

CHINA'S ROLE IN FIGHTING CLIMATE CHANGE, DEPENDING ON WHAT YOU READ.



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CHINA IS A REPONSIBLE MAJOR COUNTRY IN ADDRESSING CLIMATE CHANGE

Long Dingsir?
Chrisas Georal Consal to Perth
Human beings share a common future
in the face of the challenges presented
by global climate change, and no country can make itself immune from the
impact. The Intergovernmental Panel
on Climate Change's (IPCC) report
in 2021 showed that the five decades

CONCEPT

In Chin, it is already a national consensus and half mounters are not the parts to proposed and promoted by our president, NJ Juning, Ecological conservation has been pressing forward to common be development after the very large annual economic growth of 5, pier cent one of the Two promps' of the overall plant for the country's development after the very large annual economic growth of 5, pier cent one of the Two promps' of the overall plant for the country's development and economic provided in the principle of the country's development and economic provided in the principle of the country's development and economic provided in the principle of the country's development and economic provided in the principle of the country's development and economic provided in the principle of the country's development and economic provided in the principle of the country's development and economic provided in the principle of the country's development and economic provided in the principle of the country's development and every a summary of the principle of the principle of the country's development and economic provided in the principle of the country's development and every development and every development and every development and economic energy it saved accounted for about half of the principle of the country development and every development and



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THE REALITY INSIDE CHINA NOW

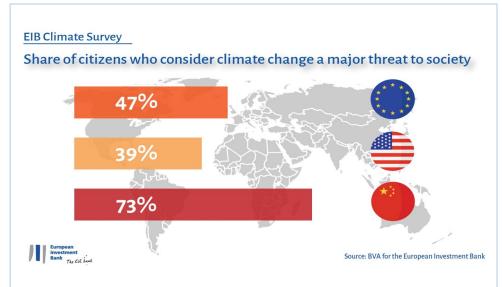
TOP POLITICAL PRIORITY:

Core Part of XI's Eco-civilization theory, enshrined in in the Constitution

Carbon neutrality (2060) goal included into China's long-term social and economic development plan

Two former environmental ministers promoted to political bureau members (24 in total)

PUBLIC AWARENESS



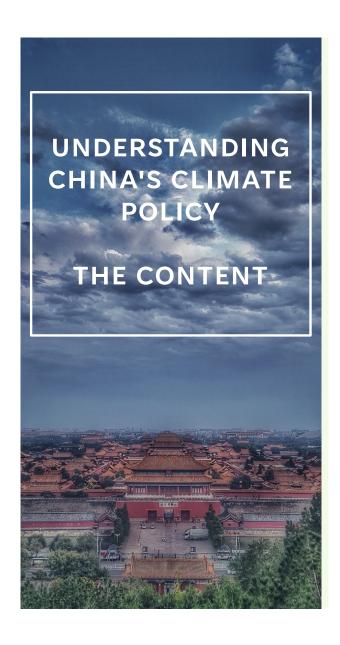
BUZZ WORDS FOR BUSINESS AND INVESTORS (GAME CHANGER)

CICC: China's largest Stateowned investment bank.

Over 50 PE fund Set 2021 Guidebook to Carbon Neutrality in China

Macro and Industry Trends under New Constraints

3/4/23 IGDP



1. IS CHINA SERIOUS ABOUT **CLIMATE CHANGE?**

Si, Si, Si

- Yes, and likely to overperform

2. WILL CHINA DELIVER ITS

- Very comprehensive policy system in place

3. IS CHINA DOING ENOUGH?

On track to overperform the 2030 pledge,

CAN be better

4. CHALLENGES AHEAD.

- Economic recovery

CLIMATE PLEDGE?

- Energy security, or just "SECURITY"
- Politicization of climate change

5. LEVERAGING CHINA'S ROLE IN INTERNATIONAL CLIMATE CHANGE COLLABORATION.

Financial contribution

Global south decarbonization

WHY CHINA IS STILL BUILDING COAL POWER PLANTS?

IGDP 5 The onomist



Weekly edition

Q Search >

1. IS CHINA SERIOUS ABOUT CLIMATE CHANGE?

Podcasts | Drum Tower

Is China serious about clima change?

Our weekly podcast on China. This week, how China balances its security and its commitments to climate

The Political Economy Context

3/4/23

iGDP

2020 Well-round Society

THE POLITICAL ECONOMY CONTEXT

China's Climate Policy Aligns with its Development Strategy

ECONOMIC GROWTH

Resources-intensive growth to High-quality growth New growth engine: clean technologies

ECO-CIVILIZATION

Air Quality Improvement Conservation Forestation Carbon Neutrality

2030 modernization

GLOBAL LEADERSHIP Geopolitical Competition Common Ground for multilateral/bilateral dialogues

> 2050 Mid-level Developed Country

The session adopted 14th Five-Year Plan (2021-25) and the Long-Range Objectives Through the Year 2035

New targets for 2021-25



Realize sustained and healthy economic development



Prioritize the development of agriculture and rural areas, and fully advance rural vitalization



Enhance social etiquette and civility; core socialist values shall be embraced by the people



Speed up the "dual circulation" strategy



Make new progress in building an ecological civilization



Achieve fuller and higher-quality employment



Enhance multi-tiered social security system and health system



Make major strides in the modernization of national defense & the armed forces



Improve the national administration systems; the role of the government will be better played



Maintain long-term prosperity and stability for HK & Macao, and promote the peaceful development of relations across the Taiwan Straits and national reunification

