

Informing China's approach to a just transition: lessons from global experiences of coal phase-out

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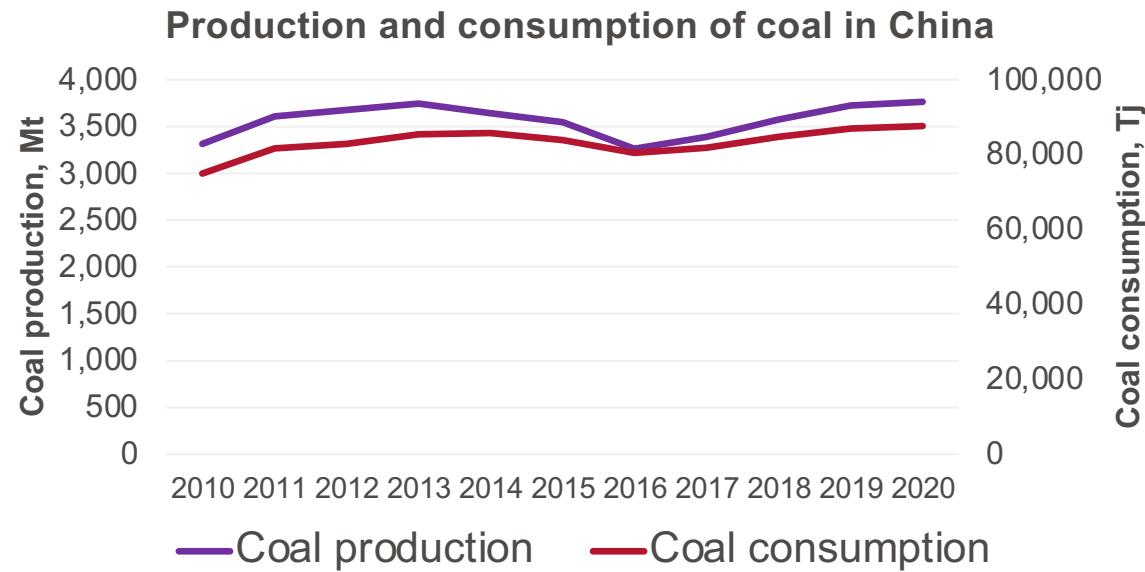
Background context

- China's coal phase out is integral to its energy transition.
- A focus on 'just' energy transitions in China is timely and necessary.
- Planning for, and achieving, just transition is socially complex and resource intensive.

Emissions: accounts for 70% of China's total emissions, largest in the world

Coal production: Localised in five key provinces

Coal consumption: Coal accounts for over 50% of primary energy consumption. There are currently > 1,000 active coal power plants.



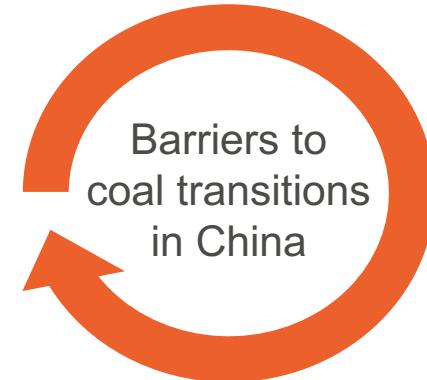
Defining Features of Coal Transitions in China

Commitment to peak carbon dioxide (CO₂) emissions by 2030 and achieve carbon neutrality by 2060.

“middle way” between progressive climate goals and energy security priorities – to guarantee meeting rising energy demands, securing jobs and maintaining social stability



- Energy and climate policies
- Energy innovations and costs
- Mine mechanisation and modernisation
- Planned retirement
- Environmental and social benefits



- Rising energy demand
- Rising energy security concerns, pushing provinces to prioritise self-reliance
- Inefficient grid management, preventing sharing of power and easy integration of renewable energy

Just Transitions

A “just transition” aspires to promote social resilience, ecological integrity and economic sustainability, underpinned by strong democratic governance processes.

