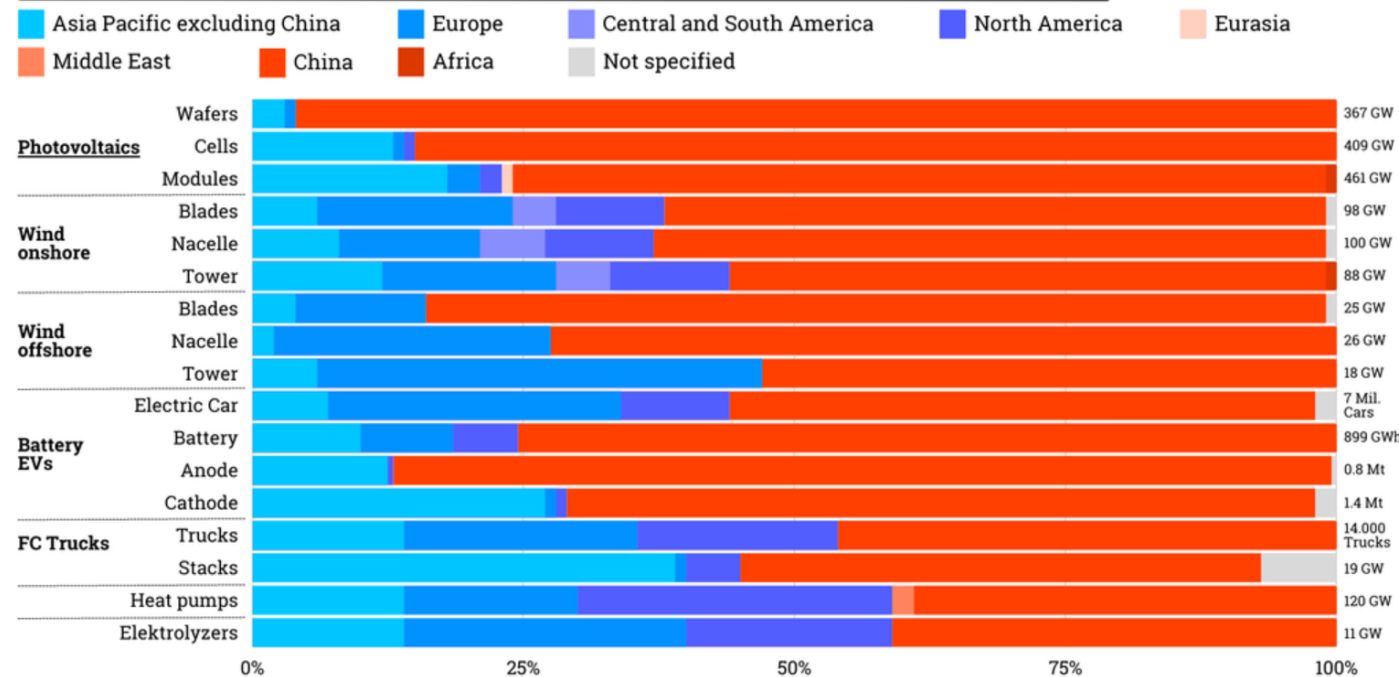
- ❑ China was blamed for the **failure** at Copenhagen COP15 in 2009
- ❑ In **2014 Obama and Xi** agreed on a U.S.-China Joint Announcement on Climate Change
  - Working towards the below 2 degree C global temperature goal
  - Stressed the importance of adaptation to climate change
  - China will lower carbon dioxide emissions per unit of GDP by 60% to 65% from the 2005 level by 2030
- ❑ Followed up with negotiations for the **Paris Agreement 2015**
  - But then **climate denier Trump** was elected and cancelled US commitment
- ❑ This provided an opportunity for China to appear as a “**climate leader**” together with the EU



# Betting on Clean Technologies

- Chinese **industrial policies** have emphasized the development of **clean technologies**
- Expanded supply chains for key technologies such as wind and solar power
- Western reactions in Financial Times: “China has **cornered** the market for clean tech”

**Green tech production capacities by region 2021**



# From Nationally Determined Contributions (NDCs) to “Dual Carbon” Targets

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- China's NDCs submitted 2015 included:
  - To **lower CO2 emissions per unit of GDP** by 60% to 65% from the 2005 level
  - To **increase the share of non-fossil fuels** in primary energy consumption to around 20%
  - To **increase the forest stock** volume by around 4.5 billion cubic meters on top of the 2005 level
- Xi Jinping's announcement of “**Dual Carbon**” targets in 2020
  - To 1) have CO2 emissions **peak** before 2030 and 2) achieve carbon **neutrality** before 2060
  - China committed to **fixed** caps (not carbon intensity targets) on GHG emissions

