8-2023

Competition among purposes: The Chinese experience in the governance of climate change and energy transition

Henry S. GAO
Singapore Management University, henrygao@smu.edu.sg

Weihuan ZHOU

Competition among Purposes: The Chinese Experience in the Governance of Climate Change and Energy Transition

Henry Gao and Weihuan Zhou

(This article has been accepted for publication in the Journal of International Economic Law published by Oxford University Press.)

ABSTRACT

Energy governance at the international level is fraught with difficulties due to the "competition among purposes" between different bodies of international law. In this paper, we extend this thesis to argue that the same tension may be found in domestic energy governance. Drawing from China's experience in the governance of climate change and energy transition, we analyze how the misalignment of incentives between different actors and the incomplete market reform led to a drastic shift in policy in 2021. We also compare the different approaches in China's energy governance and trade governance and draw some general lessons on how developing countries might overcome such governance problems.

I. INTRODUCTION

China is a major player in climate change mitigation. In September 2016, China formally ratified the Paris Agreement.[1] Four years later, President Xi Jinping announced China's plan to further scale up its Intended Nationally Determined Contributions, aiming at achieving CO2 emissions peak before 2030 and carbon neutrality before 2060.[2] A central element of the plan is reducing China's heavy reliance on coal power. As a result, China's use of coal already saw a steady decrease in 2018 compared to previous years. While coal demand increased in 2019 and 2020, new coal power plants approved in 2021 declined by approximately 58% compared to 2020.[3] However, the good progress in energy transition was interrupted by the power outage sprawling over 20 provinces in China in September 2021, which resulted in a U-turn in the policy. Consequently, China reversed course and approved more coal power plants in the last month of 2021 than it did in the previous eleven months combined. This trend continued in 2022, with the coal power capacity approved in the first quarter of 2022 accounting for almost half of the total capacity approved in 2021.

This paper explores the reasons behind China's policy shift, drawing from insights on the policy-making process in China's climate change mitigation and energy transition policy. In particular, the paper addresses the following questions: What are the major domestic factors driving China's policy and the major players involved in the decision-making? What are the

[1] Brian Spegele, 'China's Legislature Ratifies Paris Agreement on Climate Ahead of G-20 Meeting', https://www.wsj.com/articles/chinas-legislature-ratifies-paris-agreement-on-climate-ahead-of-g-20-meeting-1472872781 (02 September 2016).

[2] CGTN, 'Full Text: Xi Jinping's Speech at General Debate of the 75th Session of the United Nations General Assembly', https://news.cgtn.com/news/2020-09-23/Full-text-Xi-Jinping-s-speech-at-General-Debate-of-UNGA-U07X2dn8Ag/index.html (23 September 2020).

[3] Yujie Xue, 'China's approvals for new coal plants rebound amid renewed focus on energy security after last year's power crisis: Greenpeace', https://www.scmp.com/business/article/3185844/chinas-approvals-new-coal-plants-rebound-amid-renewed-focus-energy (20 July 2022).

conflicts between national and subnational interests and approaches, and how have these conflicts been resolved? How has the bargaining between different domestic players impacted China's approaches in trade negotiations?

The paper also compares the implementation of climate policies with the implementation of trade policies in China, discusses the potential consequences of "competition among purposes"[4] at both the domestic and international levels, and offers more general observations on ways to help developing countries overcome such competition and conflicts.

II. THE EVOLUTION OF CHINA'S CLIMATE CHANGE POLICY: A BRIEF ACCOUNT

The development of climate policies in China has been shaped not only by China's overarching economic development goals and plans, but also by China's international engagements and commitments. As early as in 1972, the United Nations Conference on the Human Environment prompted China to consider environmental issues and develop its first set of environmental legislation.[5] However, it was not until the 1990s that China made major progress in advancing its environmental policy and regulatory framework. In 1990, the State Council established the National Coordination Group on Climate Change (NCGCC), which subsequently participated actively in the United Nations Conference on Environment and Development (UNCED) in 1992, also known as the Earth Summit.[6] This conference developed a blueprint for international cooperation on environmental and development issues and led to the conclusion of the United Nations Framework Convention on Climate Change (UNFCCC), the first international treaty on climate change.[7] China contributed to the negotiations of the UNFCCC and vigorously advocated the principle of "common but differentiated responsibilities".[8] This principle

---

[4] J. E. Viñuales, *The International Law of Energy* (Cambridge University Press, 2022), at 21-29. In his book, Viñuales discussed the conflict between different policy goals such as 'availability', 'security', 'diversification', 'efficiency', 'safety', 'access' and 'sustainability', as well as how the quest for these goals through expressions in various international legal instruments may lead to competitions and conflicts. Due to space constraints, this paper does not purport to discuss in depth the competition among purposes in international law, which is already addressed in the excellent work by Viñuales. Instead, this paper focuses on explaining how similar conflict or misalignment of objectives may pose challenges for climate actions in the domestic context, particularly the unique problems facing China.

[5] Tianbao Qin & Meng Zhang, 'Development of China's Environmental Legislation', in Eva Sternfeld (eds), *Routledge Handbook of Environmental Policy in China* (New York: Routledge 2017), at 19.

[6] Ye Qi and Tong Wu, 'The Politics of Climate Change in China', 4 (4) *WIREs Climate Change* 301 (2013), at 303. See also United Nations, 'A new blueprint for international action on the environment', https://www.un.org/en/conferences/environment/rio1992.

[7] United Nations, 'What is the United Nations Framework Convention on Climate Change?', https://unfccc.int/process-and-meetings/what-is-the-united-nations-framework-convention-on-climate-change. China has also actively engaged in the work of the Intergovernmental Panel on Climate Change (IPCC) which was established in 1988 and since then has been a core international body providing detailed and up-to-date scientific assessments of climate change to assist the work of the UNFCCC and climate actions by individual governments. Many Chinese experts have been involved in the preparation of IPCC's assessment reports. See IPCC, 'History of the IPCC', undated, https://www.ipcc.ch/about/history/; Ministry of Ecology and Environment of the People's Republic of China, 'China's Achievements, New Goals and New Measures for Nationally Determined Contributions' (中国落实国家自主贡献成效和新目标新举措), https://unfccc.int/sites/default/files/NDC/2022-06/%E4%B8%AD%E5%9B%BD%E8%90%BD%E5%AE%9E%E5%9B%BD%E5%AE%B6%E8%87%AA%E4%B8%BB%E8%B4%A1%E7%8C%AE%E6%88%90%E6%95%88%E5%92%8C%E6%96%B0%E7%9B%AE%E6%A0%87%E6%96%B0%E4%B8%BE%E6%8E%AA.pdf.

