



绿色创新发展中心  
Innovative Green Development Program

# Just Transition of Coal Regions in China

July 20, 2022

Innovative Green Development Program (iGDP)



Photo credits: Unsplash



# 绿色创新发展中心

innovative Green Development Program

- ▶ **Innovative Green Development Program (iGDP)** is a consultancy focusing on green and low-carbon development. iGDP works to strengthen the design and implementation of low-carbon solutions through interdisciplinary, systematic and empirical research. We work with a wide variety of partners and stakeholders to promote a zero-emissions future.

## ▶ Areas of Work:

- ▶ Energy transition
- ▶ Green economics
- ▶ Climate strategies
- ▶ Sustainable cities
- ▶ Strategic communications



# Agenda

## What is Just Transition?

- The concepts and research framework

## What are Just transition practices around the world?

- Abroad and at home

## How to achieve a Just Transition?

- Status & challenges for coal regions in China
- Policy recommendation and key actions



# What is Just Transition?

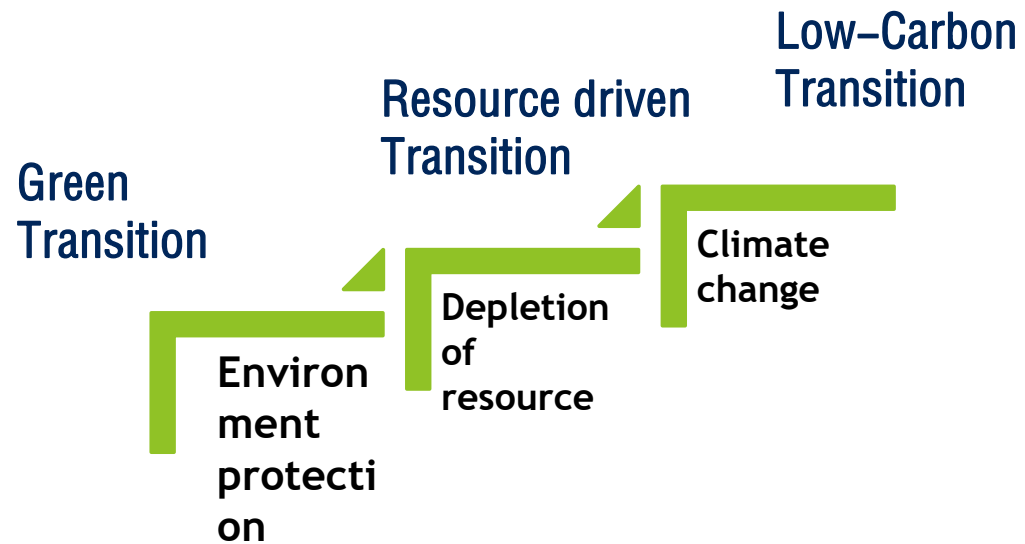
In the context of global climate governance



# Just Transition



- ▶ Dimension of Time and space



# International- interregional inequity and justice

## To acknowledge:

- Different stage of economic development
- Different natural resources
- ...

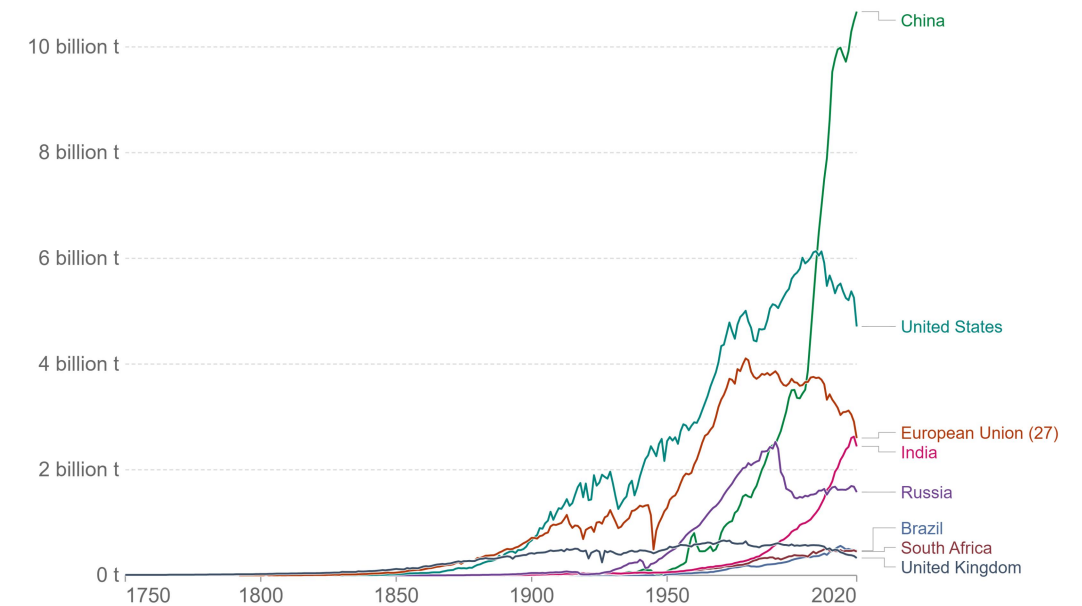


- ▶ International collaborations are key to achieve carbon neutral
- ▶ Developing countries need to navigate a new path towards a carbon neutral and just future

## Annual CO<sub>2</sub> emissions

Carbon dioxide (CO<sub>2</sub>) emissions from fossil fuels and industry. Land use change is not included.