# Action Plans

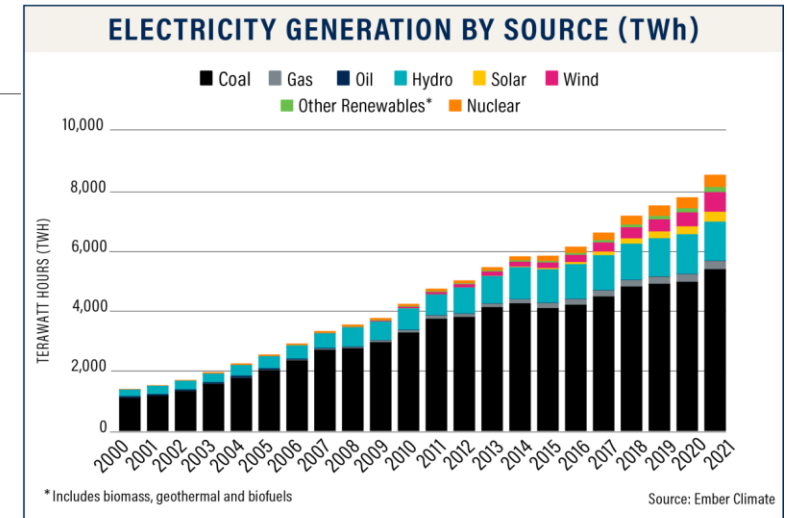
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- ❑ Ministry of Ecology and Environment (MEE) January 2021 Guidelines for action during 14<sup>th</sup> FYP (2021-2025)
  - R&D and industry support for **wind, solar, hydrogen and nuclear energy**
  - Upgrading the national electric **power grid**, to integrate renewable energy sources
    - **Reducing curtailment**, such as the utilities restricting access for more than 30% of newly installed solar capacity in Xinjiang province in 2016
- ❑ Establishing a **national emissions trading system** (ETS) in 2021 for more than 2,200 companies in the electric power sector
  - Based on Chinese ETS pilot schemes in provinces developed since 2013
  - But **due to price regulation** providing little incentives for green innovation

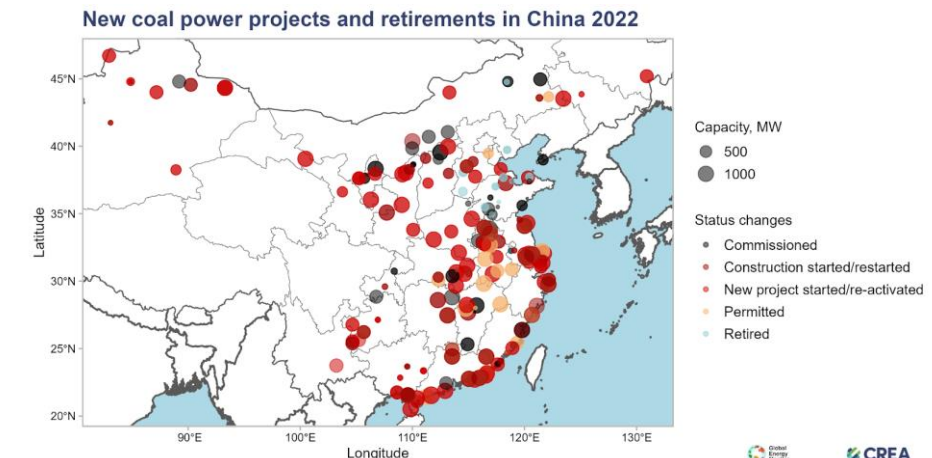
# Coal – the Achilles Heel of China's Climate Policies

- China relies on coal for most of its energy supply
  - Around **70% of electricity** is produced in coal-fired utilities
  - Despite a pledge to cancel approval for new coal-fired plants, local governments add **2 new plants every week**
  - Many plants running at less than full capacity
  - The **coal and power lobbies** are strong in China!

- China built many coal-fired plants overseas during the initial years of the Belt and Road Initiative
  - But Xi Jinping has announced that in the future, China will only offer green energy projects

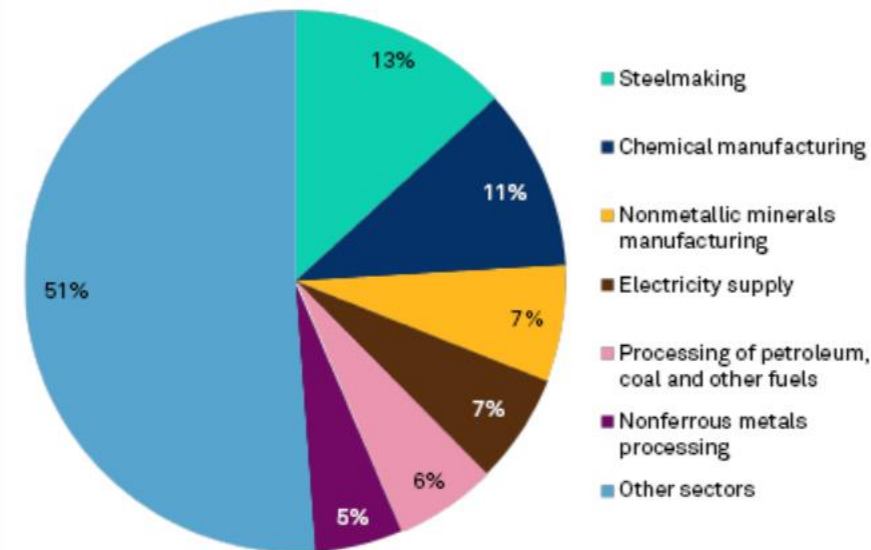


While coal remains the dominant source of electricity generation in China, the share of renewables has grown noticeably in the past decade.



