

AMBITION INTO ACTION:
AN EXAMINATION OF CHINA'S CLIMATE GOVERNANCE

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Abstract

The Paris climate regime aims to control the increase of global average temperature to well below 2°C above pre-industrial levels while aspiring for 1.5°C by requiring all Parties to submit progressively ambitious pledges known as “nationally determined contributions” (NDCs). It depends on domestic implementation and the climate governance capacity of each Party to keep the Paris goals within reach. This article focuses on China, the world’s biggest greenhouse gas (GHG) emitter and the second largest economy. By reviewing its participation in the Paris regime and examining its NDCs in context, the article illuminates China’s unprecedented political will to participate and lead in the construction of the international climate regime, and critically assesses the policy-oriented domestic climate governance that is government-led primarily taking a top-down command-and-control approach. It argues that China is in urgent need to strengthen its regulatory and legislative infrastructure to facilitate fair and transparent operation of the carbon market and climate litigation. It is the meaningful participation by non-government sectors and all members of the society that will jointly deliver China’s NDCs and ensure a smooth and efficient low-carbon transition.

INTRODUCTION

Thirty years after the adoption of the United Nations Framework Convention on Climate Change (UNFCCC),¹ the global response actions have failed to stabilize the greenhouse gas (GHG) concentration in the atmosphere to prevent catastrophic interference with the climate system. Frustration with the limited success of the Kyoto Protocol² that imposed quantified economy-wide mitigation obligations on developed countries³ has resulted in systemic changes. The Paris Agreement⁴ requires all parties to mitigate regardless of their development status while allowing countries at different stages of development to mitigate at a different pace. It is essentially a regime built on pledges known as “nationally determined contributions” (NDCs). Parties decide their national mitigation targets to the best of their capabilities in accordance with the principle of equity and common but differentiated

¹ United Nations Framework Convention on Climate Change, May 9, 1992, S. Treaty Doc No. 102–38, 1771 U.N.T.S. 107.

² Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 10, 1997, 2303 U.N.T.S. 162 [hereinafter Kyoto Protocol].

³ Kyoto Protocol, *supra* note 2, Annex B.

⁴ Paris Agreement to the United Nations Framework Convention on Climate Change, Dec. 12, 2015, T.I.A.S. No. 16-1104 [hereinafter Paris Agreement].

responsibilities (CBDR) and respective capabilities.⁵ There is a high expectation that the new bottom-up approach will mobilize all Parties to take mitigation actions and jointly control “the increase in the global average temperature to well below 2°C above pre-industrial levels” and to pursue efforts to limit “the temperature increase to 1.5°C”.⁶ According to the Intergovernmental Panel on Climate Change (IPCC), going beyond 1.5°C would produce irreversible changes to the climate system and accelerate the melting of ice caps, with rising sea levels inundating small islands and coastal areas, and increasing frequency and intensity of extreme weather events devastating communities and wreaking havoc around the world.⁷

In response to the latest and best available science,⁸ the 26th conference of the parties (COP26) managed to keep alive the aspirations of the Paris Agreement.⁹ The Glasgow Climate Pact “resolves to pursue efforts to limit the temperature increase to 1.5°C”,¹⁰ and adopts the IPCC recommendation of a 45 percent cut of GHG emissions by 2030 over the 2010 level and net zero emissions by mid-century.¹¹ Though the new pledges are narrowing the gap to be filled by mitigation actions to prevent the climatic catastrophe,¹² the world is still far from the scale and pace of emission reductions required to achieve a 1.5°C target.¹³ The Paris regime suffers a high risk of defeat if ambitious NDCs turn out to be mere political slogans because it hinges upon climate actions taken by all Parties to translate pledges into performance. To prevent ambitions from falling into empty promises, COP27 had a strong focus on urgent implementation in addition to raising ambition. A mitigation work program was established in Sharm el-Sheikh to urgently scale up mitigation ambition and implementation.¹⁴

⁵ Paris Agreement, *supra* note 4, arts. 3, 4.2, 4.3.

⁶ Paris Agreement, *supra* note 4, art. 2.1.

⁷ IPCC, Global Warming of 1.5°C (Special Report), 2018, Ch.3; IPCC, Climate Change 2021: The Physical Science Basis, 2021.