[8] David Sandalow et al., 'Guide to Chinese Climate Policy 2022, at 32, https://chineseclimatepolicy.oxfordenergy.org/. See also United Nations, 'United Nations Framework Convention on Climate Change', Article 3.1, https://unfccc.int/resource/docs/convkp/conveng.pdf.

effectively led to more onerous climate obligations on industrialized countries and economies in transition while according more flexibilities to developing countries including China. The Convention created the Conference of the Parties (COP) to monitor the implementation of the covered commitments, promote information exchange and coordination and further international cooperation on climate actions.[9] Since its first meeting in 1995, the COP has been convened annually (except for 2020) and had 27 sessions by 2022.[10] China has actively engaged in all COPs, including the negotiations and conclusion of the Kyoto Protocol[11] at COP3 in 1997 and the Paris Agreement[12] at COP21 in 2015.

China's active engagement in climate policymaking at the international level has progressively enriched its own knowledge about climate change, leading to the gradual elevation of sustainable development and climate policies to a core, strategic national policy in China. In 1998, the NCGCC was relocated to the State Development Planning Commission, the predecessor of the National Development and Reform Commission (NDRC) and the most powerful agency in the central government.[13] The 10th Five-Year Plan (2001-2005) made a reference to climate change for the first time and emphasized the growth of renewable energy, energy conservation and environmental protection leading to the promulgation or amendments of a range of laws and regulations such as the Renewable Energy Law which took effect in 2006.[14] However, during this period the national priority was focused on economic growth, and no specific targets were set for climate actions. Due to the heavy reliance on energy-intensive industries for economic development and industrialization, China became the world's largest emitter of energy-related carbon dioxide (CO2) in 2005.[15] The environmental degradation, especially air pollution, intensified public debate over China's environmental policy and provoked the central government to strengthen climate policy and actions in the next decade.

During the 11th Five-Year Period (2006-2010), the central government set energy efficiency targets, allocated individual targets to each province, and required local governments to implement.[16] In 2007, the NDRC published China's first detailed National Plan to Address Climate Change,[17] and the NCGCC was further elevated to become the National Leading Group on Climate Change. Led by the then Premier Wen Jiabao, this group included all major ministries of the central government in charge of developing national climate policies and

---

[9] See above n 8, United Nations, Article 7.

[10] United Nations, 'Conference of the Parties (COP)', https://unfccc.int/process/bodies/supreme-bodies/conference-of-the-parties-cop.

[11] United Nations, 'What is the Kyoto Protocol?', https://unfccc.int/kyoto_protocol.

[12] United Nations, 'The Paris Agreement. What is the Paris Agreement?', https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement.

[13] See above n 6, Ye Qi and Tong Wu, at 303.

[14] See above n 8, David Sandalow et al., at 32; Tianbao Qin and Meng Zhang, 'Development of China's Environmental Legislation', in Eva Sternfeld (eds), *Routledge Handbook of Environmental Policy in China* (New York: Routledge 2017), at 21. See also The Central People's Government of the People's Republic of China, 'The Outline of the 10th Five-Year Plan for Economic and Social Development of the People's Republic of China' (中华人民共和国国民经济和社会发展第十个五年计划纲要), http://www.gov.cn/gongbao/content/2001/content_60699.htm (15 March 2001); The Central People's Government of the People's Republic of China, 'Renewable Energy Law of the People's Republic of China' (中华人民共和国可再生能源法), http://www.gov.cn/ziliao/flfg/2005-06/21/content_8275.htm (01 January 2006).

[15] International Energy Agency, 'An Energy Sector Roadmap to Carbon Neutrality in China', at 22, https://www.iea.org/reports/an-energy-sector-roadmap-to-carbon-neutrality-in-china (September 2021).

[16] See above n 8, David Sandalow et al., at 33-35.

[17] National Development and Reform Commission, 'China's National Plan for Addressing Climate Change' (中国应对气候变化国家方案), https://www.ccchina.org.cn/WebSite/CCChina/UpFile/File189.pdf(June 2007).

actions, guiding China's international cooperation and negotiations, and coordinating the implementation of greenhouse gas (GHG) mitigation strategies.[18] China's effort to address environmental issues during this period, however, was compromised by the need to react to the global financial crisis in 2008-09 through the introduction of massive stimulus plans to maintain economic growth including supporting energy-intensive industries.[19] This was another notable incident which revealed the challenges faced by the Chinese government in overcoming the underlying tensions between its pursuit of climate goals and economic growth.

The 12th Five Year Plan (2011-2015) was a landmark in China's advancement of climate policy leading to a period of remarkable achievements at both domestic and international levels. The Plan set out a clear mandate to transform China's economic development model with the transition to a green economy and a sustainable development path as one of its priorities.[20] It devoted a whole chapter to climate change and set forth specific, binding targets and action plans including reducing carbon intensity and energy consumption, increasing non-fossil energy sources and government support for strategic, green industries and technologies, promoting the restructuring of the coal industry, enhancing the system for monitoring GHG emissions, planning the creation of a carbon trade market, etc.[21] More detailed plans were subsequently released in a series of implementation regulations including most significantly the Work Plan for Controlling Greenhouse Gas Emission[22] published by the State Council in December 2011 and the National Plan on Climate Change issued by the NDRC in 2014.[23] The latter set out China's plans and goals relating to GHG mitigation, climate change adaptation and priorities in its green transition by 2020.

Globally, China was an active participant in the negotiation of, and a strong proponent for, the Paris Agreement. The Agreement imposes binding commitments on both developed and developing economies, thereby pushing all nations to take mitigation and adaptation policies and actions for specific climate goals. In particular, the objective is to limit global average temperature to well below 2 degrees Celsius, and preferably 1.5 degrees Celsius, compared to pre-industrial levels.[24] Each party is required to determine and communicate its intended contributions, known as "nationally determined contributions" (NDCs), and may enhance its levels of contributions at any time. China submitted its first NDCs to the UNFCCC in 2015, committing to specific targets for the reduction of CO2 emissions and the increase of non-fossil