Our World  
in Data



Source: Global Carbon Project

OurWorldInData.org/co2-and-other-greenhouse-gas-emissions/ • CC BY



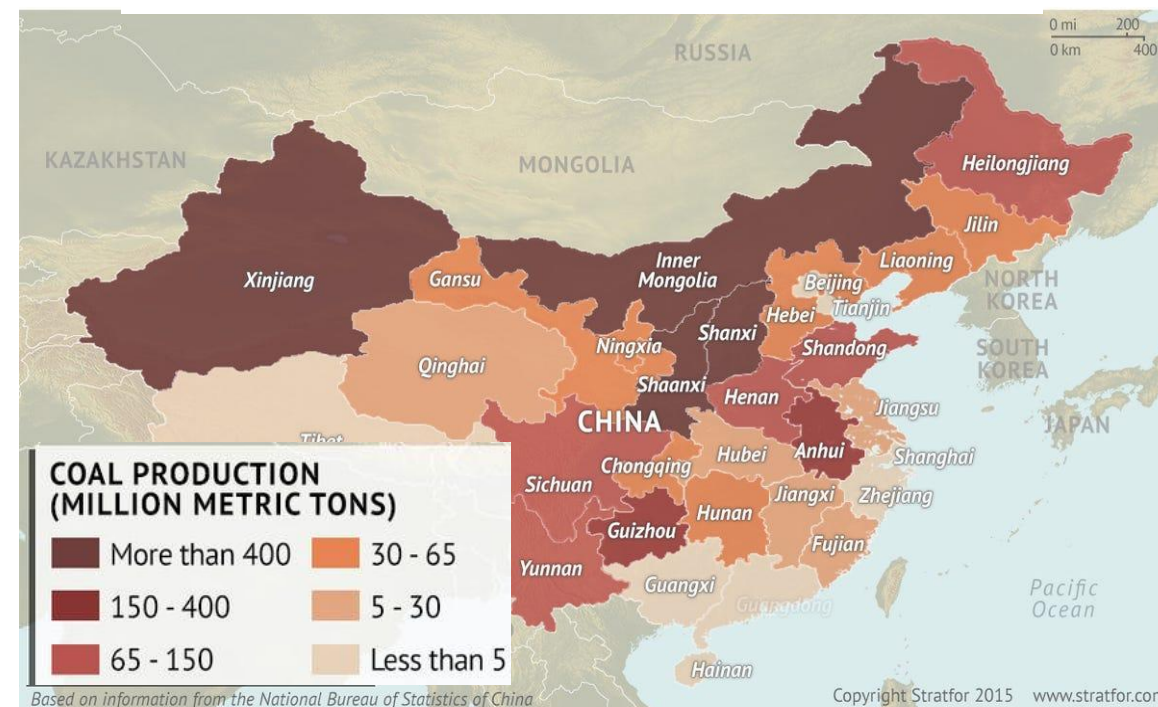
# Domestic- interregional inequity and justice

## Why coal regions?

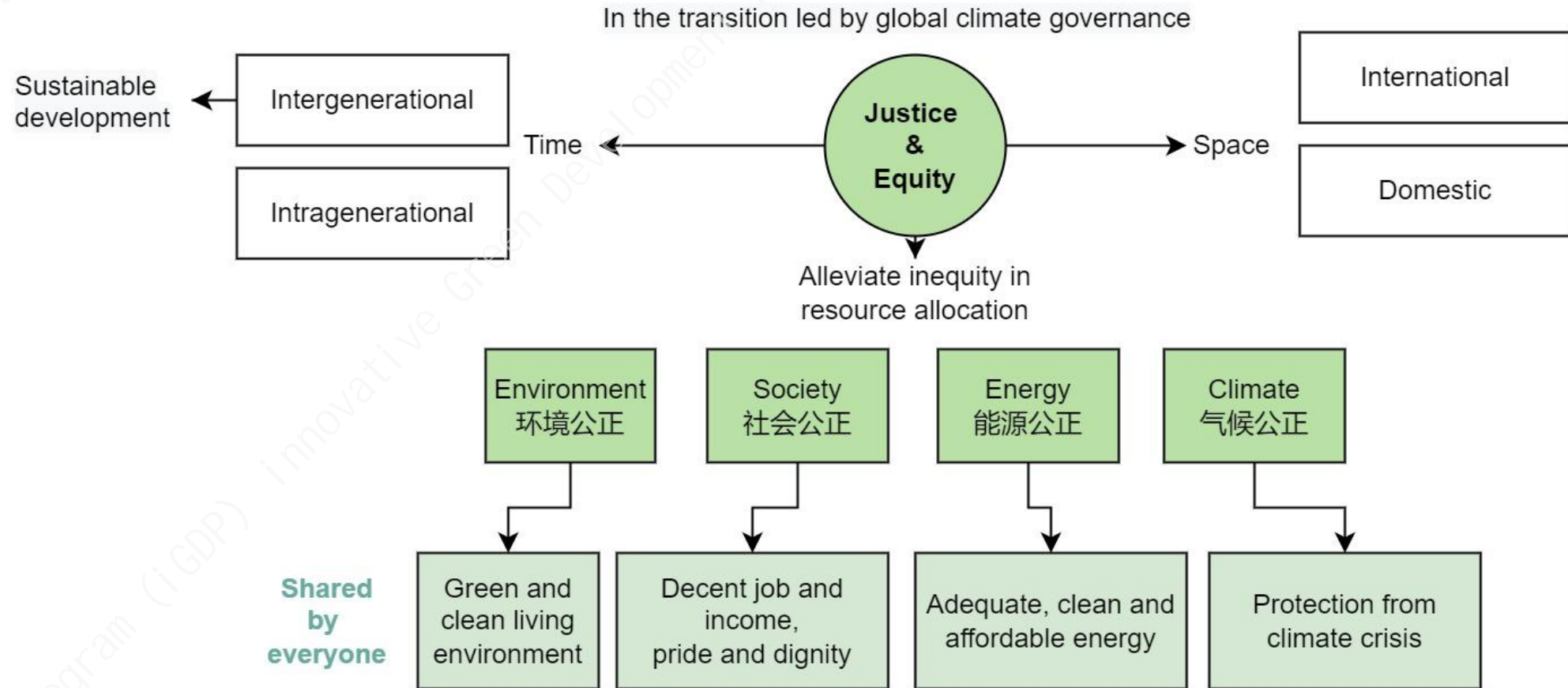
### ► Coal regions

- Resource-dependent region
- Economy and employment highly dependent on coal industry and lacks resilience
- Environment issue : land subsidence, pollution...
- Needs special support to protect direct and negative impact if not dealt with carefully and strategically