⁸ *Id.*

⁹ The UK hosted the 26th Conference of the Parties (COP26) to the UNFCCC in Glasgow, which was postponed from 2020 to 2021 due to Covid-19.

¹⁰ Glasgow Climate Pact, 2021, art.4.16.

¹¹ Glasgow Climate Pact, 2021, art.4.17; IPCC, Global Warming of 1.5°C (Special Report), 2018, Ch.2.

¹² Climate Action Tracker, Warming Projections Global Update, Nov. 2021, https://newclimate.org/sites/default/files/2022-03/cat_2021-11-09_briefing_global-update_glasgow2030credibilitygap.pdf. It suggests that new commitments at COP26 can limit warming to 2.4°C upon full implementation of the 2030 pledges.

¹³ United Nations Climate Change, Nationally Determined Contributions Under the Paris Agreement, Synthesis report by the secretariat, 2022, <https://unfccc.int/documents/619180>. It analyzed the NDCs of 193 Parties including 24 updated or new NDCs submitted after COP26 until 23 September 2022 and concluded that the combined climate pledges of 193 Parties could put the world on track for around 2.5°C of warming by the end of the century.

¹⁴ United Nations Climate Change, Sharm el-Sheikh Mitigation Ambition and Implementation Work Programme, Nov. 2022, <https://unfccc.int/topics/mitigation/workstreams/mitigation-work-programme#Stock-takes-and-guidance-by-the-CMA->.

In contrast to overwhelming attention on climate pledges and abundant studies comparing NDCs and projecting global temperature rise based on the submitted NDCs,¹⁵ there is a lack of in-depth investigation focusing on whether and how each Party will deliver by scrutinizing domestic climate governance. Before the first global stocktake in 2023,¹⁶ a focused study of domestic mitigation actions not only provides preliminary evidence of whether a Party is on track to deliver its pledges but also identifies gaps in domestic climate governance. Long-term net zero pledges must be supported by near-term mitigation targets and concrete action plans, clear mitigation timetables and roadmaps, and uninterrupted domestic implementation that hinges upon strong political will and sound governance capacity.

As the world's biggest GHG emitter, the second largest economy, and the biggest developing country with a 1.4 billion population, China played a critical and indispensable role as co-leader with the US in the successful negotiation and adoption of the Paris Agreement and undertook the responsibility to support and secure the Paris regime upon the US withdrawal under the Trump administration. This article examines China's climate governance and the challenges in delivering climate pledges. Part I explains the new bottom-up approach of the Paris Agreement and analyzes China's NDCs in its socio-economic context. Part II explores the long journey of China's participation in the UN climate regime and illuminates its unprecedented political will to contribute to and lead in global climate governance. Part III examines domestic climate governance in China which is dominated by the top-down command-and-control approach. Part IV focuses on the crucial roles of the non-government sectors in building good climate governance and identifies gaps in the regulatory and legislative infrastructure that potentially inhibit better engagement with market players and civil society through carbon emissions trading and climate litigation.

I. THE PARIS CLIMATE REGIME AND CHINA'S NDCS

The new bottom-up approach of the Paris Agreement offers hope of fixing the international climate regime that had failed under the Kyoto Protocol but does not guarantee success. A Party may still withdraw and disregard its NDC.¹⁷ The Kyoto regime did not fail for its top-down approach but for the non-performance and non-ratification by the US, the world's largest economy and biggest GHG emitter at the time. Former UNFCCC leaders admitted that multilateral processes can only deliver commitments and do not warrant

¹⁵ *Id.*; Climate Watch, <https://www.climatewatchdata.org/>.

¹⁶ Paris Agreement, *supra* note 4, art.14.2.

¹⁷ *United States Announces Plans to Withdraw from Paris Agreement on Climate Change*, 111 AM. J. INT'L L. 1036 (2017); *United States Gives Notice of Withdrawal from Paris Agreement on Climate Change*, 114 AM. J. INT'L L. 132 (2020).

implementation.¹⁸ NDCs, no matter how ambitious, will not accomplish the Paris goals if they are unachievable or never meant to be achieved. The Paris regime requires all Parties including developing countries previously exempted under the Kyoto Protocol to take mitigation actions to the best of their capabilities. It is a huge challenge for all developing countries to be legally obliged to submit successively ambitious NDCs while struggling to eradicate poverty through economic development through industrialization.