Central elements of a just transition strategy include:

- Local engagement with affected stakeholders (participatory processes, social dialogue)
- Government commitment to integrated, holistic development planning and implementation
- Equitable access to opportunities

A three-pronged approach has influenced the project’s treatment of the social impacts of China’s energy transition.

STRENGTHEN
INSTITUTIONAL
GOVERNANCE

SUPPORT PEOPLE
AND
COMMUNITIES

REMEDIATE AND
REPURPOSE MINED
LAND AND ASSETS

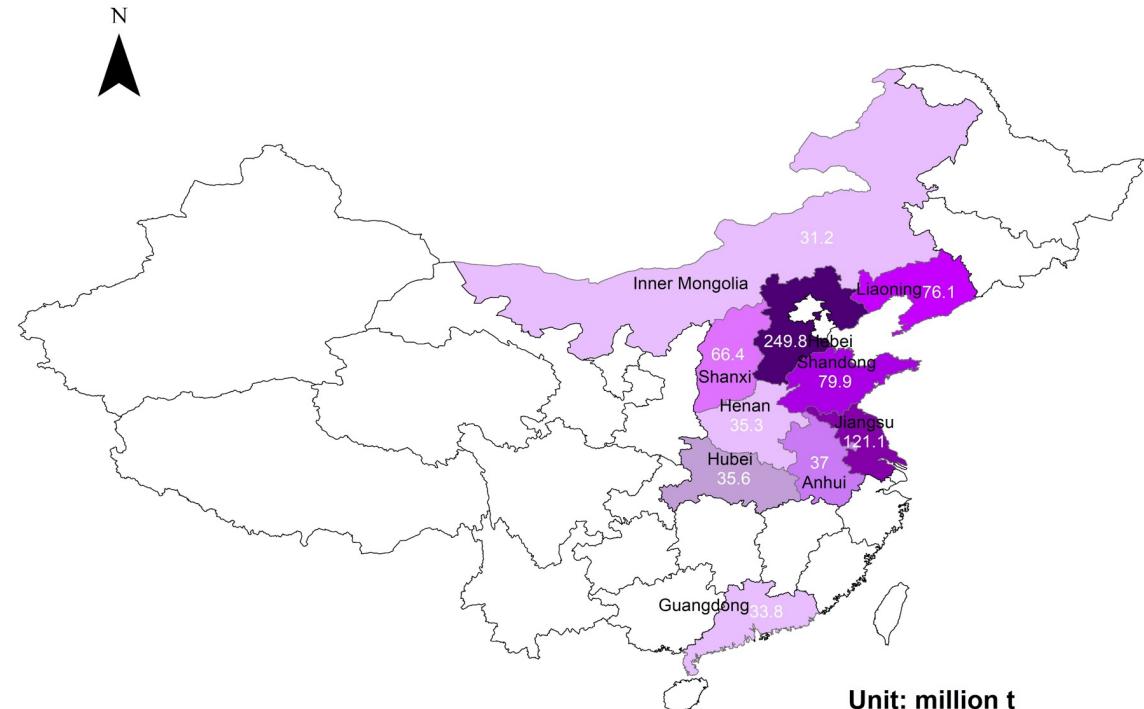
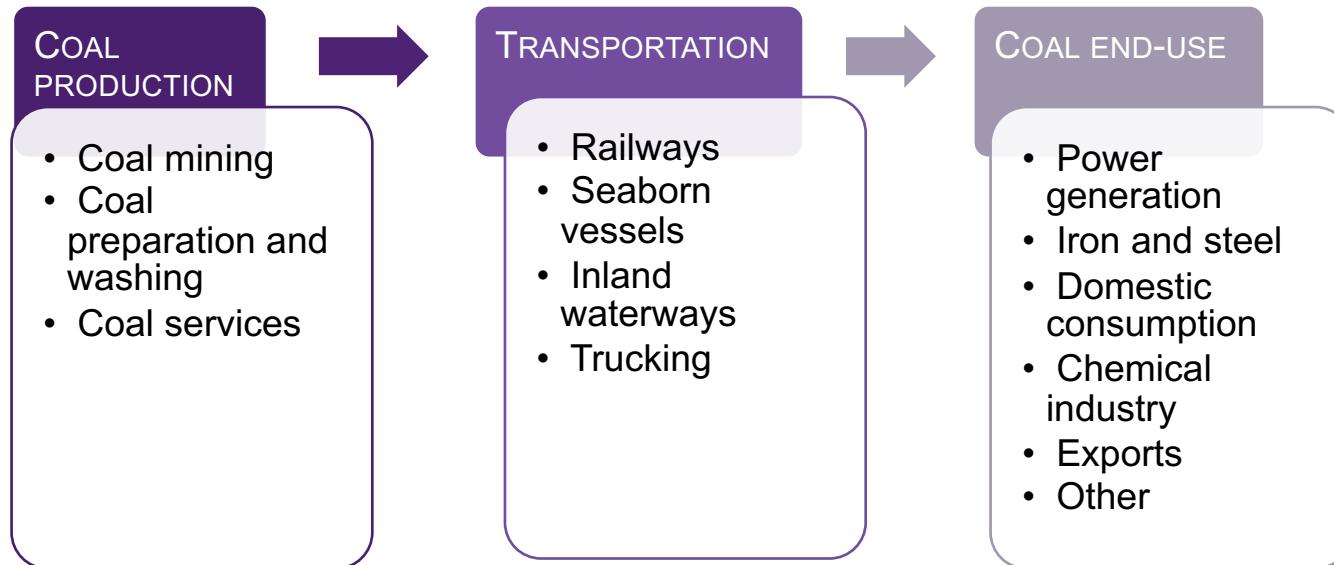