Vision for China 2035

China is aiming to basically achieve socialist modernization



Making major breakthroughs in core technologies in key areas, China will become a global leader in innovation



China will finish building a modernized economy



The per capita GDP will reach the level of moderately developed countries. The size of the middle-income group will be significantly expanded



Eco-friendly ways of work and life will be advanced to cover all areas of society. Carbon emission will steadily decline after reaching a peak



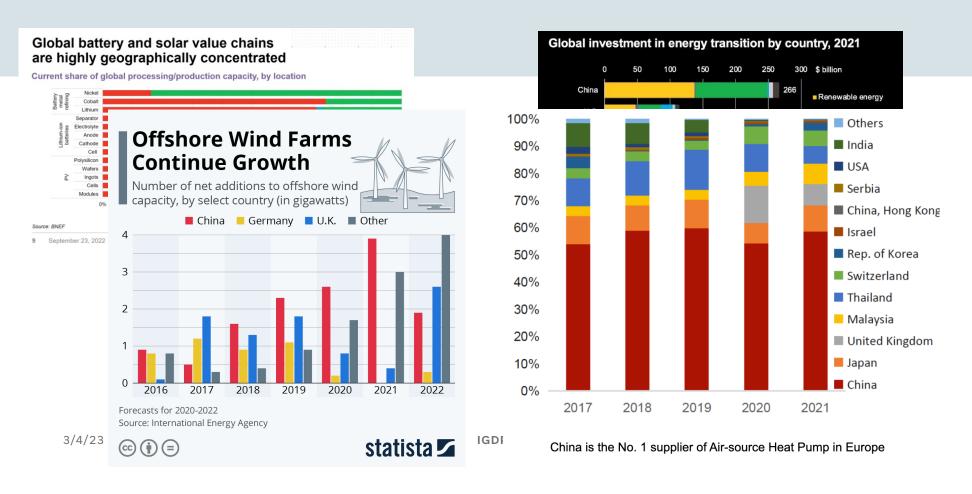
The opening-up will reach a new stage with substantial growth of the country's strengths for participating in international economic cooperation and competition



The implementation of the Secure China initiative will be promoted to a higher level

CLIMATE ACTIONS & MARKET OPPORTUNITIES

Electric Vehicles, Solar Panels, Off-Shore Wind, Heat pumps.....



Global Development Initiative

"No country should be left behind"

人类命运共同体

A GLOBAL COMMUNITY OF SHARED FUTURE

LEADERS SUMMIT

中美低碳峰会

GLOBAL LEADERSHIP

EU, US, UK, FRANCE, GERMANY.....

AFRICA

Declaration On China-Africa Cooperation On Combating Climate Change, Dec. 2021

BRICS

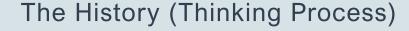
Joint Statement issued at the BRICS High-level Meeting on Climate Change