A. The Paris Regime Built on State Pledges

To keep global warming “well below 2°C above pre-industrial levels” by the end of the century to avoid catastrophic and irreversible effects of climate change,¹⁹ the Paris Agreement requires all Parties “to undertake and communicate ambitious efforts” in the form of progressive NDCs.²⁰ They must communicate their mitigation targets every five years,²¹ and each new NDC should demonstrate progress over the previous one and reflect the “highest possible ambition” a State can achieve.²² As technologies improve and circumstances change, greater ambitions in mitigation become achievable and shall be reflected in the NDCs.

The legally binding nature and global application to both developed and developing countries offer new hope for effective mitigation actions.²³ The Paris Agreement not only contains aspirational goals but also imposes “binding obligations of conduct in relation to mitigation” under “a rigorous system of oversight” subject to “a nuanced form of differentiation between developed and developing countries.”²⁴ All parties have “binding obligations of conduct to prepare, communicate and maintain contributions, as well as pursue domestic measures” without “an obligation of result”, though there is “a good faith expectation of results”.²⁵ As to the contents of the NDCs, Parties decide for themselves what reflects “highest possible ambition” considering national circumstances, capacities, and constraints. It is a more flexible and nuanced approach to the long-established CBDR principle, “a subtler and evolutionary differentiation between categories of states”²⁶ or simply “self-

¹⁸ Richard Kinley et al., *Beyond Good Intentions, to Urgent Action: Former UNFCCC Leaders Take Stock of Thirty Years of International Climate Change Negotiations*, 21 *Climate Pol’y* 593 (2021).

¹⁹ Paris Agreement, *supra* note 4, art. 2.1.

²⁰ Paris Agreement, *supra* note 4, art. 3.

²¹ Paris Agreement, *supra* note 4, art. 4.9.

²² Paris Agreement, *supra* note 4, art. 4.3.

²³ Daniel Bodansky, *The Paris Climate Change Agreement: A New Hope?*, 110 *AM. J. INT’L L.* 288 (2016).

²⁴ Lavanya Rajamani, *Ambition and Differentiation in the 2015 Paris Agreement: Interpretative Possibilities and Underlying Politics*, 65 *INT’L & COMPAR. L. Q.* 493, 494 (2016).

²⁵ *Id.* at 498 (quoting Lavanya Rajamani, *The 2015 Paris Agreement: Interplay Between Hard, Soft and Non-Obligations*, 28 *J. ENV’T L.* 337 (2016)).

²⁶ Sandrine Maljean-Dubois, *The Paris Agreement: A New Step in the Gradual Evolution of Differential Treatment in the Climate Regime?*, 25 *REV. EUR. COMPAR. & INT’L ENV’T L.* 151 (2016).

differentiation”.²⁷ Each NDC is unique. Some contain quantitative mitigation targets using different baseline years while others set qualitative objectives with different timetables for achieving the long-term net-zero goals.

The Glasgow Climate Pact reaffirmed “the long-term global goal to hold the increase in the global average temperature to well below 2°C above pre-industrial levels...”²⁸ and resolved “to pursue efforts to limit the temperature increase to 1.5°C.”²⁹ It not only requires “rapid, deep and, sustained reductions in global greenhouse gas emissions, including reducing global carbon dioxide emissions by 45 percent by 2030 relative to the 2010 level and to net zero around mid-century, as well as deep reductions in other greenhouse gases”³⁰ but also urges “further actions to reduce by 2030 non-carbon dioxide greenhouse gas emissions, including methane.”³¹ Party’s commitments in the NDCs and pledges on phasing down coal, ending deforestation, slashing methane emissions, and phasing out new gasoline vehicles will make a difference if these long-term pledges are translated into near-term targets and concrete actions.

