

CCNT Newsletter

Special Issue on Subnational Actions



In this special issue of the bi-monthly China Carbon Neutrality Tracker (CCNT) newsletter we focus on progress at the subnational level – one of the major crosscutting areas of work at the Institute for Global Decarbonization Progress. As China mobilizes to meet its ambitious dual-carbon goals, subnational climate actions will have a significant impact on national and global emission trajectories. With the right design and implementation, effective local initiatives can lead to overperformance on China’s climate goals.

A small set of high-impact solutions can capture most of the mitigation potential toward China’s net zero goal. Implementing these measures in China’s provinces rapidly and at scale will capture tons and accelerate the net-zero transition. We highlight some of this progress here.

SUBNATIONAL PROGRESS: Events, seminars and activities at the subnational level

NEWS: Highlights of subnational climate progress across China’s subnational regions

POLICIES: Subnational official statistics, policies and actions related to dual-carbon goals

PERSPECTIVES: New reports and insights from the field

Subnational Progress

US-China Subnational Climate Solutions Exchange

[The U.S.-China High-Level Event on Subnational Climate Action](#), held from May 29 to 30 in Berkeley, California, represents a significant step towards implementing the agreements reached by the two countries' heads of state at the San Francisco Summit and the Sunnylands Statement of 2023. These agreements emphasize enhanced cooperation to address the climate crisis.

The event featured numerous concurrent technical and business dialogues highlighting the critical role of local climate actions and the implementation of sustainable practices. From May 30 to 31, the [International Workshop on U.S.-China Subnational Clean Energy Transition and Climate Solutions Exchange](#), co-organized by Lawrence Berkeley National Lab (U.S.) and the Institute for Global Decarbonization Progress (China), focused on pivotal areas for climate change mitigation in both countries. These areas included flexible grids, industrial emissions reduction, low-carbon buildings, non-CO2 greenhouse gas reduction, and carbon markets. Event participants Rick Duke, U.S. Deputy Special Envoy for Climate Change, and Wang Yi, Vice Chair of China's National Climate Change Advisory Committee, underscored the importance of institutionalizing the exchange of ideas between think tanks and experts.

The event brought together over 50 participants, including policymakers, scholars, and representatives from regions such as Guangdong, Shanxi, Hainan, Shanghai, Tianjin, and Macau SAR. These participants engaged in discussions that led to a consensus on the necessity of translating goals and policies into actionable steps to achieve emissions reductions. Experts from both the U.S. and China emphasized the potential for bilateral cooperation to support climate actions in Global South countries. They highlighted that a just transition is vital for addressing climate change, offering economic development opportunities for industries and communities dependent on fossil fuels.

Seminar on New Quality Productive Forces Accelerating Just Transition in Shanxi

On June 27, 2024, the [“New Quality Productive Forces Accelerating Just Transition in Shanxi Seminar.”](#) organized by Shanxi Green and Low-Carbon Transition Cooperation Platform, was held in Taiyuan, Shanxi. Experts and scholars from government departments, universities, research institutions, financial institutions, non-governmental organizations, and enterprises from different fields engaged in in-depth deliberations on the strategic development of locally tailored new quality productive forces in Shanxi, as well as the crucial roles that different stakeholder groups could play in this process.

At the seminar, participants expressed the view that as a resource-based region, Shanxi should base the development of new quality productive forces on its coal resources and traditional industries. This would entail promoting the optimal combination of new and

traditional energy sources, as well as driving the development of energy storage and hydrogen-related industries. They also emphasized the need for interdisciplinary communication and collaboration among stakeholders to consolidate resources and provide specialized, cross-disciplinary, and comprehensive solutions for the cultivation of new productive forces.

The Shanxi Green and Low-Carbon Transition Cooperation Platform, jointly established by Shanxi Coshare Environment and the Institute for Global Decarbonization Progress, serves as an informal, cross-disciplinary, and open exchange platform, aiming to carry out research, training, and discussions on long-term, strategic, and forward-looking green and low-carbon transition topics in Shanxi.