MAINLAND CHINA COAL PRODUCTION 2020



# Just Transition in China's climate governance





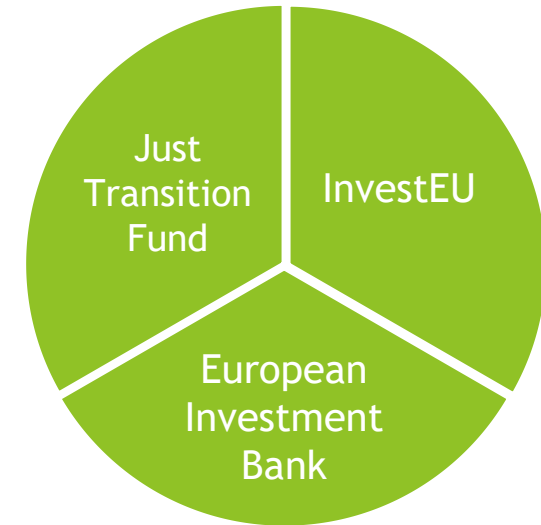
# What are Just Transition practices around the world?

At home and abroad



# Just Transition around the world

- ▶ **Supranational strategy:** Just Transition Mechanism in European Green Deal
  - ▶ Fossil fuel and carbon-intense industries
- ▶ **National strategy:** Spain: Just Transition Strategy
  - ▶ Coal regions transition, Just Transition plans & goals, employment etc.
- ▶ **Subnational strategy:** Colorado, U.S.: Just Transition Action Plan
  - ▶ Timeline of Just Transition Work
- ▶ **Institutional:** Canada: Task Force on Just Transition for Canadian Coal Power Workers and Communities
  - ▶ provides knowledge, policy choices and recommendations to policy makers



EU's Just Transition Mechanism: Three sources of financing



Source: The Office of Just Transition | Department of Labor & Employment (colorado.gov)



# Despite the different narrative framework...

- ▶ China's policy makers have stated “substantial progress made towards **Common prosperity by 2035**” a target in its long-term strategy.
- ▶ China's policy making is shifting focus from prioritizing efficiency to **emphasizing fair and just**

全体人民共同富裕  
Common Prosperity for everyone

可持续发展  
Sustainable  
development

公平正义  
Fair and  
Just

以人为本  
People  
oriented



# Existing policy framework related to Coal regions' Just Transition

## national

- 2021年《推进资源型地区高质量发展“十四五”实施方案》
- 2021年《重点生态保护修复治理资金管理办法》
- 2020年发改委《关于做好2020年重点领域化解过剩产能工作的通知》等
- 2016年《国务院关于煤炭行业化解过剩产能 实现脱困发展的意见》
- 2016年《人力资源社会保障部国家发展改革委等七部门关于在化解钢铁煤炭行业过剩产能实现脱困发展过程中做好职工安置工作的意见》
- 2016年财政部、国家税务总局发布《关于化解钢铁煤炭行业过剩产能实现脱困发展的意见》
- 2016年财政部发布《工业企业结构调整专项奖补资金管理办法》
- 2016年发改委发布《关于实施减量置换严控煤炭新增产能有关事项的通知》、《关于进一步做好建设煤矿产能置换有关事项的通知》
- ...