B. China’s INDC (2015) and Updated First NDC (2021)

China has a unique role to play and its timely delivery of progressively ambitious NDCs is critical to the Paris regime. It pledged to peak carbon emissions by around 2030 in its intended NDC (INDC), setting a milestone for the transition to a low-carbon economy. Other targets in the INDC aim to reduce carbon intensity, increase non-fossil fuels, and enhance forest carbon sinks.³² Neither the US withdrawal in 2017 nor the global pandemic of COVID-19 had wavered China’s climate commitments. Its updated first NDC not only makes important revisions to the 2030 targets but also includes the new pledge of net-zero emissions by 2060.³³ Steady progress is found in Table 1 below:

²⁷ Lavanya Rajamani, *supra* note 24, 509–10; Lavanya Rajamani & Daniel Bodansky, *The Paris Rulebook: Balancing International Prescriptiveness with National Discretion*, 68 INT’L & COMPAR. L. Q. 1023 (2019); Christina Voigt & Felipe Ferreira, *Differentiation in the Paris Agreement*, 6 CLIMATE L. 58 (2016).

²⁸ Glasgow Climate Pact, *supra* note 10, art. 4.15.

²⁹ Glasgow Climate Pact, *supra* note 10, art. 4.16.

³⁰ Glasgow Climate Pact, *supra* note 10, art. 4.17.

³¹ Glasgow Climate Pact, *supra* note 10, art. 4.19.

³² *Enhanced Actions on Climate Change: China’s Nationally Determined Contribution*, PEOPLE’S DAILY ONLINE (July 01, 2015), <http://en.people.cn/n/2015/0701/c90000-8913723.html>.

³³ *China’s Achievements, New Goals and New Measures for Nationally Determined Contributions (2021)*, UNITED NATIONS CLIMATE CHANGE, <https://unfccc.int/sites/default/files/NDC/2022-06/China%E2%80%99s%20Achievements%2C%20New%20Goals%20and%20New%20Measures%20for%20Nationally%20Determined%20Contributions.pdf>.

TABLE 1. CHINA'S INDC (2015) AND UPDATED FIRST NDC (2021)

	INDC (2015)	Updated First NDC (2021)
Carbon neutrality (net-zero)	Nil	By 2060
Carbon peak	Around 2030	By 2030
Carbon intensity reduction by 2030	60-65% (against 2005 levels)	Over 65% (against 2005 levels)
Non-fossil share in the primary energy mix in 2030	Around 20%	Around 25%
Non-fossil fuels generation capacity in 2030	Nil	Total installed wind and solar power capacity over 1,200 GW
Forest stock volume increase by 2030	around 4.5 billion m ³ (compared to 2005)	6 billion m ³ (compared to 2005)

The most significant progress and ambition is the net-zero emissions by 2060, a strong commitment to decarbonize China's economy within 30 years of reaching the carbon peak. This should reasonably eliminate the concern that China may deliberately increase its fossil fuel production and consumption until 2030 to peak and plateau carbon emissions at a high level. The mid-century carbon neutrality target dictates near and medium-term mitigation policies and plans, requiring immediate actions to build the infrastructure and drive technological innovation. Another important new commitment is the pledge to control key non-CO₂ GHG emissions including methane, HFC, nitrogen oxide, and sulfur hexafluoride as well as to improve the relevant monitoring, reporting, and verification (MRV) mechanisms.³⁴ Although China did not sign the Global Methane Pledge,³⁵ it promises to produce a comprehensive and ambitious National Action Plan on Methane Control to achieve a significant reduction of methane emissions in the 2020s.³⁶

C. Good Faith Expectation of Delivery by China

Although the Paris Agreement is legally binding to the extent of imposing an obligation of conduct, there is "a good faith expectation of results".³⁷ A Party shall "prepare, communicate and maintain" the NDC that it "intends to achieve" and "pursue domestic mitigation measures, with the aim of achieving the objectives".³⁸ Each NDC should "reflect the highest possible ambition one

³⁴ *Id.*, Part III, Sec. 1, Para. 13.

³⁵ The Global Methane Pledge was launched by the US, the EU and Partners at COP26. Over 100 countries joined the Pledge to achieve at least 30 percent cut in methane emissions by 2030 from the 2020 levels.

³⁶ China-US Joint Glasgow Declaration on Enhancing Climate Actions in the 2020s (Nov. 10, 2021), art.8, <https://www.state.gov/u-s-china-joint-glasgow-declaration-on-enhancing-climate-action-in-the-2020s/>.