Key features of a just transition

China's Coal Dependencies

Value Chain/ Industrial dependencies

Energy transitions are likely to have an impact along the entire coal value chain, from mining to end-use



China's Coal Dependencies

Social and cultural identities tied with coal

- 3.5 million workers
- Basis for social identities, socio-economic status and professional pride
- Place attachment
- Potential for social disruptions and conflict if transition not managed well

Key Qs to consider include:

- What will coal phase out mean for diverse groups of people, across gender, age and ethnic divides?
- How can affected people be empowered to take ownership of designing and managing the transition?
- How can vulnerable people make meaningful contributions to decision-making and planning?

As an example, recent [research](#) proposes retiring 186 out of China's 1,037 active coal plants (based on poor technical, economic, and environmental [performance](#)). These are 18% of China's oldest, smallest and most inefficient plants (~11% of total coal capacity).

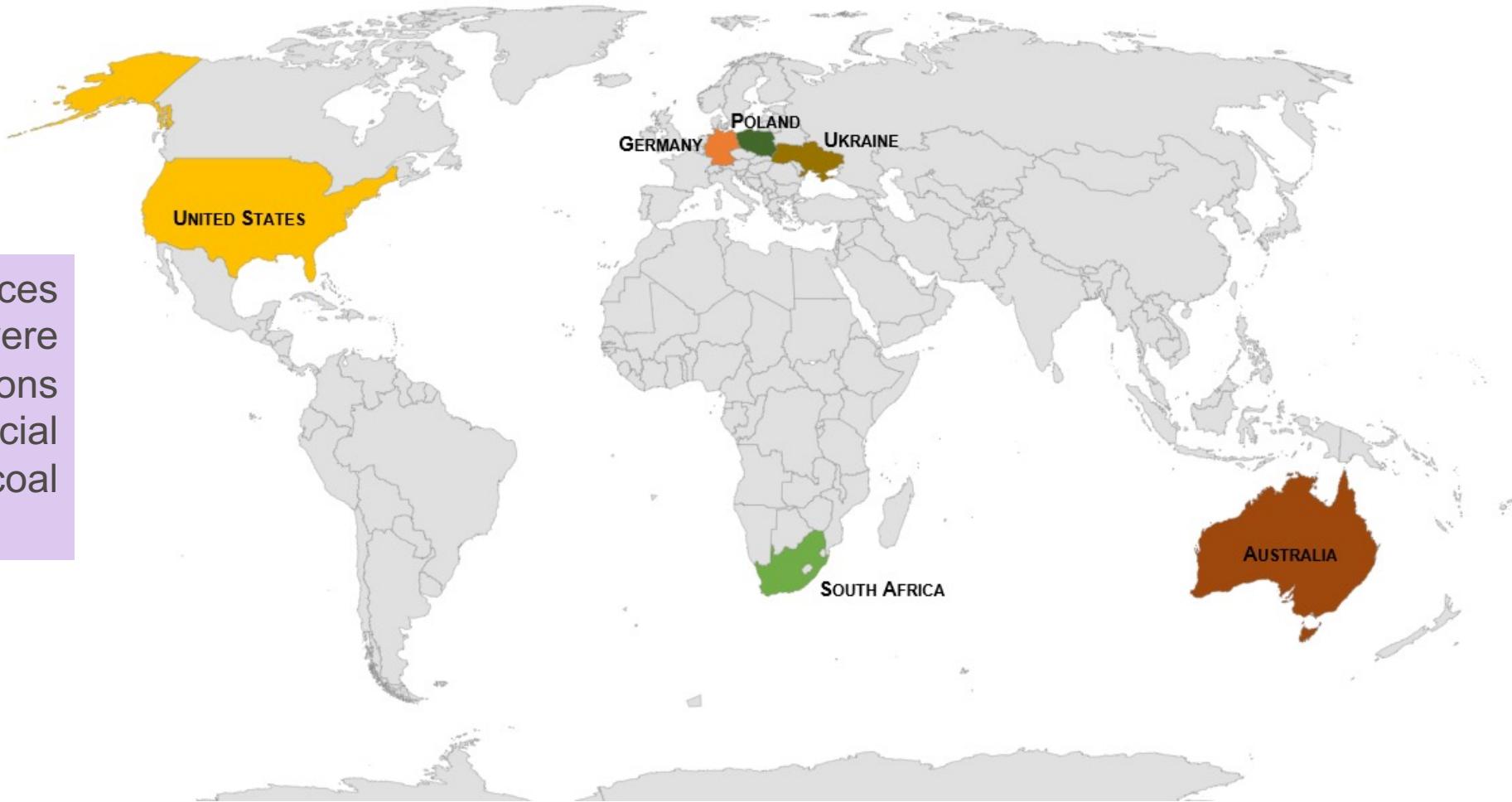


Source: Carbon Brief (2021).

However, without undertaking a social due diligence assessment, such retirements may cause unforeseen social impacts, disrupt administrations, and destabilise millions of communities and small businesses across coal regions.

Global Lessons to Guide China's Just Transition

Energy transition experiences from six countries were reviewed to identify lessons for managing the social aspects of China's coal transition over time.