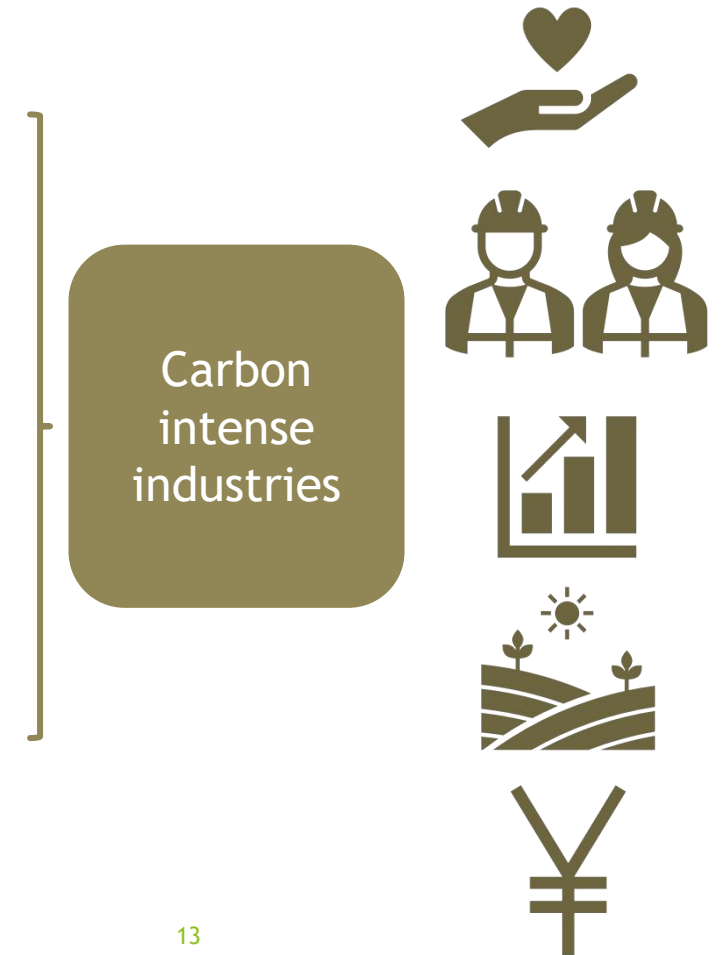
## subnational

- 2018年《黑龙江省关闭煤矿从业人员就业安置工作方案》等
- 2016年山西省人力资源社会保障厅等部门《关于做好化解煤炭钢铁行业过剩产能职工安置工作实施意见的通知》
- 2016年山东省人力资源和社会保障厅等部门《山东省化解钢铁煤炭过剩产能企业职工分流安置实施意见》
- 2016年《河北省人民政府办公厅关于做好化解钢铁煤炭等行业过剩产能职工安置工作的实施意见》
- ...

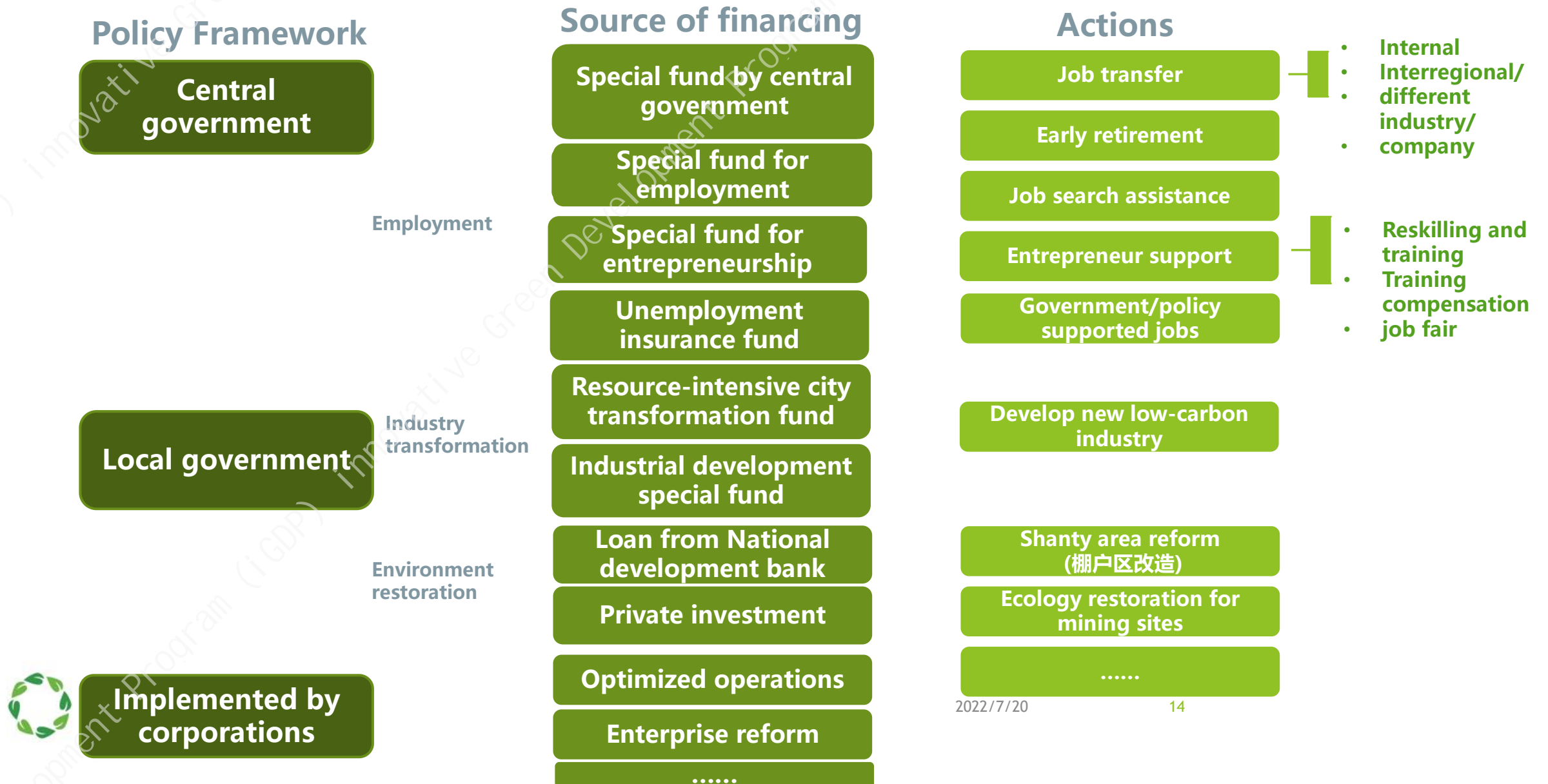


# Just transition is reflected throughout China's three policy systems (national and subnational)

- ▶ **Resource-dependent regions transition:** Support Resource-dependent regions' transition and development  
资源型地区转型与高质量发展
- ▶ **Alleviating negative impact on coal workers:** Support unemployed workers affected in supply-side structural reform policies  
供给侧改革下人员安置和民生保障
- ▶ **Regional systematic transition:** Revitalize old industrial bases  
Northeastern region, Shanxi, North Jiangsu  
老工业区域振兴 (东北, 山西, 苏北)