³⁷ Lavanya Rajamani & Jutta Brunnee, *The Legality of Downgrading Nationally Determined Contributions under the Paris Agreement: Lessons from the US Disengagement*, 29 J. ENVIRON. LAW 537, 541-42 (2017); Rajamani, *supra* note 24, at 497-98.

³⁸ Paris Agreement, *supra* note 4, art. 4.2.

can achieve”.³⁹ States of different financial, technological, and governance capabilities at different stages of socio-economic development are expected to set different mitigation targets that are both ambitious and achievable. It is the sincere and good-faith delivery of the NDCs that will keep the ambitious and aspirational goals of the Paris Agreement within reach.

China has a record of refraining from making international pledges it cannot deliver and insisting on taking mitigation actions under the CBDR principle.⁴⁰ It resisted the intense pressure at the Copenhagen Conference to commit to a quantified emissions reduction. Instead, it pledged a 40-45 percent cut in carbon intensity by 2020 from the 2005 level and delivered ahead of schedule.⁴¹ In other words, China would only make the pledges it believes it can deliver and will strive to deliver as promised. The mitigation actions taken in the 2010s significantly restricted the speed and scale of emissions increase and built the infrastructure and capacity for achieving carbon peak at a lower level than business as usual. Domestically, China has a tradition of setting targets in its Five-Year Plans for National Economic and Social Development (FYPs) and achieving them with few exceptions. Table 2 illustrates the environmental and climate targets set in the 12th and 13th FYPs which cover the critical ten years to deliver the pledges made in Copenhagen.

TABLE 2. ACHIEVEMENT OF KEY TARGETS SET BY THE FYPS

	12 th FYP Period (2011-15)		13 th FYP Period (2016-20)		14 th FYP Period (2021-25)
	Targets*	Actual*	Targets*	Actual**	Targets***
Energy intensity cut	16%	18.2%	15%	13.2%	13.5%
Carbon intensity cut	17%	20%	18%	18.8%	18%
Non-fossil fuels in the primary energy mix	11.4%	12%	15%	15.9%	Around 20%****
Forest coverage	21.66%	21.66%	23.04%	>23%	24.1%

* China's 13th FYP (2016)

** NDRC Report on Implementation of 13th FYP (2021)

*** China's 14th FYP and Long-Term Vision for 2035 (2021)

**** CCP Central Committee and State Council, Working Guidance on Carbon Peak and Carbon Neutrality (2021); State Council, Comprehensive Work Plan on Energy Conservation and Emission Abatement during the 14th FYP Period (2021)

³⁹ Paris Agreement, *supra* note 4, art. 4.3.

⁴⁰ Yuhong Zhao, *Climate Change Mitigation – Law and Policy Development in China*, 12 J. EUR. ENVIRON. PLAN. LAW 305 (2015); Nan Xu & Chun Zhang, *What the World Is Getting Wrong About China and Climate Change*, CHINA DIALOGUE (Feb. 18, 2013), <https://chinadialogue.net/en/climate/5711-what-the-world-is-getting-wrong-about-china-and-climate-change/>; Qin Tianbao, *China's Peaceful Development and Global Climate Change: A Legal Perspective*, 3 LAW ENV'T & DEV. J. 54 (2007).

⁴¹ China reported 48.1 percent cut of carbon intensity from the 2005 level and 15.3 percent of non-fossil fuels in the primary energy mix by the end of 2019. China's Achievements, New Goals and New Measures for Nationally Determined Contributions, *supra* note 33, Part II.

The carbon-intensive energy structure has been tackled by state mitigation measures that on the one hand control coal production and consumption and on the other hand boost generation and consumption of renewable energy. To achieve the Copenhagen pledge, China further restricted coal production in 2016 that virtually suspended the approval of all new coal mining projects for three years. Where needed, new coal mines are approved only to the extent of the phased-out coal production capacities.⁴² Existing coal mines using outdated technologies, contradicting state industrial policies such as small-scale coal mines, and coal mines operating in nature reserves, scenic zones, or drinking water source reserves were shut down.⁴³ From 2016 to 2019, China had phased out coal production capacity of 0.9 billion tonnes per year. As a result, the installed capacity of coal-fired thermal power dropped from 65.7 percent of the total installed capacity in 2012 to 52 percent in 2019.⁴⁴ Coal consumption in the primary energy mix dropped from 72.2 percent in 1980 to 57.7 percent by 2019.⁴⁵ Total coal consumption is under tight control during the current 14th FYP period (2021-25) and should drop by 10 percent in the Beijing-Tianjin-Hebei region and five percent in the Yangtze River Delta.⁴⁶ In contrast to the continuous drop of coal in the primary energy mix is the steady and substantial increase of non-fossil fuels. In 2016, targets were set for non-fossil fuels to reach 20 percent of the primary energy mix by 2030 and over 50 percent by 2050.⁴⁷ They were soon adjusted to 25 percent by 2030 and over 80 percent by 2060 in order to achieve the dual carbon targets.⁴⁸ The formal announcement on poverty eradication⁴⁹ is reassuring that China is more capable of delivering its climate pledges and will deliver in good faith.