[18] See above n 6, Ye Qi and Tong Wu, at 303. See also China Climate Change Info-Net, 'Introduction to the National Coordination Group for Addressing Climate Change', https://www.ccchina.org.cn/list.aspx?clmId=67 (17 July 2006).
[19] See above n 8, David Sandalow et al., at 34.
[20] The Central People's Government of the People's Republic of China, 'The Outline of the 12th Five-Year Plan for Economic and Social Development of the People's Republic of China' (中华人民共和国国民经济和社会发展第十二个五年规划纲要), http://www.gov.cn/2011lh/content_1825838.htm (16 March 2011).
[21] For a more detailed discussion of China's climate policy and goals under the 12th Five Year Plan, see Sam Geall et al., 'China's Green Revolution: Energy, Environment and the 12th Five-Year Plan', https://www.greengrowthknowledge.org/sites/default/files/downloads/resource/China%E2%80%99s_Green_Revolution_Energy_Environment_and_the_12th_Five-Year_Plan_Chinadialogue.pdf.
[22] The State Council of the People's Republic of China, 'Working Plan for Greenhouse Gas Emission Control in Implementing the 12th Five-Year Plan' (国务院关于印发"十二五"控制温室气体排放工作方案的通知), http://www.gov.cn/zwgk/2012-01/13/content_2043645.htm (01 December 2011).
[23] National Development and Reform Commission, 'The National Plan (2014-2020) for Addressing Climate Change' (国家发展改革委关于印发国家应对气候变化规划(2014-2020 年)的通知), https://www.ndrc.gov.cn/xxgk/zcfb/tz/201411/t20141104_963642.html (19 September 2014).
[24] United Nations, 'Paris Agreement', https://unfccc.int/sites/default/files/english_paris_agreement.pdf.

fuels in primary energy consumption, amongst other commitments.[25] These targets were incorporated in China's 13th Five-Year Plan (2016-2020).[26] To achieve these targets, the central government rolled out a new set of policy documents to detail the action plans and allocate targets to provinces.[27] By the end of this period, the CO2 emissions per unit of GDP (i.e. carbon intensity) in China were approximately 48% lower than the 2005 level (or a 40-50% reduction), and the share of non-fossil fuels in primary energy consumption was approximately 16% marking "a significant increase of 8.5 percentage points compared with 2005".[28]

Since 2020, President Xi Jinping reiterated, in a series of high-profile global events, China's pledges to combatting climate change through more vigorous policies and measures in order to achieve "CO2 emissions peak before 2030 and carbon neutrality before 2060" which are now known as China's "30-60" or "dual carbon" goals.[29] This commitment was incorporated in China's updated NDCs submitted to the UNFCCC prior to COP26 in October 2021.[30] More specifically, the NDCs included China's ambitious goals to

> "*lower CO2 emissions per unit of GDP by over 65% from the 2005 level, to increase the share of non-fossil fuels in primary energy consumption to around 25%, to increase the forest stock volume by 6 billion cubic meters from the 2005 level, and to bring its total installed capacity of wind and solar power to over 1.2 billion kilowatts by 2030*".

These commitments and goals are also embedded in China's 14th Five-Year Plan (2021-2025)[31] and are being implemented through a range of policy documents designed to promote climate actions and compliance nationwide during the Plan period in pursuit of the longer-term goals on CO2 emissions peak and carbon neutrality. In May 2021, the central government established a Leading Group on Carbon Peak and Carbon Neutrality to strengthen and better coordinate the work for its "30-60" goals.[32] Through the work of this group, China adopted a "1+N" policy system under which the "1" refers to the *Working Guidance for Completely, Accurately and Comprehensively Implementing the New Development Concept and Achieving Carbon Dioxide*

---

[25] National Development and Reform Commission, 'Enhanced Actions on Climate Change: China's Intended Nationally Determined Contributions' (强化应对气候变化行动—中国国家自主贡献), https://policy.asiapacificenergy.org/sites/default/files/China%27s%20INDC%20-%20on%2030%20June%202015.pdf (30 June 2015).

[26] The Central People's Government of the People's Republic of China, 'The Outline of the 13th Five-Year Plan for Economic and Social Development of the People's Republic of China' (中华人民共和国国民经济和社会发展第十三个五年规划纲要), http://www.gov.cn/xinwen/2016-03/17/content_5054992.htm (17 March 2016).

[27] National Development and Reform Commission and National Energy Administration, 'The 13th Five-Year Plan for the Development of Energy' (能源发展"十三五"规划), http://www.nea.gov.cn/135989417_14846217874961n.pdf (26 December 2016); The State Council of the People's Republic of China, 'The Comprehensive Working Plan for Energy Conservation and Emission Reduction for Implementing the 13th Five-Year Plan' ("十三五"节能减排综合工作方案), http://www.gov.cn/zhengce/content/2017-01/05/content_5156789.htm (20 December 2016).

[28] The State Council Information Office of the People's Republic of China, 'Full Text: Responding to Climate Change: China's Policies and Actions', http://www.scio.gov.cn/zfbps/32832/Document/1715506/1715506.htm (27 October 2021).

[29] See above n 2, CGTN; Xinhua, 'Full Text: Remarks by Chinese President Xi Jinping at Leaders Summit on Climate', http://www.xinhuanet.com/english/2021-04/22/c_139899289.htm (22 April 2021).

[30] See above n 7, Ministry of Ecology and Environment.

[31] The Central People's Government of the People's Republic of China, 'The Outline of the 14th Five-Year Plan for National Economic and Social Development and Long-Range Objectives for 2035 the People's Republic of China' (中华人民共和国国民经济和社会发展第是十四五个规划和 2035 年远景目标纲要), http://www.gov.cn/xinwen/2021-03/13/content_5592681.htm (13 March 2021).

[32] See above n 7, Ministry of Ecology and Environment, at 5-6.

Peak and Carbon Neutrality (hereinafter Working Guidance 2021),[33] the overarching national plan jointly issued by the Central Committee of the Communist Party of China and the State Council in October 2021. The "N" refers to all subordinate policy documents including detailed action plans in different industries and sectors of the economy. For example, the issuance of the Working Guidance was accompanied by the release of the *Action Plan for Carbon Dioxide Peaking Before 2030*[34] by the State Council, which constitutes part of the "N". This design of China's climate policies, with the central government playing a leadership role, continues to reinforce China's top-down approach to climate policymaking.

III. THE COAL ENERGY TRANSITION: A CLOSER LOOK

The overview of the evolution of China's climate policy above shows convincingly that climate change has become "an integral part of China's development vision and strategy" and that China has committed to "more ambitious action to tackle climate change."[35] At the same time, China's climate action has faced considerable, ongoing challenges. To understand the major drivers of and challenges for China's climate actions, we use as a case study coal energy transition, which is critical to the success of China's climate policy.