News

[The city of Shenzhen \(Guangdong Province\) launched China's largest vehicle to grid power transfer demonstration](#) – Science and Technology Daily

On May 16th, over 1,400 new energy vehicles (NEVs) participated in a vehicle-to-grid (V2G) power transfer demonstration. During peak hours, 53 of these vehicles supplied electricity back to the grid, while the remainder charged after the peak period. Participants were incentivized with a reward of 4 RMB per kWh of electricity sent back to the grid and a discount of 0.8 RMB per kWh for off-peak charging. Experts from the local power supply bureau say the pilot has laid the groundwork for larger-scale V2G applications in the future, supporting the safety and stability of the power grid. The project represents a crucial step towards integrating renewable energy sources and advancing sustainable urban development.

[China launches a heavy duty truck battery swapping service line from Hebei Province to Shanxi Province](#) – Xinhua Net

Jointly built by Hebei Expressway, State Power Investment Corporation and State Grid Corporation of China, a green heavy-duty truck line was recently put into operation. The 550-kilometer-long truck line passes through several highways. The truck line contains 11 battery-swap stations in service areas along the highways to replace batteries for electric heavy-duty trucks.

[The city of Ordos \(Inner Mongolia Autonomous Region\) to fully reimburse hydrogen vehicles tolls](#) – The Paper

The first policy to fully subsidize hydrogen vehicles in Inner Mongolia Autonomous Region was officially implemented on June 1st 2024. For eligible hydrogen vehicles passing through toll stations in the city of Ordos, the toll will be fully refunded after review in the

following month. The subsidy has a trial period of two years. According to [China Automotive Strategy and Research Center](#), the per unit transportation cost of fuel cell vehicles can be reduced by 25% if tolls are fully reduced, taking 49-ton heavy-duty trucks as an example.

[Jiangsu Province issued its first “green power trading tariff” for distributed photovoltaic grid-connected electricity](#) – China Power News Net (CPNN)

In May 2024, a photovoltaic company in Jiangsu Province received its feed-in tariffs for April, marking Jiangsu's first issuance of “green power trading tariff” for distributed PV grid-connected electricity. By signing a monthly contract of 98 MWh of electricity with State Grid Jiangsu, the company could receive an additional 2900 RMB per month.

Cai Qixin, director of the electricity fee settlement department of Jiangsu Marketing Service Center, [notes](#) that distributed PV entering the green power market can provide opportunities for companies that need to purchase green electricity and further incentivize distributed PV.

Additional policy support is provided by Jiangsu’s *Notice Regarding Power Market Transactions in 2024*. The *Notice* makes it clear that electricity generated by distributed wind and PV in the province can participate in the green power transactions once green power certification is applied.

Policies

Renewable energy: Subnational governments accelerate renewable energy deployment

Anhui Province will further develop wind power to promote the green and low-carbon transition of rural energy

Anhui province released [Overall Plan for Rural Revitalization Project of Wind Power in Anhui Province](#), following China’s national policy drive entitled *Thousands of Townships and Tens of Thousands of Villages Harnessing the Wind Program*. The *Plan* proposes to configure wind power projects for rural revitalization with a construction scale of 500 kilowatts per village, implemented by county units. The province plans to add an installed capacity of approximately 2,000 megawatts of wind power, striving to put it into operation by the end of 2026.

Guangdong Province makes efforts to equip all newly-built factories and public institutions with rooftop photovoltaic by 2030

Guangdong Province released [Action Plan for Promoting High-quality Development of Distributed Photovoltaic in Guangdong Province](#). The *Plan* promotes the development of urban photovoltaic and rural distributed photovoltaic. It proposes that:

- By 2025 to achieve a rooftop photovoltaic coverage rate of 50% for newly built factories and public institutions and implement green retrofit in existing industrial parks, aiming for a photovoltaic coverage rate of no less than 50%.
- By 2030, the rooftop photovoltaic coverage rate will reach 100% for newly-built factories and public institutions, and green retrofitting in existing industrial parks with a photovoltaic coverage rate of no less than 50% will be implemented.