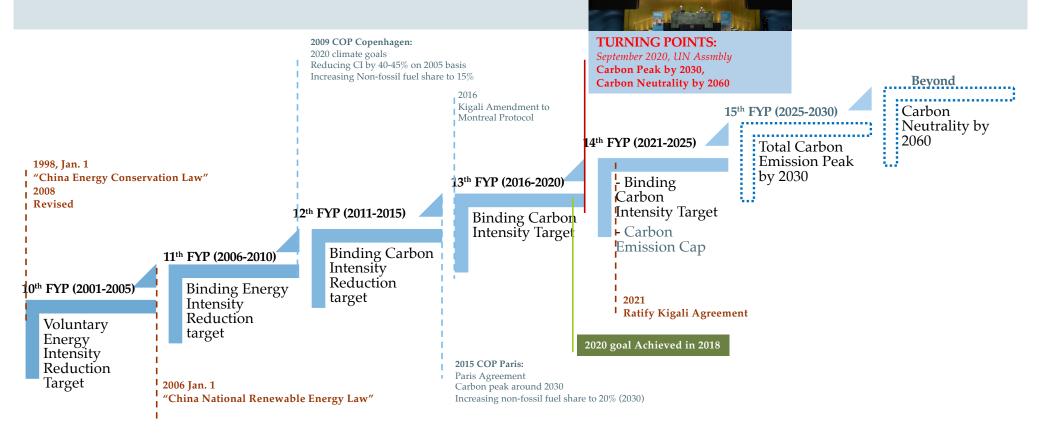
SOUTH-SOUTH 3/4/23

F-Gases (Kigali Amendment), RE, biodiversity



CHINA'S CLIMATE TARGETS

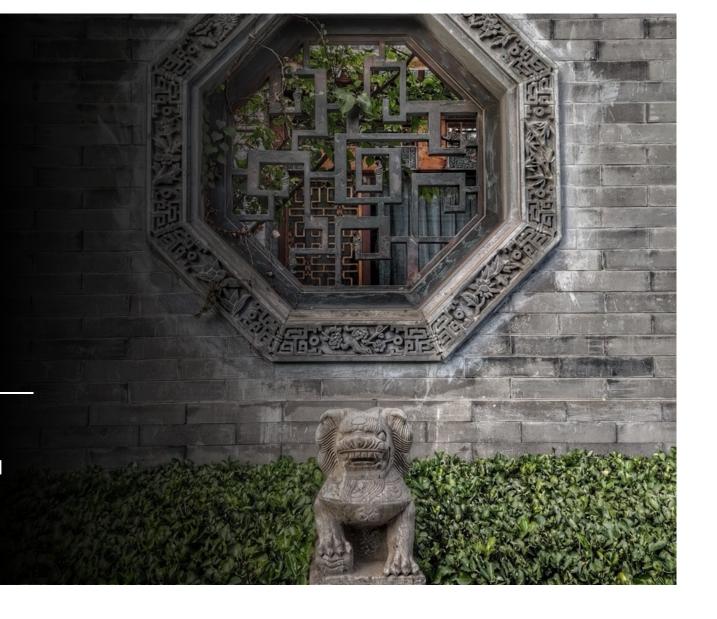






The Policy System

The over-performance rack record



ON SEPTEMBER 22, 2020, CHINA ANNOUNCED ITS "DUAL-CARBON" TARGETS

2030

2060

Carbon Peak

Energy-related CO₂ emissions peak before 2030

Carbon Neutral

Net GHGs emissions reach zero by 2060



Decarbonize Economic Growth Carbon Intensity 60-65% reduction (2030-2005)



Energy Transition
Non-fossil fuel share of total energy
consumption around
25% by 2030



Forestation Increase forest stock by 6 Billion Cubic Meters



Buildings and

Transportation
All new buildings meet
green building code by
2025
NEV market share
reach 40% by 2030

The Official Definition of Carbon Neutrality not yet clarified.

According to IPCC:

Net emissions refers to the sum of all emissions and sinks, which are things that absorb more GHG than they emit

The scope of emissions generally include all major GHGs (i.e. CO2, CH4, N2O, and F-Gases)

3/4/23 IGDP

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EMISSION TARGETS ARE BACKED BY ENERGY AND SECTORAL TARGETS, DOMESTIC AND INTERNATIONAL "1+N" POLICY SYSTEM

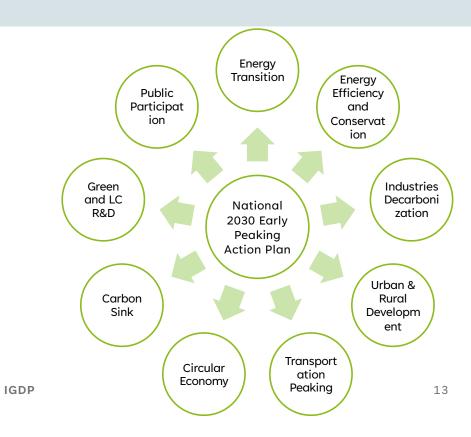
Domestic 1+N Strategy and Policy System

President Xi's Announcements at UN and Other Occasions

Working Guidance for Carbon Dioxide Peaking and Carbon Neutrality in Full and Faithful Implementation of The New Development Philosophy

"1": 2030 Early Peaking Action Plan of the State Council

"N": Sectoral Action Plans



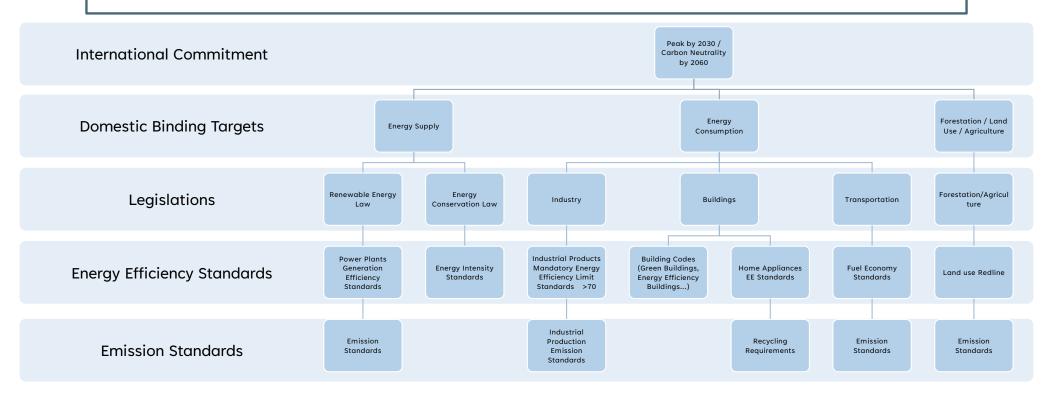
	2021 NDC & MID-CENTURY LONG-TE	2015 NDC	
	2030	2060	2030
Total Carbon Emissions	 Peaking before 2030 Establish absolute total CO₂ (carbon cap) emissions control system To develop non-CO₂ GHGs control system HFCs reduction goal regulated by Kigali Amendment 	Net Zero Before 2060	• Peaking
Carbon Emission Per Unit GDP Reduction Compared with 2005	• Over 65%		• 60-65%
Non-Fossil Fuel Share of Primary Energy Consumption	Over 25%Total Solar and Wind Capacity to reach 1,200GW	• Over 80%	• 20%
Fossil fuel	 Coal consumption increase will be strictly controlled between 2021–2025 and decline between 2025–2030. petroleum consumption will reach its peak plateau by 2030 		Total consumption control
Industry Decarbonization	Energy efficiency in key industries will reach the advanced international level	Economy-wide energy efficiency reach international advance level	Mandatory industrial products energy consumption standards.
Transportation	NEVs share will reach about 40% Ground transportation oil consumption peak		
Buildings	 By 2025, 100% of new buildings need to meet green building codes. Rooftop PV installed in 50% new public buildings and industrial buildings 		
Increase forest stock volume increase compared with 2005	6 billion cubic meters		4.5 billion cubic meters
Others	Enhance MRV system Set national low carbon transition fund		