China's phenomenal economic development and industrialization in past decades has relied heavily on energy-intensive activities leading to massive production and consumption of fossil fuels, especially coal. As the world's largest coal user, in 2018 China's electricity and heat generation accounted for approximately 45 percent of all domestic GHG emissions, and its heavy industrial production, particularly in the steel, iron and cement sectors, accounted for approximately 85 percent of industrial CO2 emissions.[36] Energy efficiency, renewables and reduction of coal use are therefore essential to the achievement of China's climate goals on CO2 emissions peaking and carbon neutrality.[37] Consequently, China has progressively intensified its climate policy and actions in these areas leading to a significant growth of low-carbon fuel and technologies and reduction of coal use in power and industrial production (especially between 2013-2018), amongst other accomplishments.[38] Concrete actions taken in the 13th Five-Year period involved, for instance, restricting the construction of new coal-fired power generation plants, closing existing plants which failed to comply with efficiency standards, subsidizing clean coal power generation, energy-efficiency investments, renewable energies, related technologies and R&D, etc.[39] During the current 14th Five-Year Plan period, China remains committed to its ambitious goals in these areas. For example, by 2025, China aims to reach 20% share of non-fossil fuel in primary energy use and to reduce energy intensity

[33] The Central People's Government of the People's Republic of China, 'Working Guidance for Carbon Dioxide Peaking and Carbon Neutrality in Full and Faithful Implementation of the New Development Philosophy' (完整准确全面贯彻新发展理念做好碳达峰碳中和工作的意见), http://www.gov.cn/zhengce/2021-10/24/content_5644613.htm (22 September 2021).

[34] The State Council of the People's Republic of China, 'The Action Plan for Reaching Carbon Dioxide Peak before 2030' (2030 年前碳达峰行动方案), http://www.gov.cn/zhengce/content/2021-10/26/content_5644984.htm (24 October 2021).

[35] See above n 15, International Energy Agency, at 37.

[36] See above n 8, David Sandalow et al., at 45; World Bank Group, 'Country Climate and Development Report: China', at 26, 45, https://openknowledge.worldbank.org/bitstream/handle/10986/38136/FullReport.pdf (October 2022).

[37] See above n 8, David Sandalow et al., at 14.

[38] Ibid., at 24-26.

[39] Craig Hart et al., 'Mapping China's Climate & Energy Policies', at 86-101, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/786518/China_Climate_Map_Public_Secured_2019-3-1.pdf (Dec 2018).

by 13.5% and carbon intensity by 18% from the 2020 levels.[40] It sets specific targets for the expansion of major renewable energies and the reduction of coal production and consumption in key industrial processes making coal consumption peaking a priority.[41] Apart from these internal targets, China's updated NDCs also include commitments not to build new coal-fired power projects overseas, and it has cancelled or stopped investing in 26 such projects since 2021.[42] At the same time, however, China's national policy also emphasizes the need to protect energy security and improve self-sufficiency in energy supply,[43] foreshadowing the major policy considerations that may counterbalance China's climate pledges.

There are notable driving forces behind China's entrenched commitment to climate actions. This commitment is first and foremost a strategic choice aligned with and supportive of China's own development goals and political needs. As Chinese leaders become increasingly convinced that the old "growth-at-any-cost model" cannot be sustained, [44] energy efficiency, decarbonization and sustainability enter the centrepiece of China's economic transformation. While economic growth remains a priority, Chinese leaders become increasingly aware of the political risks associated with growing social unrest due to environmental degradation and adverse effects of climate change.[45] Thus, there is a strong political will to steer China toward the new sustainable development path to balance economic growth with the environment and public health concerns and enhance government and maintain political stability.[46] At the international level, climate policies and actions play an important role in fostering China's reputation as a responsible stakeholder and trustworthy partner[47] and securing "recognition of its status as a global power and its leadership in international governance".[48] By committing to ambitious climate targets, China can use its international commitments to push domestic reforms and economic transformation.[49] With the political consensus reached within the central government, China's political system provides the foundation for its top-down approach to climate policymaking which facilitates the design of climate policies, as further discussed in Section IV.[50]

At the same time, China's climate action faces acute challenges particularly due to the need to accommodate its energy needs and the diverse interest of local governments, industries, state entities and other stakeholders in implementation. Here too, China's commitment to the reduction of coal production and consumption provides a telling example. While China took merely an incremental approach to reducing coal use in the past, it deviated from its coal reduction policy in September 2021, when over 20 provinces in China cut power supplies

[40] See above n 34, the State Council.
[41] Ibid.
[42] See above n 7, Ministry of Ecology and Environment, at 2; Centre for Research on Energy and Clean Air, 'Year Review: The Impact of China's Ban on Overseas Coal Power Plants on Global Climate', at 3, https://energyandcleanair.org/wp/wp-content/uploads/2022/09/ChinaBan-Report_ChV_FINAL27Sept22.pdf, (22 September 2022).
[43] National Development and Reform Commission and National Energy Administration, 'The 14th Five-Year Plan for the Modern Energy System' ("十四五"现代能源体系规划), http://www.nea.gov.cn/1310524241_16479412513081n.pdf (29 January 2022).
[44] Genia Kostka, 'China's Local Environmental Politics', in Eva Sternfeld (eds), *Routledge Handbook of Environmental Policy in China* (New York, Routledge, 2017), at 31.
[45] Ibid.
[46] See above n 15, International Energy Agency, at 35-36; Lisa Williams, 'China's Climate Change Policies: Actors and Drivers', at 16, https://www.files.ethz.ch/isn/182715/chinas-climate-change-policies.pdf (July 2014).
[47] See above n 46, Lisa Williams, at 18.
[48] See above n 39, Craig Hart et al., at 138.
[49] See above n 15, International Energy Agency, at 35.
[50] See above n 6, Ye Qi and Tong Wu, at 302.

allegedly due to power outages. This in turn led to a massive approval of new coal power plants, with more approvals in the final month of 2021 than in all preceding 11 months combined.[51] The effect was also felt in 2022, with coal power capacity approved in the first quarter alone equals to half of the total approved capacity in 2021.[52]

IV. MAKING SENSE OF CHINA'S POLICY SHIFT: GAPS IN ENERGY TRANSITION AND GOVERNANCE

What explains the policy shift in 2021? On the surface, here are a few apparent reasons, such as the rising demand, the insufficient supply from traditional coal power, and the unreliability of renewable energy.[53] However, deep down, China's policy shift must be understood in terms of the multifaceted interactions among different stakeholders at both the domestic and international levels. More specifically, the bargaining between these forces shapes not only the making of China's domestic policy and international commitments, but also the implementation (or non-implementation) of such policies.