⁴² Guowuyuan Guanyu Meitan Hangye Huajie Guosheng Channeng Shixian Tuokun Fazhan de Yijian (国务院关于煤炭行业化解过剩产能实现脱困发展的意见) [Opinions of the State Council on Resolving Excess Capacity in the Coal Industry to Achieve Development], THE STATE COUNCIL OF THE PEOPLE'S REPUBLIC OF CHINA (Feb. 5, 2016), Part II, Sec. 4

⁴³ *Id.*, Part II, Sec. 5.

⁴⁴ Xinshidai de Zhongguo Nengyuan Fazhan (新时代的中国能源发展) [Energy Development in China in the New Era], THE STATE COUNCIL INFORMATION OFFICE OF THE PEOPLE'S REPUBLIC OF CHINA (Dec. 2020), Part IV, Sec. 2.

⁴⁵ *Id.*, Part II, Sec. 2; China's Energy Conditions and Policies (中国的能源状况与政策), STATE COUNCIL INFORMATION OFFICE OF THE PEOPLE'S REPUBLIC OF CHINA (Dec. 2007), Part I.

⁴⁶ "Shisi Wu" Jieneng Jianpai Zonghe Gongzuo Fangan ("十四五"节能减排综合工作方案) [Comprehensive Work Plan on Energy Conservation and Emission Abatement during the 14th FYP Period], THE STATE COUNCIL OF THE PEOPLE'S REPUBLIC OF CHINA (2021), Part III, Sec. 8.

⁴⁷ Nengyuan Shengchan yu Xiaofei Geming Zhanlue (2016-2030) (能源生产与消费革命战略(2016-2030)) [Strategy on Revolution of Energy Production and Consumption (2016-2030)], NATIONAL DEVELOPMENT AND REFORM COMMISSION (NDRC) OF THE PEOPLE'S REPUBLIC OF CHINA (December 2016), Part II, Sec. 4.

⁴⁸ *Working Guidance for Carbon Peaking and Carbon Neutrality in Full and Faithful Implementation of the New Development Philosophy*, NATIONAL DEVELOPMENT AND REFORM COMMISSION (NDRC) OF THE PEOPLE'S REPUBLIC OF CHINA (Oct. 24, 2021), Part II. The "dual carbon targets" refers to China's pledge of achieving carbon peak by 2030 and carbon neutrality by 2060.

⁴⁹ *Poverty Alleviation: China's Experience and Contribution* (人类减贫的中国实践), STATE COUNCIL INFORMATION OFFICE OF THE PEOPLE'S REPUBLIC OF CHINA (2021).

II. UNPRECEDENTED POLITICAL WILL FOR CLIMATE ACTIONS

For two decades since China became a party to the UNFCCC (1992), it had viewed mitigation obligation as a serious burden and threat to its social-economic development. It strongly advocated developing countries' right to development and insisted that their mitigation action depended on the availability of financial and technical support. At the Rio Summit (1992), Premier Li Peng pointed out that "[e]conomic development is the material guarantee for the protection and improvement of the environment, and economic development and poverty eradication are the top priorities for developing countries."⁵⁰ This approach to climate and development continued until the Copenhagen Conference (2009) where Premier Wen Jiabao emphasized the national priority of development and poverty eradication.⁵¹ China had unequivocally rejected any suggestion of internationally binding abatement targets for developing countries and demanded deeper cuts of GHG emissions by developed countries.