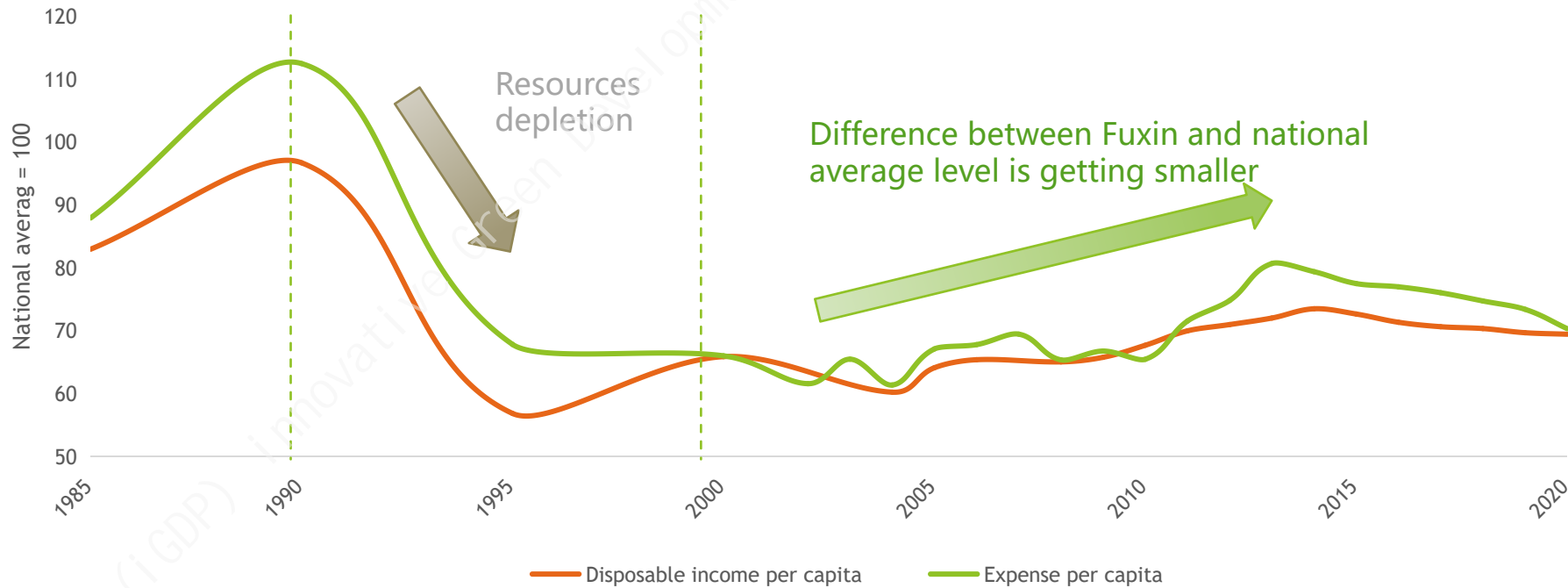
# Existing policy framework related to Coal regions' Just Transition



# Achievements with existing policies- Fuxin, Liaoning

## the first Resource-depleted economic transform pilot city, 2000-now

Disposable income and expense per capita of urban residents- Fuxin vs China



Source: calculated based on Liaoning statistical yearbook and China statistical yearbook



# Achievements with existing policies- Fuxin, Liaoning

the first Resource-depleted economic transform pilot city, 2000-now



**Environmental governance and restoration of Haizhou Coal Mine, Fuxin**

- Total investment by 2017 0.747 billion RMB
- Advance R&D for PSH and compressed air storage with Tsinghua underway.



**Shuangshanzi Wind Power plants, Fuxin**

Total wind installed capacity in Fuxin has reached 2.4GW  
Fuxin plans to increase total capacity to 8 GW by 2025.





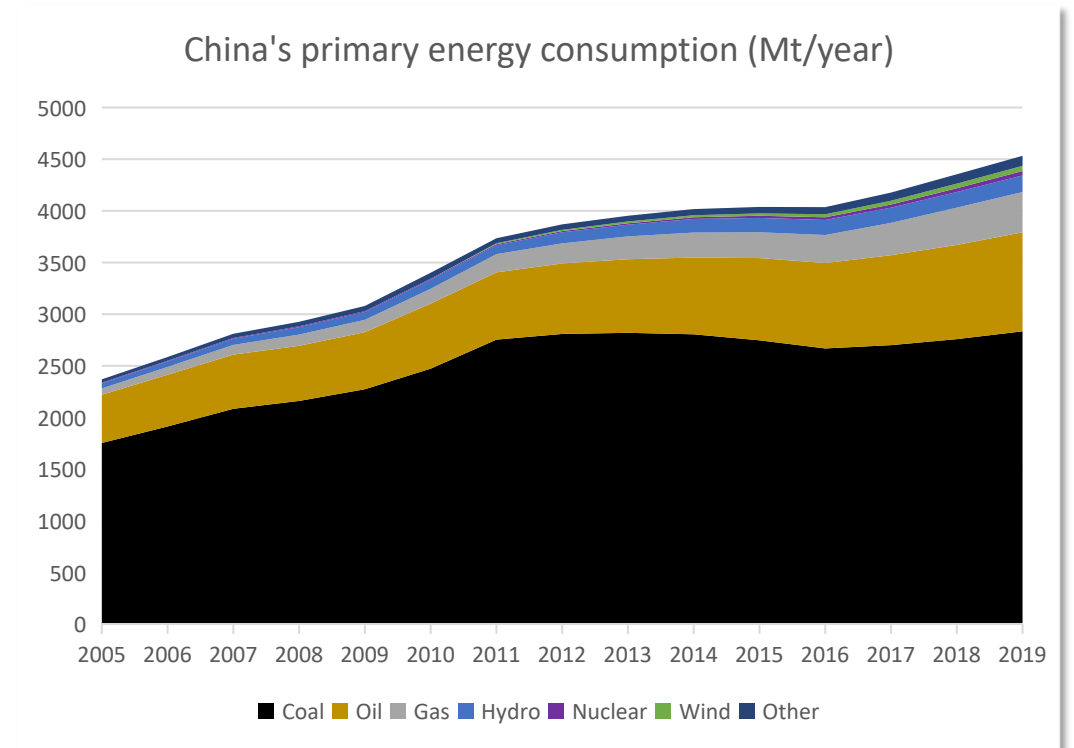
# What is next for Coal regions in China?