As noted above, China's policymaking generally follows a top-down process, where policies are made by the central leadership without much input from the local governments or consultations with other stakeholders. This means that, at the front-end of policy making, China could avoid the tortuous bargaining process required in many other countries which often leads to the need to strike compromises that nobody is happy with, or even paralysis where the decision could not made. This is reflected in China's climate policymaking, where the main decision-maker is the central government, or more specifically President Xi himself.

At the domestic level, the seriousness China has attached to climate policies reflects President Xi's "New Development Concept" (新发展理念). True to the nature of Communism as an ideology, even paramount leaders have come up with new "thoughts", from Deng Xiaoping's "Socialism with Chinese Characteristics" to Jiang Zemin's "Three Represents", to Hu Jintao's "Scientific Outlook on Development", and finally to "Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era", where the "New Development Concept" is an important component. This Concept emphasizes "Innovation, Coordination, Green, Openness, Sharing" as a way to shift China's economic model to one of a high-quality and low-pollution.[54] The link between the Concept and China's carbon goals is explicitly confirmed by the top policy document issued by the central government, i.e., the Working Guidance 2021.[55] By shifting the policy in a new direction, the Concept also provides a convenient way to test the loyalty of local officials based on whether they faithfully implement the Concept, which is why the Working Guidance 2021 repeatedly refers to "compacting local responsibilities"[56] and "strengthening supervision and assessment"[57] under the overall leadership and coordination of

[51] Greenpeace, 'Provincial Approval on Coal Fired Power Revived after Power Rationing, Local State-Owned Capital Refilled Strongly', https://www.greenpeace.org.cn/2022/07/20/2021-2022q1-coal-brieifng/ (20 July 2022).
[52] Ibid.
[53] David Fishman, Reasons Behind China's Power Shortage in Q4 2021, Resultant Reform Measures, and the Impact on Power Markets, in Oxford Energy Forum, March 2022, Issue 131, at 13-20, https://a9w7k6q9.stackpathcdn.com/wpcms/wp-content/uploads/2022/03/OEF-131.pdf (29 January 2023).
[54] Xinhua, 'Full and Faithful Implementation of the New Development Philosophy: Grasp the theory of 'Five Inevitable Routes' deeply and thoroughly', http://www.gov.cn/xinwen/2022-03/14/content_5678878.htm (14 March 2022).
[55] See above n 33, The Central People's Government.
[56] Ibid.
[57] Ibid.

the central government as the way to achieve the "dual carbon" goals. In addition, the central government launched a major restructuring of agencies in 2018 to provide both the carrot and stick needed to get local governments in action. The carrot is held by the newly formed Ministry of Natural Resources (MNR), which took over the portfolio from several other agencies, including the all-important power of urban and rural planning from the NDRC and the Ministry of Housing and Urban-Rural Development.[58] The MNR "takes charge of the owner's responsibilities for all types of natural resource assets owned by the whole people", which gives it control of all natural resources as a powerful carrot.[59] On the other hand, a new Ministry of Ecology and Environment was also formed to take over the powers of anti-pollution enforcement that used to be scattered through several agencies[60] such as the former Ministry of Land and Resources, the Ministry of Water Resources, the Ministry of Agriculture, and the State Oceanic Administration, as well as the enforcement of climate change and emission reduction goals from the NDRC.[61] This provides it with a big stick as all environmental enforcement powers are now controlled by one agency.

If the *raison d'être* of "promoting high-level development" still stays true to climate goals at the domestic level, the main rationale for climate responsibility at the international level, i.e. "to foster an image of responsible power", sounds even more instrumentalist.[62] In particular, President Trump's "irresponsible"[63] decision to withdraw the US from the Paris Agreement in 2017[64] left a vacuum in climate leadership, one which China was eager to fill as a way to "enhance China's international influence and discourse power".[65] By the time that the withdrawal took effect in late 2020,[66] China further realized that, given the importance that Democratic Party Presidential candidate Joe Biden attached to the Paris Agreement, climate change could provide an opening to revive bilateral cooperation between the US and China, following the devastating "trade war" waged by the Trump administration, akin to the Ping-pong diplomacy which opened the door for the establishment of the bilateral diplomatic relations some 50 years ago. This point was confirmed explicitly by President Xi in his first summit with Biden in November 2021, where he emphasized that "given that China and the U.S. used to work together to make the Paris Agreement possible, climate change can definitely become a new highlight of Sino-US cooperation".[67] With such an instrumentalist approach to

---

[58] The Central People's Government of the People's Republic of China, 'The Plan for the Institutional Reform of the State Council of the People's Republic of China' (国务院机构改革方案), http://www.gov.cn/guowuyuan/2018-03/17/content_5275116.htm (17 March 2018).

[59] Wang Yong, 'Explanations on the Plan for the Institutional Reform of the State Council of the People's Republic of China' (关于国务院机构改革方案的说明), http://www.gov.cn/guowuyuan/2018-03/14/content_5273856.htm (17 March 2018).

[60] Ibid.

[61] Ibid.

[62] China Environment News, 'Persistently Confronting Climate Change and Continuing to Involve, Contribute and Lead the Global Construction of Ecological Civilization: In the Memory of the Ratification of the Paris Agreement', http://epaper.cenews.com.cn/html/2020-12/14/content_100353.htm (14 December 2020).

[63] Ministry of Foreign Affairs of the People's Republic of China, 'Report on the United States Prejudicing Global Environmental Governance', https://www.fmprc.gov.cn/web/wjb_673085/zzjg_673183/tyfls_674667/xwlb_674669/202010/t20201019_7671146.shtml (19 October 2020).

[64] Timothy Cama and Devin Henry, 'Trump: We Are Getting out of Paris Climate Deal', https://thehill.com/policy/energy-environment/335955-trump-pulls-us-out-of-paris-climate-deal/ (1 June 2017).

[65] See above n 33, The Central People's Government.

[66] Leslie Hook and Katrina Manson, 'US Formally Withdraws from Paris Climate Agreement', https://www.ft.com/content/54f600e0-183f-41fd-8d4b-69ab4403e331 (4 November 2020).

[67] Xinhua, 'President Xi Jinping's Web Conference with the US President Biden', http://www.gov.cn/xinwen/2021-11/16/content_5651232.htm (16 November 2021).

climate change, it is no surprise that China decided to temporary suspend the bilateral climate change talks with the US as a counter-measure against the US when US Congress Speaker Nancy Pelosi visited Taiwan in August 2022 despite China's strong opposition.[68] As made clear by China, it "had to suspend Sino-US climate change negotiations in view of Pelosi's visit, and all consequences must be borne by the United States."[69]

While the central government has exclusive competence for climate policy, when it comes to the implementation of such policies, the central government must work together with the local government and other stakeholders such as the power plants and downstream user industries. This is where things get tricky, as these players often have different incentives and therefore do not always behave the same way as the central government would prefer.