SECTORAL GOALS

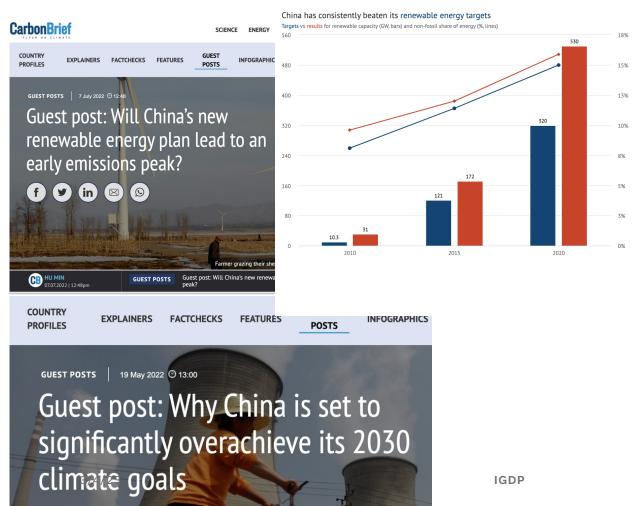
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Enhancement compared with 2015 NDC

HOW CHINA'S CLIMATE TARGETS INSTITUTIONALIZED INTO DOMESTICAL LEGAL AND INSTITUTIONAL SYSTEM



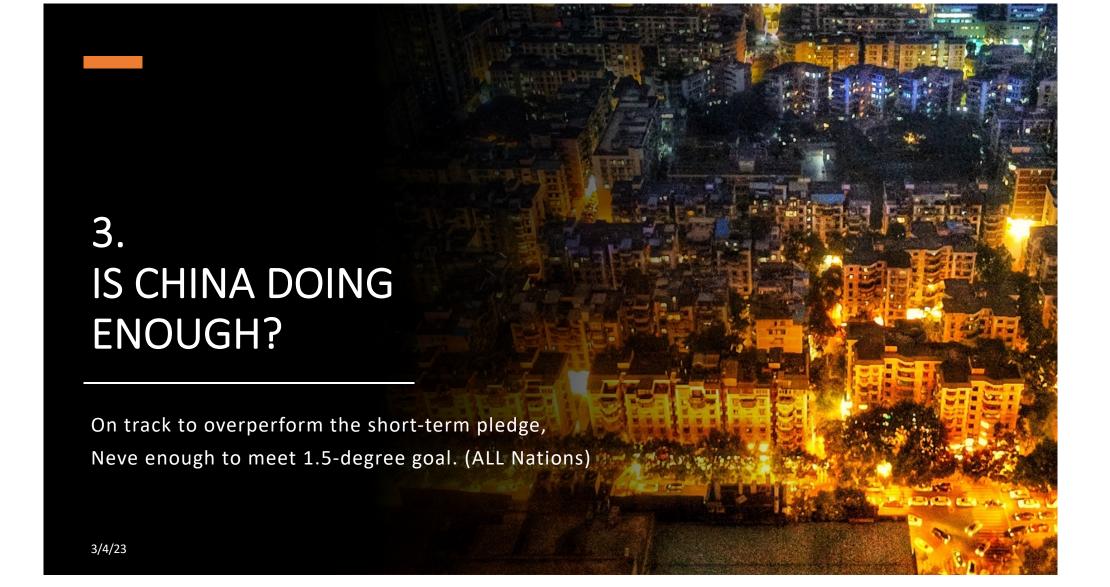
CHINA HAS OVERPERFORMED 2020 CLIMATE GOALS IN NDC 2015



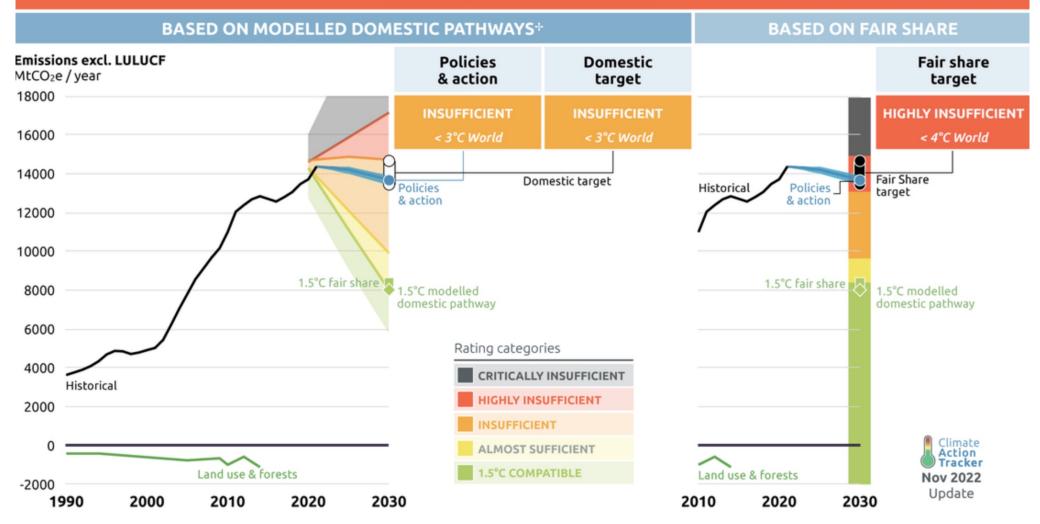
Policy Targets	2016	2017	2018	2019	Target 2020	Target 2020	Target 2030	Target 2060	Target Type in Domestic planning
CO ₂ emissions per unit of GDP fell compared to 2005		46%		48%	40%-45%		>65%		Mandatory
The share of non-fossil fuels in primary energy consumption	13.0%	13.6%	14.5%	15.3%	15%		25%	>80%	Mandatory
Forest stocks increased by 2005 (100 million cubic meters)	Achieved 2020 target in 2013			13	53	60		Mandatory	
Average coal consumption of newly-built coal-fired generating units (g standard coal/kWh)			<300		300				Mandatory
The share of natural gas in primary energy consumption			7.6%	8.1%	10% or more		15%		Predictive
Coalbed methane production (100 million cubic meters)			183.6		300				Predictive
Wind power installed (100 million kilowatts)	1.5	1.64	1.84	2.1	2				Predictive
Photovoltaic installation (100 million kilowatts)		1.3	1.74	2.04	Around 1				Predictive
The annual utilization scale of geothermal energy (10,000 tons of standard coal)		1900			5000				Predictive
The added value of strategic emerging industries accounts for the proportion of GDP		8.90%			15%	>17%			Predictive
Reduce the production and consumption of HCFC-22 for controlled use from the 2010 level					35%	67.5%			Mandatory
TControl HFC-23 emissions					Effective control				Mandatory
Fertilizer and pesticide utilization	Z	ero growth			Zero growth				Predictive
The share of green buildings in newly built buildings			40%	65%	50%	100%			Predictive
The share of public transport in motorized modes in large and medium cities					30%				Predictive