Ningxia Hui Autonomous Region relaxes the renewable energy utilization requirement to 90%, a five-percentage point decrease from the previous national 95% rate

Ningxia Hui Autonomous Region issued [Notice on Ensuring the Utilization of New Energy in Ningxia Hui Autonomous Region](#). The *Notice* sets the lower limit for the utilization rate of new energy in the region at 90%.

An analysis by [Caixin](#) pointed out China's ballooning wind and solar capacity makes it increasingly hard to ensure the 95% utilization rate. The National Energy Administration issued a [Notice](#) earlier in June proposing improvements in the planning and management of grid projects supporting 500 kV and above, below 500 kV, as well as distribution networks.

Methane: Subnational governments have begun to develop local methane plans

Ningxia Hui Autonomous Region released its [Action Plan for the Control of Methane Emissions in Ningxia Hui Autonomous Region](#). The autonomous region's 2025 targets include:

- Annual utilization of coal mine methane will reach 8 million cubic meters.
- The comprehensive utilization rate of livestock and poultry manure will exceed 90%.
- And the harmless treatment rate of urban sludge will exceed 99%.

Climate adaptation continues to be on the subnational political agenda

Shanghai Municipality issued [Climate Change Adaptation Action Plan in Shanghai \(2024-2035\)](#). Targets include:

- By 2025, more than 40% of the urban built-up area will fit the criteria for sponge city building.
- By 2030, more than 80% of the urban built-up area will achieve sponge city building standards.
- By 2035, the entire yearly water usage will be limited to 13.8 billion cubic meters, with the per capita park green space area reaching over 13 square meters, and a forest coverage rate of about 23%.

Equipment Renewals: Following national policy, Shanxi and Henan issued plans to accelerate equipment and technology transformation in the industry sector

[*Work Plan for Equipment Renewals of the Manufacturing Sector in Shanxi Province*](#) proposes that by 2027, the digital R&D design tool coverage rate and the numerical control rate of key processes in industrial enterprises above a designated size will exceed 90% and 75%, respectively. Production capacity below the energy efficiency benchmark level in key industries will be basically eliminated, energy efficiency of main energy-using equipment will generally reach energy-saving levels.

[*Implementation Plan for Accelerating Equipment Renewal of Industry Sector in Henan Province*](#) proposes that by 2027, about 3,000 technical transformation projects will be performed annually, and production capacity below the energy efficiency benchmark level in key industries will be basically phased out. The popularization rate of digital R&D and design tools and the numerical control rate of key processes in industrial enterprises above a designated size will exceed 90% and 75%, respectively. 500 intelligent factories and 500 green factories will be built.

Energy Storage: Inner Mongolia sets ambitious target on new energy storage capacity

Inner Mongolia issued [*Special Action Plan for the Development of New Energy Storage in Inner Mongolia Autonomous Region \(2024-2025\)*](#) to promote an ambitious plan on new energy storage. By 2024, 6,500 megawatts/29,000 megawatt-hours of new energy storage will be completed and put into operation. In 2025, this number will grow to 14,500 megawatts/65,000 megawatt-hours.

Hydrogen: Large-scale applications of hydrogen will be applied in Jiangsu's final consumption of energy, supporting the provincial dual carbon goals

[*The Medium- and Long-Term Plan for the Development of the Hydrogen Energy Industry in Jiangsu Province \(2024-2035\)*](#) proposes that:

- By 2027, around 100 commercial hydrogen refueling stations will be built, and the number of hydrogen fuel cell vehicles will exceed 4,000.
- By 2030, renewable energy hydrogen production will become the main source of hydrogen supply.
- By 2035, hydrogen energy will become an important part of the provincial energy system.