As noted earlier, after the central government set forth the overarching climate goals, it allocated specific targets to different provinces for local governments to implement. Unlike their counterparts in the West,[70] the local governments in China do not have to answer to local constituencies or civil society groups. Instead, their main function is to implement the targets set by the central government. The promotion of local officials is decided by how well they implement such targets, which used to focus predominantly on GDP growth. In view of the growing importance of environmental issues, the central government included environmental indicators such as climate goals in recent years. So why did the central government take such an abrupt policy shift in late 2021? We offer two explanations.

A. Last-minute rush to meet the targets

On 12 August 2021, the NDRC issued the notice on the "First half of 2021 Barometer on the completion of energy consumption dual control targets in each region", which listed in the top warning category 9 provinces for the achievement of energy intensity reduction goals, and 8 provinces for the achievement of total energy consumption control goals.[71] The NDRC also made clear that, "from the date of issuance of this notice, for regions where energy consumption intensity has risen instead of fallen, the energy-saving review of "two high" (high energy consumption, high emissions) projects will be suspended in 2021".[72] To make sure that the local governments got the message, the NDRC further issued the "Plan on the improvement of the dual control system for energy consumption intensity and total volume" on 16 September 2021,[73] which explicitly stated that the assessment results for the dual control system "will be handed over to the competent department of cadres as an important basis for the comprehensive

[68] Ministry of Foreign Affairs of the People's Republic of China, 'Sanction against Pelosi's Sneaky Visit to Taiwan', https://www.fmprc.gov.cn/fyrbt_673021/202208/t20220805_10735604.shtml (5 August 2022).
[69] Xinhua, 'Facts about Pelosi's Visit to Taiwan', http://www.xinhuanet.com/2022-08/25/c_1128944443.htm (25 August 2022).
[70] Christopher Gore and Pamela Robinson, 'Local Government Response to Climate Change: Our Last, Best Hope?', in Henrik Selin and Stacy D VanDeveer (eds), *Changing Climates in North American Politics: Institutions, Policymaking, and Multilevel Governance* (The MIT Press, 2009).
[71] National Development and Reform Commission, 'Report on the implementation of the dual-control of energy consumption in each province in the first half of 2021' (关于印发《2021 年上半年各地区能耗双控目标完成情况晴雨表》的通知), https://www.ndrc.gov.cn/xwdt/tzgg/202108/t20210817_1293836.html (17 August 2021).
[72] Ibid.
[73] National Development and Reform Commission, 'Improving the plan of the dual-control of the intensity and quantity of energy consumption' (关于印发《完善能源消费强度和总量双控制度方案》的通知), https://www.ndrc.gov.cn/xwdt/tzgg/202109/t20210916_1296857.html?code=&state=123 (16 September 2021).

assessment and evaluation of the leadership team and leading cadres of the Provincial Government".[74]
These documents spurred the provinces into quick action by resorting to "blunt force regulation" [75] and abruptly limiting power usages, especially those in the top warning category.[76] This is most evident in the two provinces with the biggest industrial outputs, i.e., Guangdong and Jiangsu, which are both listed in the top warning categories for both targets.

It might be argued, however, that there were less drastic actions available to local governments than simply cutting off the power supply. Though in a country where the lower-level governments are supposed to blindly follow central government orders, such drastic actions would send a strong signal up the command chain, giving the local governments some bargaining power when the central government is forced to take action in response to anger from downstream user industries including the many SOEs with deep links to the central government.

B. Power shortages and incomplete market reform

At the same time, it is also interesting to note that the above rationale might not apply to all provinces imposing restrictions on power usages. For example, none of the three provinces in the north-eastern region were in the top warning category (red). Instead, Jilin was in the green category for both targets. For Heilongjiang and Liaoning, their energy consumption and energy intensity reduction achievements were green and yellow respectively. This means that they did not really need to cut power usages to meet the mandatory targets. Rather, they seem to have real power shortage problems, as complicated by factors such as the reduction of wind, solar and hydro power and the national shortage of coal.[77]

So how could there be power shortages if the market mechanism was working? Aren't power shortages the best excuse for power plants to gear up their production and generate more power and thus more profits? The answer, it turns out, is that the market transformation is far from complete in China.

China's power prices have traditionally been set by the government due to the importance of energy in both economic development and social stability.[78] This is also reflected in China's WTO commitments, which explicitly list prices of both electricity and heating power as one of the goods and services which may be subject to price controls.[79]In 2004, in an effort to promote

---

[74] Ibid.
[75] Van der Kamp, D. (2023). Introduction: Clean Air at What Cost? In *Clean Air at What Cost?: The Rise of Blunt Force Regulation in China* (Cambridge Studies in Law and Society, pp. 1-27). Cambridge: Cambridge University Press. doi:10.1017/9781009152655.001.
[76] '江苏/山东等多地开始限电！近期各地区限电政策一览-北极星售电网' <https://news.bjx.com.cn/html/20210922/1177922.shtml> accessed 1 July 2023.
[77] Ziwen Jiang, 'The government officially disclosed the reasons why three provinces in Northeast China were forced power rationing', https://m.thepaper.cn/newsDetail_forward_14689139 (27 September 2021).
[78] See e.g., Opinions of the National Energy Administration on Strengthening Power Reliability Management, which notes that "Power supply is related to the overall economic development and social stability, and is a major issue related to people's livelihood". '国家能源局关于加强电力可靠性管理工作的意见 国能发安全规〔2023〕17号-国家能源局网站' <http://zfxxgk.nea.gov.cn/2023-02/14/c_1310699307.htm> accessed 1 July 2023.
[79] Protocol on the Accession of the People's Republic of China, WT/L/432 (23 November 2001), Annex 4.

market reform, the government established the coal and electricity price linkage mechanism.[80] Under the new system, power prices are supposed to be adjusted upward or downward depending on the coal prices in the preceding period (normally no less than 6 months). Since mid 2016, coal prices rose rapidly and stayed at high levels.[81] According to the formula in the coal and electricity price linkage mechanism, electricity prices were supposed to be adjusted upwards. However, in 2018,[82] to reduce the operating costs of manufacturing and business firms, the central government announced that the electricity prices would be reduced by 10%. A further 10% reduction was also announced in 2019.[83] This means that, the more electricity the power plants generated, the more losses they would incur. This is reflected in the financial reports of the State Grid, which incurred a loss of 17.8 billion Yuan in its power generation business in 2020, for the first time in its history.[84] This trend continued in 2021, with coal prices rising by as much as 300%,[85] and all state-owned coal power plants reportedly losing 101.7 billion Yuan in that year.[86] Thus, it is no surprise that power plants were not keen to generate more electricity. Instead, creating a gap in meeting the demand could be a way to force the central government to allow more price adjustment, and/or to seek subsidies from the government.