Global Lessons to Guide China's Just Transition

German coal transition: background

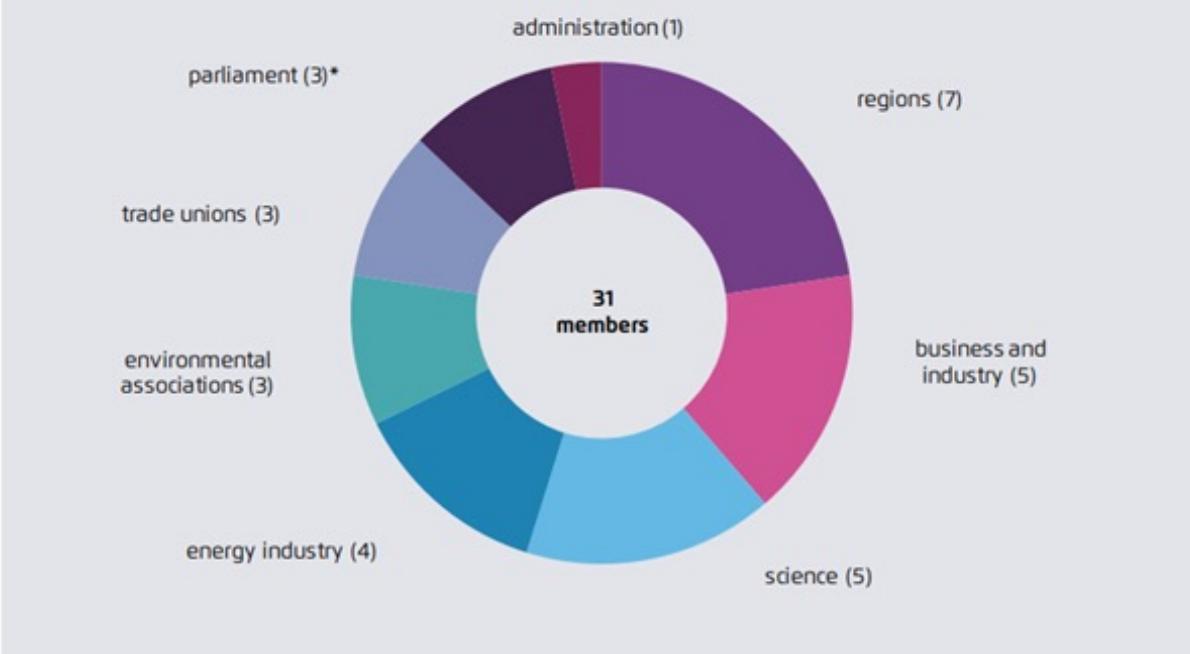
Since 2015, the share of coal in power generation has nearly halved: 42% (2015) to 23% (2020)

- Plans to phase coal out by 2038
- 'Coal Commission' established in 2018
- Independent body, comprises 31 members with direct social and economic interests; government not included

4 key objectives:

- Achieve climate targets
- Ensure domestic security of supply
- Keep power affordable
- Just transition for workers and regions

Composition of the Coal Commission



Authors' figure based on Commission's final report

*without voting rights

Responsible ministries sat in on the plenary, actively listened and had the right to speak but no right to vote



Global Lessons to Guide China's Just Transition

What has Germany done well?

- Consider long-term effects
 - Economic diversification by letting affected groups take ownership
- Establish synergies among key policy goals
- Focus on 'soft location' factors and infrastructure development
- Strong funding commitment
- Inclusive governance that included
 - Decentralised, empowered cities
 - Region-wide coordination
 - Democratised decision making
 - Bottom-up participation of local stakeholders
- Create a knowledge-based society
- Anticipative elements (retraining, early communication of phase-out plans, financial planning)

Economic reorientation works better when new projects relate to existing industries (e.g. automotive sector in Saarland)



Global Lessons to Guide China's Just Transition

Relevance of Germany's experiences for China

- Engagement and dialogue with those affected:
 - Focus on inclusion, not exclusion
 - Identify local gatekeepers with demonstrated experience in managing inclusive large-scale change
 - Build bottom-up capability to develop a shared vision for future
 - Identify gaps in knowledge and resources, and map existing strengths
- Policy-level commitments from national, regional and local governments:
 - Financial support
 - Regulatory certainty
 - Pro-active planning (early mover advantage)
 - Diversified development pathways
- Non-negotiable focus on land rehabilitation and repurposing to create long-term aesthetic value for coal regions:
 - Promote liveability, social quality of life
 - Restrict outmigration and seek new economic opportunities.