Perspectives

[*Analytical Report on Good Practices in Reducing Gas Emissions from Low-Concentration Coal Mines in China*](#) (Institute for Global Decarbonization Progress)

- This report focuses on the good practices of Chinese enterprises in reducing low-concentration coal mine gas emissions in Shanxi province, which has a high concentration of coal and coalbed methane resources. Through expert interviews and field research, it looks at how selected enterprises have achieved coal mine methane reduction within existing policy frameworks, using current technology, and in today's market environment, while generating dual economic and environmental benefits. The report also summarizes the key factors for replicating and promoting the implementation of these practices.

[*Low-Carbon City Development in China: Evaluation Results for More Than 100 Cities Around the World*](#) (World Resources Institute)

- This report constructs an indicator evaluation system from the perspective of urban green and low-carbon development, which includes low-carbon production, low-carbon consumption, low-carbon environment, and low-carbon processes, and selects 11 typical indicators such as low-carbon information index and carbon productivity of the secondary industry to carry out an evaluation of urban low carbon development for 102 cities around the world (43 international cities and 59 Chinese cities).

[*Real-World Use Cases for Zero-Emission Trucks: Coal Freight Trucks in Yulin City, Shaanxi Province*](#) (The International Council on Clean Transportation)

- This study reviews the zero-emission trucks (ZETs) market development and real-world performance, specifically heavy-duty battery electric and fuel-cell electric trucks, in Yulin city, Shaanxi province, China. The analysis examines the total cost of ownership (TCO) and economic benefits of using battery electric tractor trailers in coal freight based on empirical data on real-world operations, compared with diesel tractor-trailers.

[*Air Quality Benefits of an Accelerated Transition to New Energy Vehicles in Hainan Province, China*](#) (The International Council on Clean Transportation)

- This study explores the environmental benefits of accelerating the transition to new energy vehicles (NEVs), especially HDVs in Hainan, which are not regulated in Hainan's NEV development plan. The analysis highlights how faster NEV adoption can help Hainan improve its local air quality by 2035.

[*A Just Transition for Coal Regions: Learning from Two Coal Cities in Western China*](#) (Belfer Center for Science and International Affairs and Tsinghua University)

- Jointly published by the Environment and Natural Resources Program and Science, Technology, and Public Policy Program at the Belfer Center for Science and International Affairs and the Institute for Climate Change and Sustainable Development (ICCSA) at Tsinghua University, this study analyzes the transition processes and experiences of two coal-depleted cities.

About the Institute for Global Decarbonization Progress (iGDP)

The Institute for Global Decarbonization Progress (iGDP) is a non-profit think tank focusing on green and low-carbon development with offices in China and Europe. Established in Beijing in 2014, iGDP is dedicated to supporting China's green and low-carbon practices, contributing to the global effort to address climate change, and providing decision-makers, investors and local communities with forward-thinking solutions. Through interdisciplinary, systematic, and empirical policy research, iGDP promotes robust energy and climate solutions with high implementation and investment feasibility. iGDP works with its partners to promote a zero emissions future and tell the story of China's green and low-carbon development.

About China Carbon Neutrality Tracker (CCNT)

China Carbon Neutrality Tracker (CCNT) is an online database and interactive platform that tracks China's national and sub-national carbon neutrality actions by collecting and sorting publicly available policy documents with an impact on GHG emissions. It offers an overview and structural classification of China's climate actions and serves as a comprehensive compendium of the specific policies and actions of various government departments and key non-state entities. CCNT includes all policies and actions with a climate impact and classifies them by region and sector. It gathers policy information primarily from authoritative government sources at national, regional, provincial and municipal levels. CCNT currently has national and provincial webpages. The database is continuously updated to include new provincial and city-level actions, and CCNT regularly issues short policy briefings.

For the latest national and subnational carbon neutrality actions, please visit the CCNT database at <https://ccnt.igdp.cn>.

If you have any suggestions or feedback, please email us at ccnt@igdp.cn.

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