This strategy seemed to have worked. Right after the nation-wide power shortages, the NDRC issued the "Notice on further deepening market-oriented reform of on-grid electricity price for coal-fired power generation", which expanded the upper price fluctuations limit from 10% to 20%, while the transaction price of high energy-consuming enterprises was not even subject to the 20% upper limit.[87] In May 2022, the central government agreed to provide state-owned coal power plants with a subsidy package totalling 100 billion Yuan, along with 30 billion Yuan of additional capital injection,[88] as well as approval for them to issue 200 billion Yuan of special bonds for energy supply guarantee.[89]

V. COMPARISON WITH CHINA'S TRADE POLICY MAKING

[80] National Energy Administration, 'Guidance on establishing the mechanism of coal-electricity price linkage' (关于建立煤电价格联动机制的意见的通知), http://www.nea.gov.cn/2011-08/17/c_131054427.htm (17 August 2011).
[81] National Bureau of Statistic, 'Coal production increased in rehabilitation, and the industrial layout was optimized in adjustment', http://www.stats.gov.cn/tjsj/zxfb/201803/t20180319_1588745.html (19 March 2018).
[82] The Central People's Government of the People's Republic of China, '2018 Government Work Report' (2018 年政府工作报告), http://www.gov.cn/guowuyuan/2018zfgzbg.htm (05 March 2018).
[83] The Central People's Government of the People's Republic of China, '2019 Government Work Report' (2019 年政府工作报告), http://www.gov.cn/guowuyuan/2019zfgzbg.htm> (05 March 2019).
[84] Jinghua Xi, 'The State Grid Corporation of China lost 17.8 billion yuan for the first time in its main business last year, and its profit hit a seven-year low', https://www.jiemian.com/article/5961951.html (16 April 2021).
[85] Xiaoxing Liu, 'Whether the dual-control policy of energy consumption should be responsible for power rationing?', http://epaper.cenews.com.cn/html/2021-10/08/content_70284.htm (08 October 2021).
[86] The State Council, 'The State Council Information Office held a news conference on the economic operation of central enterprises in the first quarter of 2022', http://www.gov.cn/xinwen/2022-04/20/content_5686227.htm (20 April 2022).
[87] National Development and Reform Commission, 'Notice on deepening the marketization reform of the on-grid price generated by coal-fired power' (关于进一步深化燃煤发电上网电价市场化改革的通知), https://www.ndrc.gov.cn/xxgk/zcfb/tz/202110/t20211012_1299461.html> (11 October 2021).
[88] Xinhua, 'Standing Committee of the State Council: Another 50 billion yuan of renewable energy subsidies will be allocated to central power generation enterprises', https://www.yicai.com/news/101409372.html (11 May 2022).
[89] The Central People's Government of the People's Republic of China, '2023 New Year Message to Enterprises', http://www.gov.cn/xinwen/2023-01/22/content_5738440.htm (22 January 2023).

As we can see from the above discussions on China's climate policy implementation, contrary to what might be assumed, it has not been easy to implement the policy despite China being a unitary state with a top-down power structure. This is because China is far from a monolithic entity with only one voice and one course of action. Instead, while the central government may make a policy, it might not be able to force the other actors, such as local governments and state-owned firms, to implement such policy.

This provides an interesting contrast with the implementation of China's trade policy, where the problems are mainly at the level of central government rather than local government. Moreover, as trade benefits both the central government (by promoting economic growth) and local government (by creating more jobs), the incentives of both are more closely aligned with each other. This is reflected in China's WTO disputes, where most of the cases brought against China are about trade remedy measures (especially subsidies measures) and various import and export restrictions that are introduced and implemented by the central government.

On the other hand, the same problems may be observed even in the trade area when the interests of the local and central governments are not aligned with each other. The best example is the protection of intellectual property (IP) rights, where the central government has for a long time been unable to enforce the IP laws due to local protectionism that results from the lack of incentives from the local government as they are unwilling to crack down local IP-infringing firms that provide jobs and economic growth.[90] The problem was only solved after the local firms themselves became innovators, and started to pressure local governments to aggressively enforce China's own IP laws, which is also aligned with the goals of the central government to upgrade China's position in the value chain.[91]

Such misalignment of the interests of different levels of government also explains China's negotiation positions in trade agreements. So far, most of China's commitments in free trade agreements (FTAs) have been on traditional border measures such as tariffs. This is because these issues are mainly controlled by the central government and thus are easier to implement. Behind the border regulatory issues are rarely included, especially difficult ones such as environment and labor, where enforcement needs to be relegated to local governments. In FTAs which do include these issues, the environment or labor provisions are often couched in non-binding, best endeavor language. Even when China started to include stronger CPTPP-like language such as "[a] Party shall not fail to effectively enforce its environmental measures including laws and regulations, through a sustained or recurring course of action or inaction, in a manner affecting trade or investment between the Parties"[92] in its latest FTAs such as the ones with Korea and Singapore, these clauses are still excluded from the application of the dispute settlement mechanisms under the respective FTAs,[93] probably due to the concern that implementation would be a major headache for the central government. However, it is well

[90] Bryan Mercurio, 'The Protection and Enforcement of Intellectual Property in China since Accession to the WTO: Progress and Retreat' 2012 (1) *China Perspectives* 23, at 23.
[91] Ibid.
[92] Ministry of Commerce of the People's Republic of China, 'Free Trade Agreement between the Government of the People's Republic of China and the Government of the Republic of Korea', Article 16.5, http://fta.mofcom.gov.cn/topic/enkorea.shtml; Ministry of Commerce of the People's Republic of China, 'Free Trade Agreement between the Government of the People's Republic of China and the Government of the Republic of Singapore', Chapter 17, Article 4, http://fta.mofcom.gov.cn/topic/enkorea.shtml.
[93] See above n 89, China-Korea FTA, Article 16.9; China-Singapore FTA, Chapter 17, Article 7.

known that climate change could affect international trade through supply chain disruptions.[94] Given China's pending application to the CPTPP which includes environmental provisions with real "teeth", it might well be time for China to give more weight to environmental provisions in trade agreements.