Below expectation

Beyond expectation



CHINA OVERALL RATING HIGHLY INSUFFICIENT

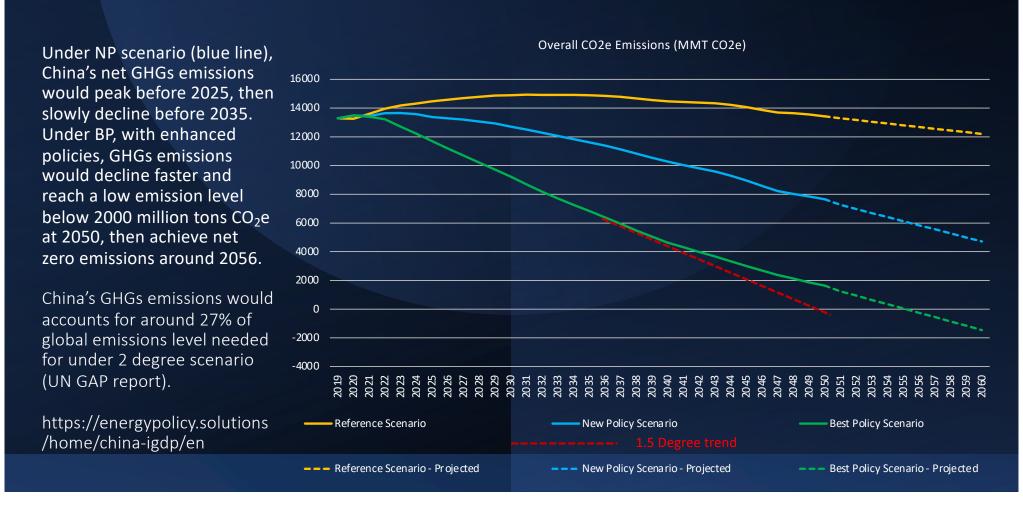


The Analysis Based on Our Modeling Results

Scenarios Analysis: Reference, New-Policy Scenario, Best-Policy Scenario

	POWER	INDUSTRY	TRANSPORTATION	BUILDINGS	Non-CO ₂
New Policy (NP) [NDC Scenario] Stated policies or studies from authoritative sources related to the 14th FYP and 2035 Guidelines	Energy Revolution Strategy (2016 to 2030) Other RE Policies	Green Industrial Manufacturing 2025	Long-term Development Plan for the Automotive Industry" "New Energy Vehicle Industry Development Plan (2021-2035)"	Green Building Action Plan 2020 Green Heating Program Green Cooling Program	Kigali Amendment Coal-bed Methane Development and Utilization 13th Five- Year Plan,
Best Policies Scenario (BP) China Domestic BP EU Green New Deal US State (California) BAT Potential	EU RE goal US Zero Emission Grid Phase Out Coal Strategies	EE level reach international best before 2035 Zero emission iron&steal technologies CCS	NEV market share 100% by 2030, in Hainan Net Zero V. market share 100% by 2035 in EU countries CA clean truck regulation	Zero Emission Building Codes in EU, US, CA China Zero Emission Building Codes being researched	Early Timeline to Phase down HFCs

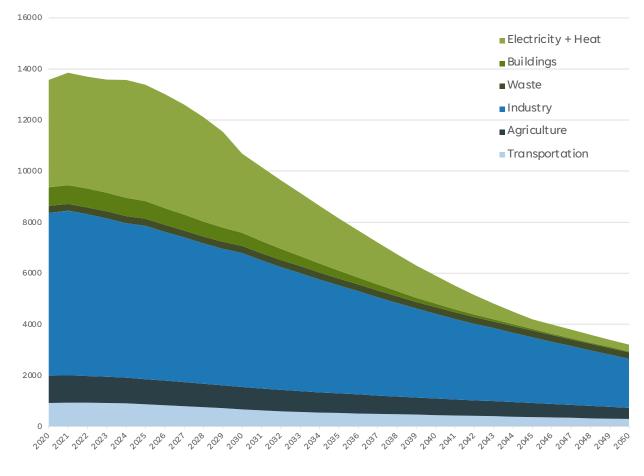
Existing climate actions would lead to early peaking around 2025, even before, but not sufficient to reach carbon neutrality by 2060, neither 1.5 °C goal (net-zero by 2050).