Challenges and solutions



# Coal consumption in China

- ▶ Though coal use started to fluctuate since is **still the dominant source of energy**
- ▶ **Foreseeable coal demand decline** in the revolution of energy system to become carbon neutral
  - ▶ Experts believe China's coal consumption will **start to decline during 2025-2030** (the 15<sup>th</sup> Five Year Plan)
  - ▶ By 2060, coal consumption will likely be **under 10%**



# Challenges for coal-dependent regions

- ▶ Employment of affected workers
- ▶ Environment restoration
- ▶ Economic diversifications
- ▶ Coal industry revenue and debt
- ▶ Local government fiscal revenue

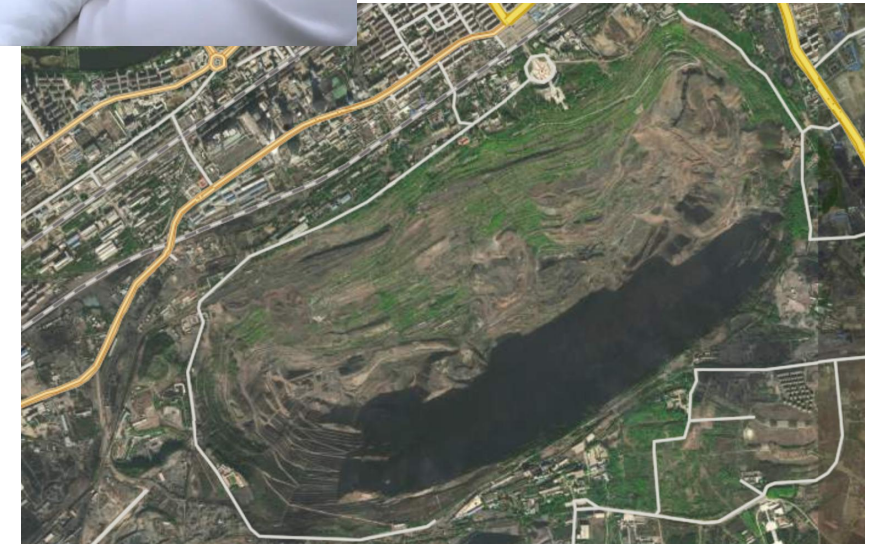
In Shanxi 2020, though shrinking...

- ▶ Coal industry's contributed to over 50% of total value added in industry sector in 2020, 45% of fiscal revenue
- ▶ 900,000 employees in coal industry.



Coal miner and family from the third mine in YangQuan, Shanxi (Closed in 2019), 6000 miners were transferred to new job positions.  
From Documentary The Third Coal Mine

Screenshot of GaoDe map- Haizhou Coal Mine (now a historic park, and in July 2022, advanced development of a pumped storage hydro plant is now underway)



# Known problems requiring better solution:

- ▶ Some old solutions to unemployment issues solved immediate problems but are **not effective in the long run**
- ▶ Dependence on financial support from central government
- ▶ **Gap** between subsisting industries ramp up to generate enough job opportunities and revenue



# Key areas in China's coal regions' Just Transition

National strategic goals:

**Common Prosperity  
&  
Carbon Neutrality**

**Climate &  
Environment  
Justice**

Green and  
low-carbon  
development

**Just  
Transition**

Shared  
development  
& outcome

**Social Justice**

Energy  
security

**Energy Justice**



# Policy recommendations



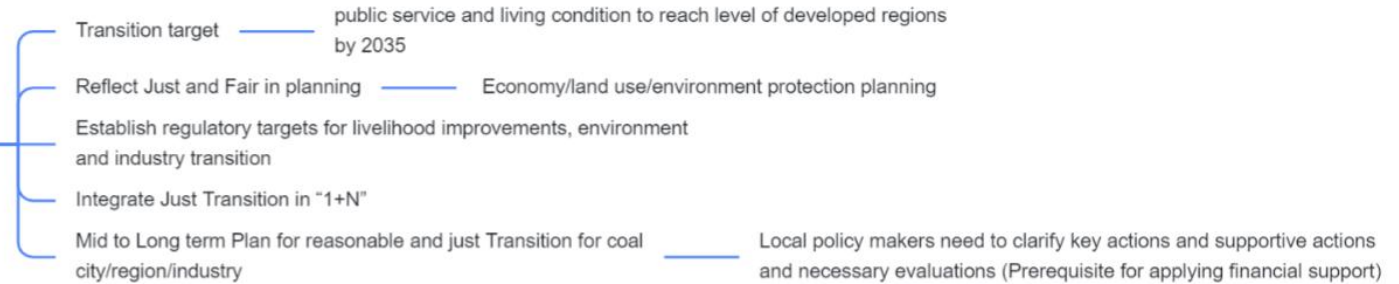
We are still polishing and refining this policy framework