The conundrum China faces in implementing its climate change policies also highlights the importance of implementing more market reforms, which is often fraught with difficulties. Paradoxically, compliance with China's trade commitments may sometimes further complicates the matter, as the "competition among purposes" between "different bodies of international law"[95] might lead to absurd results. Take, for example, China's export restrictions on rare earth, the subject matter of a high-profile WTO dispute in 2012.[96] Theoretically speaking, direct environmental protection measures would be more efficient than export restrictions in addressing environment problems. Yet, the lack of effective enforcement by the local governments left China with only one real option: export restrictions implemented by the central government, even though that is not the optimal policy action in theory. After the case was launched in March 2012, it was almost certain that China would lose the case based on the unfavorable precedent of the *China – Raw Materials* case.[97] As it was almost impossible to get the local government to step up the enforcement, a leading expert at the Ministry of Commerce's International Trade and Economic Cooperation Research Institute proposed to have more state control in the sector through further consolidation of rare earth firms by SOEs.[98] This is confirmed by subsequent developments, where all of the seven leading rare earth firms turned out to be SOEs.[99]

More specifically, on the relationship between climate change and trade, China has been consistently opposing the use of trade measures for climate purposes. For example, China criticises the EU's Carbon Border Adjustment Mechanism (CBAM) as being inconsistent with WTO rules and the principles and requirements of the UNFCCC and the Paris Agreement.[100]

---

[94] 'How Climate Change Is Disrupting the Global Supply Chain' (*Yale E360*) <https://e360.yale.edu/features/how-climate-change-is-disrupting-the-global-supply-chain> accessed 1 July 2023. 'How Does Climate Change Impact on International Trade?' (*Grantham Research Institute on climate change and the environment*) <https://www.lse.ac.uk/granthaminstitute/explainers/how-does-climate-change-impact-on-international-trade/> accessed 1 July 2023.

[95] See above n 4, J. E. Viñuales.

[96] Appellate Body Report, *China – Measures Related to the Exportation of Rare Earths, Tungsten, and Molybdenum*, WT/DS431/AB/R (adopted 29 August 2014).

[97] Appellate Body Report, *China – Measures Related to the Exportation of Various Raw Materials*, WT/DS394/AB/R (adopted 22 February 2012).

[98] Xinyu Mei, 'The Dispute of Rare Earth: Short-Term Response and Radical Measures', https://business.sohu.com/20120316/n337913670.shtml (16 March 2012).

[99] Shujuan Bi, 'Mergers and Acquisitions of China's Rare Earth Industry Accelerated', http://finance.sina.com.cn/roll/20120713/201512563878.shtml (13 July 2012). This concentration of the rare earths mining activities to a handful of SOEs came out of China's effort to restructure and consolidate the industry to address illegal mining, smuggling and other longstanding, internal challenges. It is debatable whether China also intended to dominate global supply chains of rare earths and other critical minerals since China itself is a world's top importer of critical minerals for domestic economic needs. As other major resource-rich and resource-seeking economies are developing strategies and tools to secure supplies of critical minerals, China's strategy and actions are not unique in this race for critical minerals. See Victor Crochet and Weihuan Zhou, 'Critical Insecurities? The European Union's Strategy for a Stable Supply of Minerals', Leuven Centre for Global Governance Studies Working Paper No. 237 (May 2023) 1-28, https://ghum.kuleuven.be/ggs/wp237-eu-critical-minerals.pdf.

[100] China News, 'China's response to the 'Carbon Tariff': A contravention of both WTO rules and the principles and requirements stipulated by the Paris Agreement', https://www.chinanews.com.cn/cj/2021/07-26/9528890.shtml (26 July 2021).

Similarly, China refused to join the Coalition of Trade Ministers on Climate when it was announced at the World Economic Forum in 2023.[101] Instead, the Chinese Minister of Commerce voiced indirect disapproval of the initiative by stressing that "climate change shall be addressed through trade and investment liberalization and facilitation, rather than through trade restrictions and subsidy competition."[102] Again, China's position partly reflects its concern that, due to the challenges it faces in effectively implementing climate policies domestically, making binding climate-oriented trade policies at the international level could severely undermine China's policy space.

VI. CONCLUSION

China's abrupt shift from its policy commitment to the reduction of coal use for its climate goals in 2021 provides a vivid reminder that, while climate issues are global, politics is always local. Politics is not a problem for effective implementation of climate policies in Western countries, where such policies were initially adopted in response to bottom-up demands from various local civil society groups concerned with the negative effects of climate change. However, for countries like China with a top-down decision-making process, the real challenge lies not in the formulation of climate policies but the implementation. Getting climate policies implemented at the local level can be difficult due to the misalignment of the incentives between the central and local governments, and the lack of well-functioning market mechanisms that would respond well to market signals.

However, the policy shift should not be seen as China retreating from its climate goals. Rather, it was a temporary deviation and short-term response to one of the worst power shortages in China, which is further complicated by the impacts of the COVID-19 pandemic on the Chinese economy and the Russia-Ukraine war on global energy prices and supply. Nevertheless, the challenges China faces in balancing climate actions and energy security may well continue to drive China's incremental approach to controlling coal use and will remain a key concern in China's pursuit of climate goals.[103]

In addition, this paper provides some broader insights on understanding the difficulties facing many developing countries. Their reluctance to take climate actions might not necessarily arise from a lack of willingness to undertake commitments at the international level. Rather, it is closely related to gaps in energy transition and governance at the domestic level, including effective tools to translate international commitments into implementation by local governments, and efficient markets to align the interests of different stakeholders in service of the common goal. Thus, a more productive approach to international cooperation on climate issues should involve a more sympathetic understanding of the constraints facing developing countries, and the supply of the necessary toolbox of best practices to help them address such governance deficits. This may also provide a way to help developing countries overcome short-term problems in the implementation of climate policies, which would in turn lead to a brighter future for all mankind.

---

[101] European Commission, 'Trade and Climate: EU and partner countries launch the 'Coalition of Trade Ministers on Climate'', https://ec.europa.eu/commission/presscorner/detail/en/IP_23_248 (19 January 2023).
[102] Ministry of Commerce of the People's Republic of China, 'Wang Shouwen, the negotiator and deputy minister of the Ministry of Commerce, led a delegation to attend the small ministerial meeting hosted by the WTO in Davos', http://www.mofcom.gov.cn/article/xwfb/xwbldhd/202301/20230103380415.shtml (20 January 2023).
[103] Wendong Wei et al., 'Toward carbon neutrality: Uncovering constraints on critical minerals in the Chinese power system', 2 (3) Fundamental Research 367 (2022).