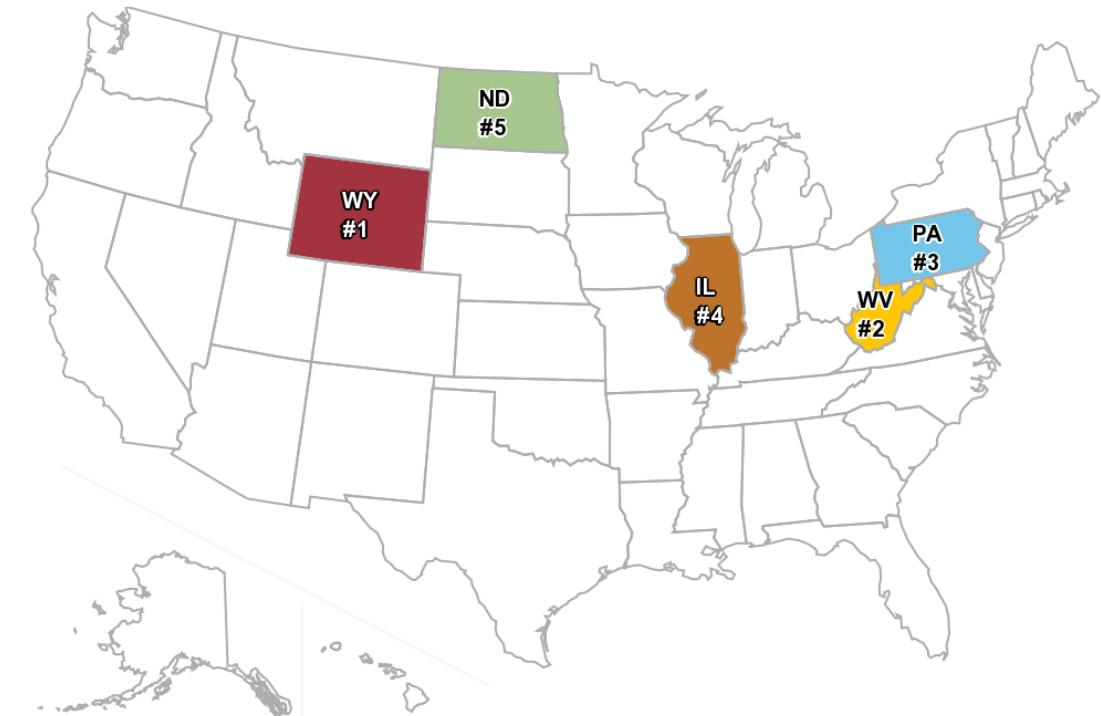


Global Lessons to Guide China's Just Transition

US coal transition: background and context

- 22 of 50 states: three main 'coal regions'
Appalachia covers 8 states, 200,000 square miles, 25 million people
By comparison, Ruhr (Germany) is ~1,700 square miles, 5 million people
- Influential coal lobby in the US