# Key Takeaways for a successful Just Transition

**Integrate Just Transition into national climate policy system**

Strategic planning for coal regions



- ▶ Targets for transition
- ▶ Further integrate into 1+N and planning
- ▶ Supportive actions to ensure implementation



# Key Takeaways for a successful Just Transition

- ▶ China's goal to become carbon neutral in 2060
  - ▶ Will create opportunities for diverse and low-carbon industries

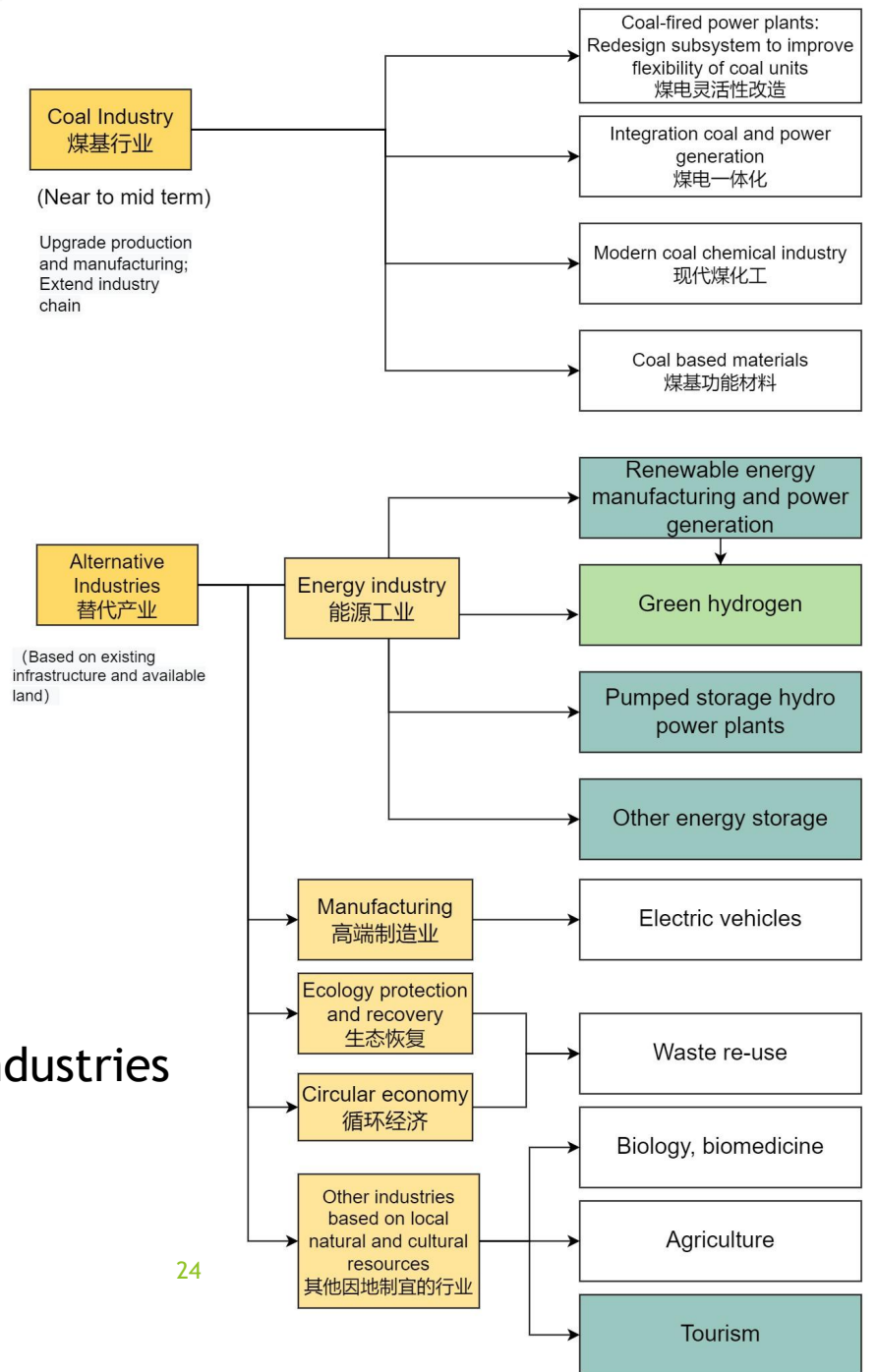
Identify and develop substituting industry

Accelerate the transformation of government functions & build a business conducive environment

Optimized application and approval process



## Transition of industries in coal regions





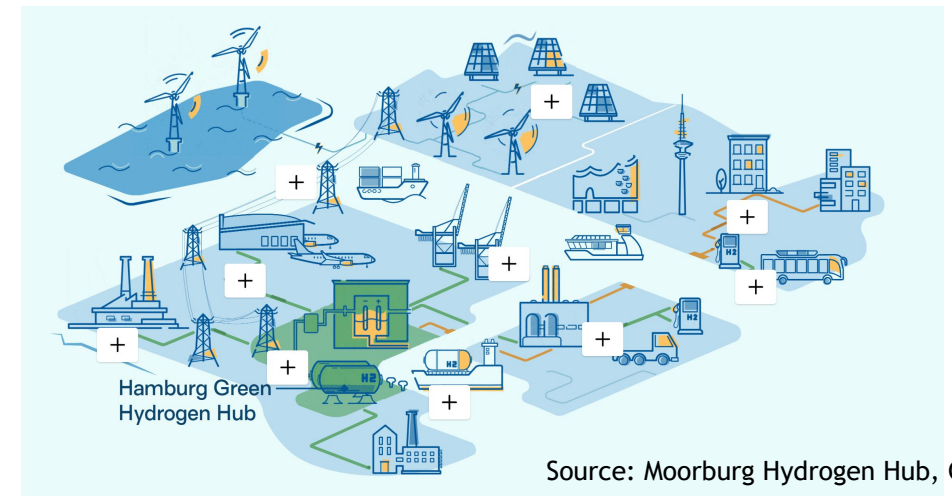
# Key Takeaways for a successful Just Transition