Hard to abate sector: Industry, Agriculture

EMISSIONS BY SECTOR -BEST POLICY SCENARIO (MMT CO2E)

Sector	2019	2050
Transportation	5.8%	6.7%
Electricity + Heat	25.8%	2.4%
Buildings	4.6%	0.9%
Industry	51.7%	68.2%
Agriculture + Waste	8.9%	17.2%

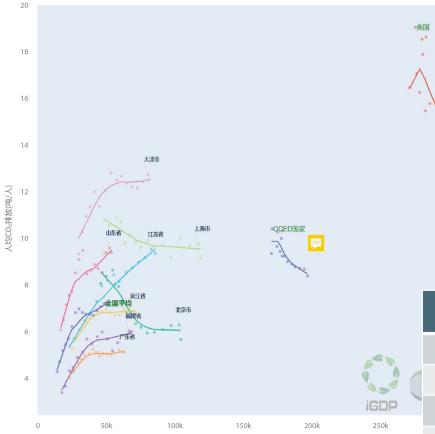


POWER GENERATIONS OF THREE SCENARIOS:
REFERENCE, NEW POLICY(NDC),

Will overperform 2030 wind and solar goal
Over 90% power from RE by 2050
BEST POLICY

22





HARD EFFORTS NEEDED TO ACHIEVE NET-ZERO EMISSION

DIFFERENT SITUATION FROM US, EU

Country	Peak	Neutral (Target)	GDP and Emissions per Capita @ Carbon Peak Year
UK	1970s, plateau, 40% of peak	2050	
Germany	1970s, plateau, 35% of peak	2050	20,000-50,000 USD(2010), 10-22t CO2
US	2007, slow decline, 20% of peak	2050	
Japan	2013, future trend TBD	2050	
South Korea	Not yet	2050	
China By 2030 (target)		2060	14,000 UDS (2010), 8t CO2
India	2040-2045 (expected)	2070	

BETWEEN PEAK AND NET-ZERO EMISSION

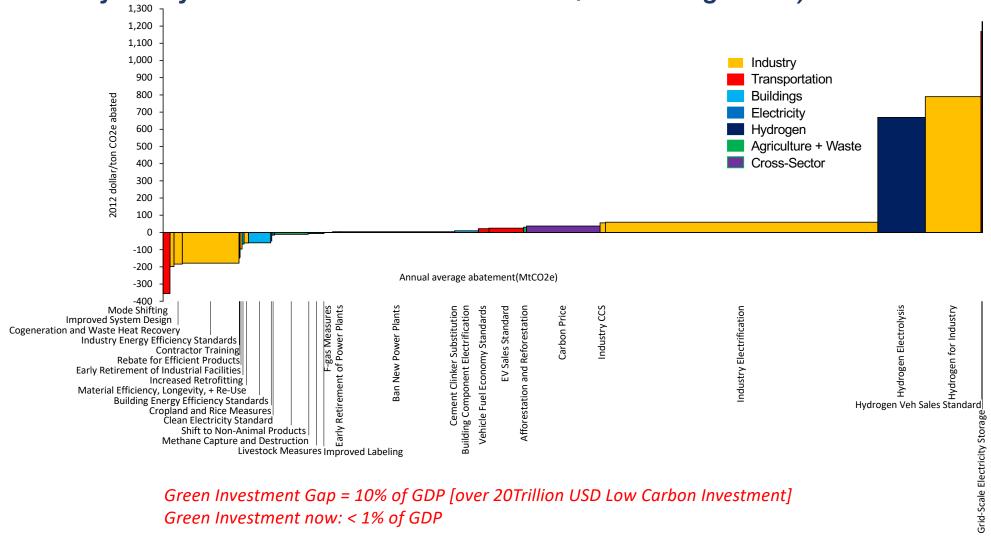
人均GDP(元, 2005不变价)

CHINA: 30 YEARS

OTHER COUNTRIES: 80 YEARS

3/4/23

Effects by Policy: CO2e Abatement Cost Curve (NPV through 2030)





LOCAL IMPLEMENTATION

30 PROVINCES: SCALE AND DIVERSITY

The per capita GDP: Namibia (Gansu) to Portugal (Shanghai & Beijing).

The total emissions of Shandong province, the second largest emitter among all provinces, were twice as high as Germany's (2019)

10 provincial regions emitted more CO2 than the United Kingdom in (2019).