Top five coal producing states, 2020



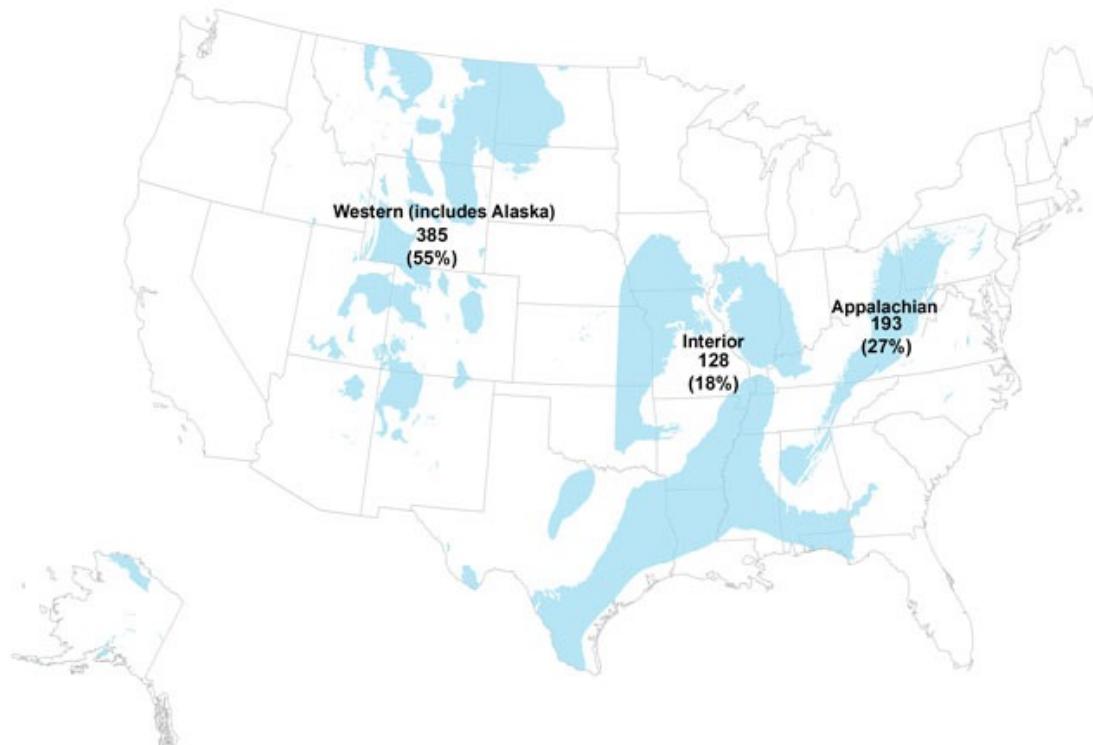
Source: U.S. Energy Information Administration, 2020



Global Lessons to Guide China's Just Transition

The case of Appalachian coal transition in the US

Coal production by region in million short tons and regional share of total U.S. production, 2019



Source: U.S. Energy Information Administration, 2020

- >25% of US coal production from the Appalachian region
- Predominantly, underground mines
- West Virginia is the largest coal-producing state in the region and second-largest nationally
 - Employment: 39,000 people
 - Contribution to state economic activity: ~\$13 billion USD (~17% of the state GDP)
 - ~\$650 million in state and local tax revenue



Global Lessons to Guide China's Just Transition

Lessons from the Appalachian experience

- Local community ties critical to the success of regional initiatives
- Holistic training is integral to systematically address coal ‘mono economy’ culture
- Diversification is key

Appalachia's transition: what went wrong?

- Health and environmental hazards – poor regulation and historical environmental legacy challenge
- One-dimensional approach to transition – focus on jobs/ training programs
- Absence of democratic participation of affected communities – grassroots planning with actors ad hoc



Global Lessons to Guide China's Just Transition

Relevance of US experiences for China

- Focus on job creation is insufficient. Balance between quantity AND quality of jobs is critical
- A strong RE/ green energy industry can potentially re-energise coal mining regions and communities
- Accounting for environmental legacy has been weak in Appalachia and offers important lessons for China

Global Lessons to Guide China's Just Transition

Strategic pointers to guide China's just transitions

- **Adaptation to context**
 - Each regional/ local town, community, and government will require its own context-specific transition strategy.
- **Engagement and dialogue with those affected**
 - Focus on inclusion, not exclusion
- **Commitment from the government:**
 - Financial and regulatory certainty
- **Development of renewable energy industry in mining regions**
 - Potential for retraining
 - Social cohesion assessment
- **Manage environmental legacy**
 - Remediation costs and financial assurance

Recommendations

Alignment

between energy transition policy and key national priorities

Focus on **regional and sub-regional planning** is key

engage stakeholders early, and foster integrated, **consensus-driven approach** to map and assess social impacts across scale

Values-based approach to diversification is critical

Extend provincial governments' '**transitions thinking**' to embrace a broad-based development vision focusing beyond jobs and re-skilling

Ecological integrity – land rehab and environmental restoration

Localised approaches to just transition

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