- ▶ Take advantage of existing infrastructure and available land
- ▶ More financial support to environment restoration and relocation compensation
- ▶ Environment-oriented development (EOD)
- ▶ R&D

Environment restoration & Environment oriented development (EOD)



Picture: Jiaokou, Shanxi 300MW PV



Source: Moorburg Hydrogen Hub, Germany;





**Datong, Shanxi, Photovoltaic on subsided land**  
Shanxi province is one of the major coal industry base in China.



**Pan'an Hu, Xuzhou, Jiangsu**  
Xuzhou is a resource-dependent city and an industrial base

Picture source: Xinhua; Xuzhou people's government website



# Key Takeaways for a successful Just Transition

- ▶ China's goal to become carbon neutral in 2060
  - ▶ mapped out a **clear timeline** to plan ahead

Design a reasonable timeline



- ▶ 2020年能源消费总量**49.8亿**吨标准煤，煤炭消费总量**28.3亿**吨标准煤。
- ▶ 2019年非化石能源消费比重**15.3%**。
- ▶ 2019年非化石能源发电装机占比达**41.9%**，可再生能源发电装机容量已达到**7.94亿**千瓦，其中风电装机**2.1亿**千瓦、光伏发电装机**2.04亿**千瓦。



- 2025**
  - ▶ 非化石能源占比达到**20%**
  - ▶ 单位GDP能耗比2020年下降**13.5%**
  - ▶ 单位GDP二氧化碳排放比2020年下降**18%**
  - ▶ “十四五”时期严控煤炭消费增长
  - ▶ 新建通道可再生能源电量比例原则上不低于**50%**
  - ▶ 新增水电装机容量**4000万**千瓦
  - ▶ 新型储能装机容量达到**3000万**千瓦以上
  - ▶ 地热供暖（制冷）面积比2020年增加**50%**，全国地热发电装机容量比2020年翻一番

**2030**

- ▶ 能源消费总量控制在**60亿**吨标准煤以内
- ▶ 非化石能源发电量占全部发电量的比重力争达到**50%**。
- ▶ 单位GDP二氧化碳排放比2005年下降**65%**以上
- ▶ 非化石能源占比达到**25%**左右
- ▶ 风电、太阳能发电总装机容量达到**12亿**千瓦以上。
- ▶ 石油消费“十五五”时期进入峰值平台期
- ▶ “十五五”期间新增水电装机容量**4000万**千瓦左右
- ▶ 抽水蓄能投产总规模达到**1.2亿**千瓦左右
- ▶ 省级电网尖峰负荷相应能力基本具备**5%**以上

**2035**

- ▶ 地热供暖（制冷）面积以及地热发电装机容量比2025年翻一番
- ▶ 2050：能源消费总量基本稳定，非化石能源占比超过一半
- ▶ 2060：非化石能源消费比重达到**80%**以上

Source: CCNT, <https://ccnt.igdp.cn/>

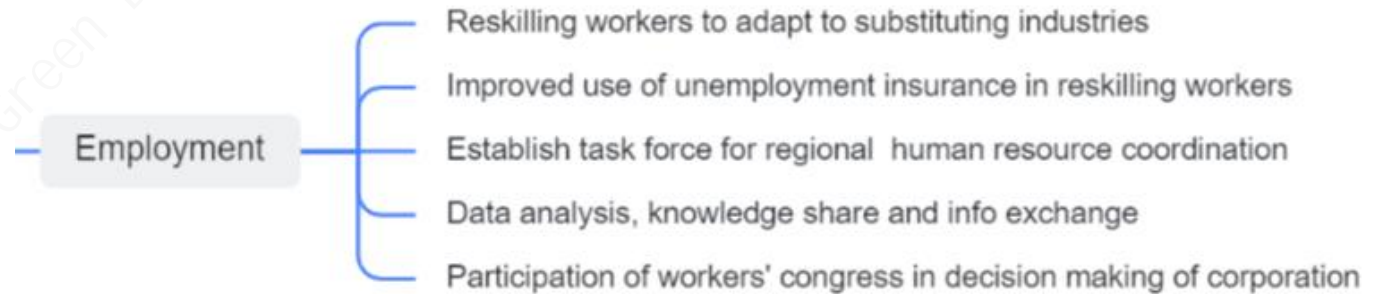
# Key Takeaways for a successful Just Transition

## The Bottomline

**Improvement of social security system**

**Improvement of existing employment assistance policies**

From prolonging employment and job transfer to reskilling and training in accordance with new local industries.



# Key Takeaways for a successful Just Transition

**Encourage information exchange, transparency, improve coordination**

- ▶ A Just Transition platform

**Encourage participation of all stakeholders in decision making process**

**Green finance and mobilization of private investment**

- ▶ On top of transfer payment from central government



# Conclusion

- ▶ In the just transition led by global climate governance, four types of justice needs to be considered: **environmental, social, climate and energy justice**
- ▶ We believe **Just Transition is already integrated in China's policy system** and coal regions have already benefited from these practices
- ▶ In the context of climate governance, we recommended **policies and detailed actions** to help China's coal regions achieve Just Transition.
  - ▶ from integrating Just Transition into China's climate policies, creating timeline for coal regions' transition, to various aspects including employment, environment restoration, institutional, green finance.



# Thank you for your time!

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