ECONOMIC RECOVERY

GDP growth hit new low in 2022. Over 60% public investment into non-green projects

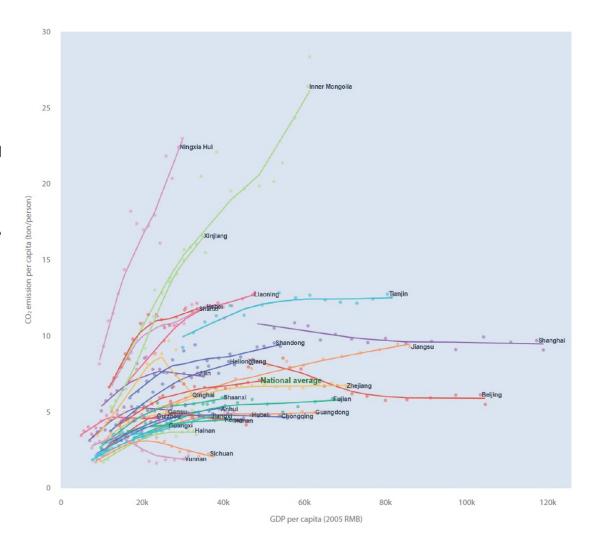
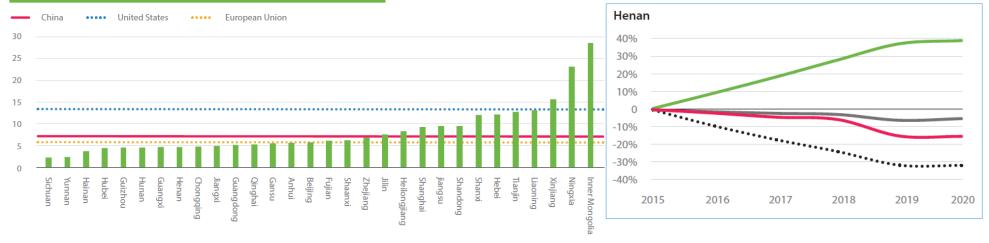


FIGURE 6. Per capita CO₂ emission by provincial region (tCO₂/capita, 2020)



■ Total CO₂ emission

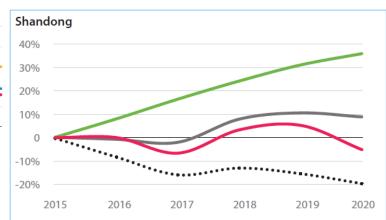
Source: Population data comes from National Bureau of Statistics. Energy-related CO₂ emissions data is calculated by iGDP based on provincial energy balance sheets from China Energy Statistical Yearbook (electricity import and export emissions accounted for). Energy and process CO₂ emissions data of the US and EU comes from IEA and population data comes from the World Rank

FIGURE 5. Non-fossil fuel share in primary energy consumption (%, 2020)

3/4



Source: Energy Development Plan during the 14th FYP, Ecological and Environmental Protection Plan during the 14th FYP and statistical yearbook of each provincial region, and BP Statistical Review of World Energy 2022



**** CO₂ Emission Per Unit of GDP

Coal Consumption



ENERGY SECURITY

GEOPOLITICAL SITUATION NOT HELPFUL

GROWING DEMAND

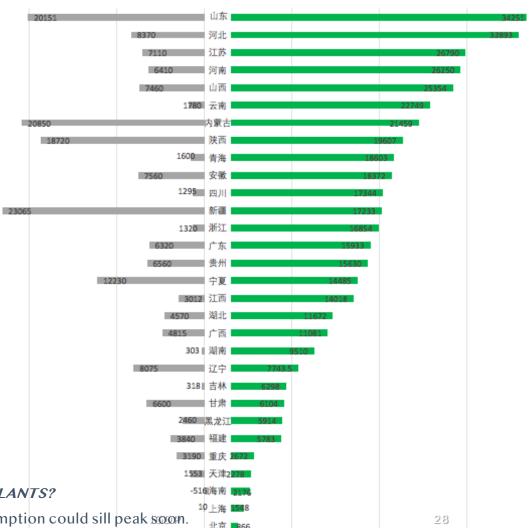
Per Capita Electricity
Consumption still around 1/3 of
the US, half of the OECD level.

SECURITY

SOEs are willing and able to bear higher cost by future stranded asset

JUST TRANSITION

Over 5M jobs in coal and related industries



WHY CHINA IS STILL BUILDING COAL POWER PLANTS?

3/4/23 They might not be used in future. Total coal consumption could sill peak soon.

UNCERTAINTIES

SUPPLY CHAIN:

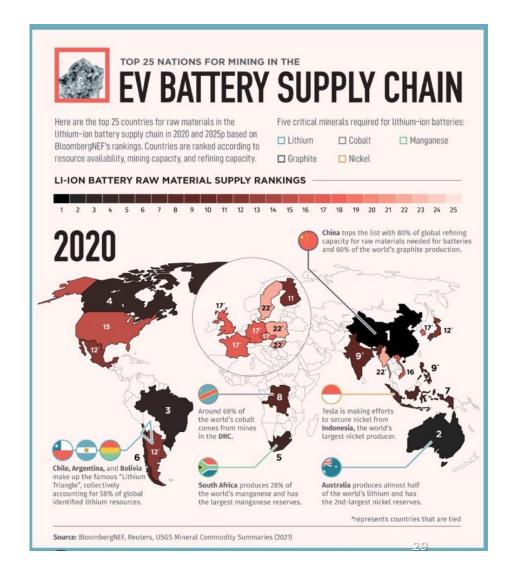
Carbon Border Adjustment
Mechanism, chips and science act
Critical Minerals