# Energy Consumption

China's energy consumption by sector in 2018

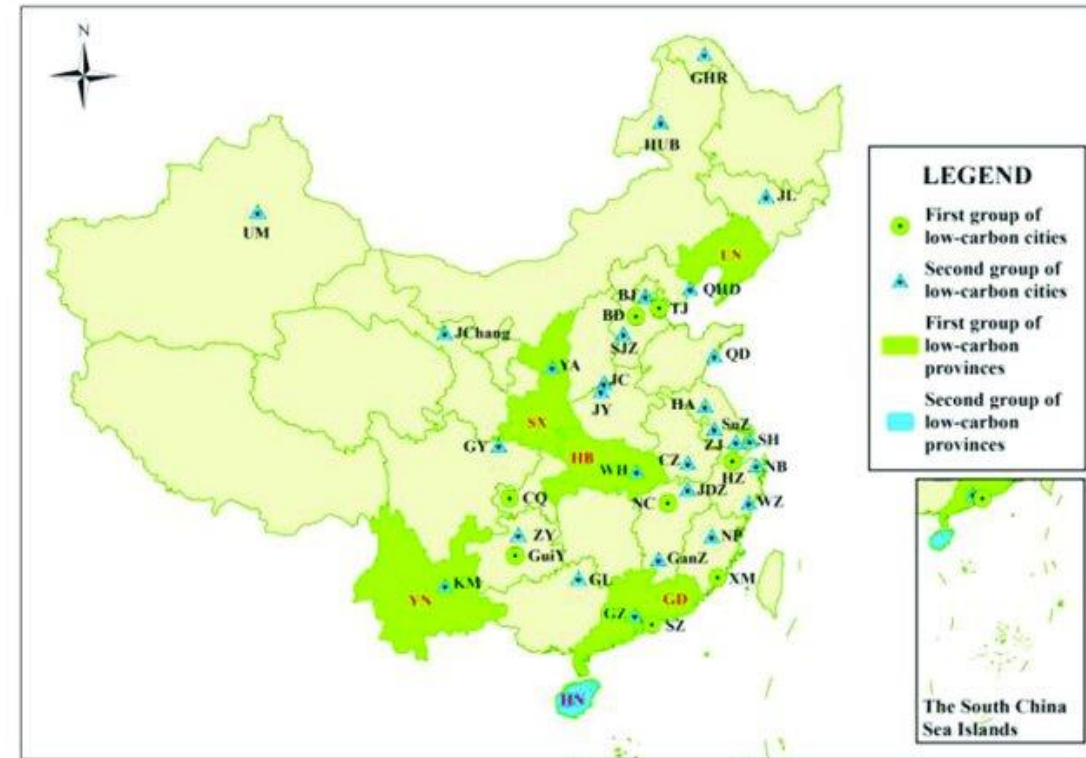


Data released Sept. 23, 2020.  
Source: China Statistical Yearbook 2020 compiled by National Bureau of Statistics of China

- **Demand** for electric power is increasing, but still constitutes a minor part (7%) of energy consumption
- Processing of **metals and chemicals** consumes almost half of energy demand
  - China is still struggling to raise the energy efficiency of these industries

# Low-carbon Cities and Provinces

- ❑ **Campaigns** for new policy initiative are a distinctive Chinese feature
  - In order to promote low-carbon development and innovation, selected municipalities were approved as **low-carbon pilot cities**.
  - This strategy was implemented by China's **National Development and Reform Commission** in three batches of provinces and cities in 2010, 2012, and 2017
- ❑ Results have been mixed, but strong local political support and funding resulted in more innovation





# Xi Jinping – Climate Policy Champion?

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- ❑ From an early date, Xi Jinping has emphasized “**ecological civilization**”
  - “Lucid waters and lush mountains are invaluable assets”
  - “One of the key characteristics of China's socialist modernization is **human-nature harmony**”
- ❑ But Xi is also deeply concerned with the **security** of the rule of the Chinese Communist Party
  - Avoid power blackouts that will create social unrest
  - “we will advance initiatives to reach peak carbon emissions in a well-planned and phased way, in line with the principle of **getting the new before discarding the old**”

# US-China Tech War & Climate Policy

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- ❑ After **Trump's trade war**, people had expected Biden to ease the US-China relationship
  - But Biden's administration has actually **increased sanctions**, focusing on **semiconductor** and **artificial intelligence** technologies
  - The Chinese leadership has recognized the new geopolitical environment, and argue that the **US is trying to "contain" China** and block its economic development
- ❑ Climate change issues were **supposed to be less affected**, but Biden's "Inflation Act" represents a neo-mercantilist green industrial policy
  - China's **capabilities in production** of green technologies could be complementary to the US green R&D capabilities
  - But US Congress and Biden administration are considering **new sanctions/tariffs against Chinese green technologies**

# Thank You for Your Patience!

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