MANUFACTURING CAPACITY

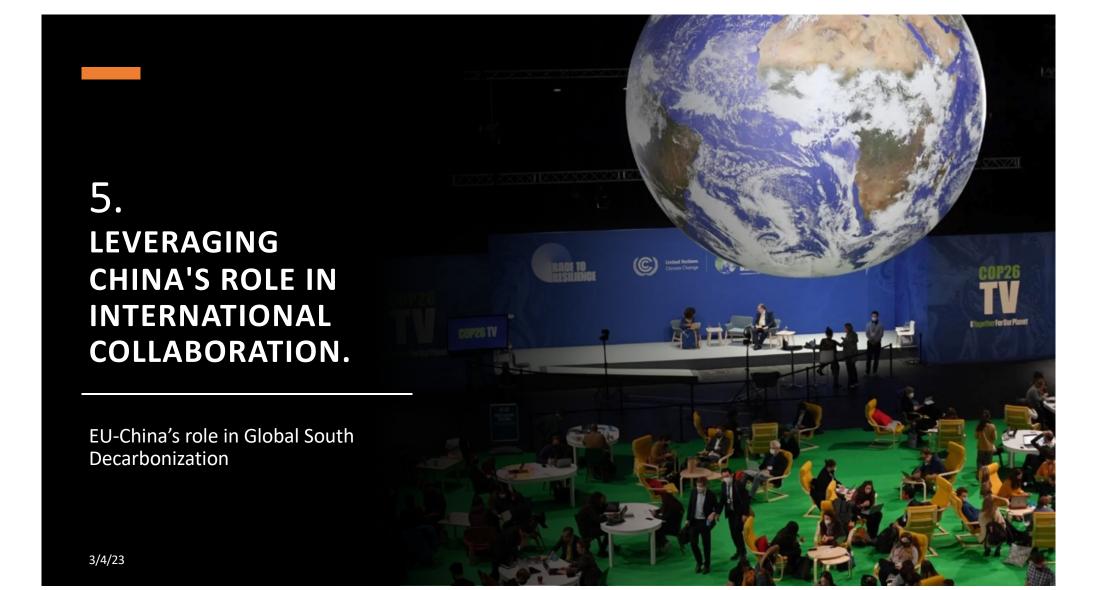
South east Asia competition Labor cost

OPPORTUNITIES

China market



3/4/23



INTERNATIONAL COLLABORATION The Official Mechanisms and Platforms

GLOBAL DEVELOPMENT INITIATIVE

AID

CHINA DEVELOPMENT BANKS

Investment

MULTIPLE-BILATERAL PROGRAMS

With Many Countries

More Money, More Impact?
China's Climate Change South-South
Cooperation to Date and Future Trends





On September 21, 2021, China would increase support for green and low-carbon energy in developing countries, and not build any new coalfired power projects overseas.



BAN NEW COAL

Opinions on Promoting the Co-construction of the "Belt and Road" Green Development (NDRC):

a full stop to new coal power projects overseas

(12.8 GW, 15 plants)

• cautious progress on those already under construction

IGDP

(37 GW, 32 plants)

32

 green and low-carbon development of overseas coal power projects which have already been built (17 GW, 18 plants)

Source: CREA

China would increase support for green and low-carbon energy in developing countries, and not build any new coalfired power projects overseas.

FINANCIAL SUPPORT



State-owned Financial Institutions

- Exim Bank: 3 billion yuan (US\$425 million) in green bonds earmarked for clean energy investment to fund the construction and operation of renewable energy projects such as hydropower and wind power
- China Development Bank (CDB): memoranda of understanding on funding climate action with both the Green Climate Fund and the United Nations Development Programme
- China Export and Credit Insurance Corporation (Sinosure): speed up approval for RE projects and set up RE analysis team
- Standards for evaluation is key

Commercial Banks

- Bank of China and Postal Saving Bank of China: no new coal
- Industrial and Commercial Bank of China: will produce a roadmap and timetable for a gradual withdrawal from financing coal

Source: China Dialogue

US-CHINA CLIMATE DIPLOMACY

DAVOS WEF

John Kerry says thawing U.S.-China tensions could make a huge difference to climate fight

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WATCH LIVE

KEY POINTS

- "We very much hope to be able to find the pathway to a breakthrough that could make a huge difference," Kerry told CNBC's Tania Bryer at the World Economic Forum in Davos, Switzerland.
- The U.S. and China formally resumed stalled climate talks with China late last year following a meeting between President Joe Biden and President Xi Jinping.
- Kerry said Wednesday that U.S. diplomats had since had several meetings, "and we will be talking very shortly."



COP27: China's climate envoy says expects cooperation with U.S. to continue

By Jake Spring



3/4/23 IGDP 34

TO THIS COMMUNITY:

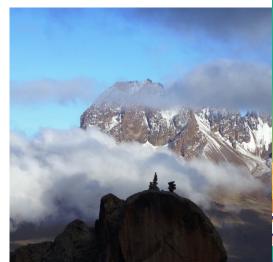
THE TRACK II COOPERATION (THINK-TANK, NGO) TO PROMOTE GLOBAL SOUTH DECARBONIZATION

CAPACITY GAP

EU CHINA AFRICA

SPAIN CHINA LATIN-AMERICA

- Cheap clean technology fast deployment
- Manufacturing capacity moving to global south
- o Business model design
- Technology integration
- Civil society engagement
- Just transition





2023年2月 | FEBRUARY 2023

THANK YOU! humin@igdp.cn

China Carbon neutrality tracker https://ccnt.igdp.cn/
https://climatechampions.unfccc.int/chinas-net-zero-future/
https://energyinnovation.org/wp-content/uploads/2021/02/Chinas-Carbon-Neutral-Opportunity.pdf