In sharp contrast, China in the new era has demonstrated unprecedented political will for climate actions. Its commitment to a carbon peak was announced in 2014 and its positive contribution was critical to the success of the Paris Conference.⁵² China's active engagement and cooperation with the Obama administration had mobilized Parties for the adoption and entering into force of the Paris Agreement.⁵³ The Record was set on Earth Day in 2016 when 175 Parties (174 countries and the EU) signed at the UN Headquarters in New York.⁵⁴ Unlike his predecessors,⁵⁵ President Xi Jinping was directly involved in climate negotiations and jointly issued three China-US announcements with

⁵⁰ *Lipeng Zongli Zai Lianheguo Huanfa Dahui Shounao Huiyi Shangde Jianghua* (李鹏总理在联合国环发大会首脑会议上的讲话) [Speech by Premier Li Peng Delivered at the United Nations Summit Conference on Environment and Development], 15 GAZETTE OF THE STATE COUNCIL OF THE PEOPLE'S REPUBLIC OF CHINA 502, 503 (Jul. 15, 1992).

⁵¹ *Wen Jiabao Zai Qihou Bianhua Huiyi Lingdaoren Huiyi Shangde Jianghua* (温家宝在气候变化会议领导人会议上的讲话) [Wen Jiabao's speech delivered at the UN Climate Change Conference, Copenhagen], THE CENTRAL PEOPLE'S GOVERNMENT OF THE PEOPLE'S REPUBLIC OF CHINA (Dec. 18, 2009), https://www.gov.cn/dhd/2009-12/19/content_1491149.htm.

⁵² Bodansky, *supra* note 23, at 318.

⁵³ Yuhong Zhao, *The Chinese Approach to International Environmental Law*, 64 GERMAN Y.B. OF INT'L L. 179, 194-196 (2021); Alex L. Wang, *Climate Change Policy and Law in China*, in THE OXFORD HANDBOOK OF INT'L CLIMATE CHANGE L. 636 (Kevin R. Gray et al. eds., 2016); Tai Tsung-Han et al., *China's Diplomatic Strategy towards Climate Change Negotiations in the Post-Paris Agreement Era*, 18 CHINA INT J. 186, 191-193 (2020).

⁵⁴ According to UN Secretary-General Ban Ki-moon, this is by far the largest number of countries ever to sign an international agreement on a single day, UN NEWS, Apr. 22, 2016, <https://news.un.org/en/story/2016/04/527442-today-historic-day-says-ban-175-countries-sign-paris-climate-accord>.

⁵⁵ During the administrations of Jiang Zemin-Li Peng and Hu Jintao-Wen Jiabao, it was Premier Li Peng and Premier Wen Jiabao who attended and spoke at the Rio Summit (1992) and the Copenhagen Conference (2009).

President Obama,⁵⁶ delivering a speech at the opening ceremony of the Paris Conference.⁵⁷ His high-profile engagement has rendered China's unwavering support to the Paris regime even after the US withdrawal.⁵⁸

In his timely address to the World Economic Forum in Davos, President Xi emphasized that all Parties should implement the Paris Agreement instead of walking away from it as this is the responsibility towards future generations.⁵⁹ He further elaborated on the importance of international law and the Paris Agreement at the UN Geneva office and advocated good faith implementation. "It is thus incumbent on all States to uphold the authority of the international rule of law, exercise their rights in accordance with laws, and fulfill their obligations in good faith. [...] The Paris Agreement is a milestone in the history of climate governance. We must ensure that this endeavor is not derailed. All Parties should work together to implement the Paris Agreement. China will continue to take steps to tackle climate change and fully honor its obligations."⁶⁰ President Xi's focus on climate actions and the international rule of law not only restated China's position but also demonstrated a strong commitment to improving global climate governance, which was seen as China's emerging leadership in the international climate regime.⁶¹

In preparation for COP26, President Xi announced China's new ambitious targets of a carbon peak by 2030 and carbon neutrality by 2060,⁶² reassuring the world that when China makes promises, it will deliver.⁶³ The dual carbon pledges were made in the absence of the US taking similar actions, marking the beginning of China's climate leadership.⁶⁴ Xi's announcement in September 2021 that China would not construct new coal-fired power plants abroad in

⁵⁶ The three China-US joint announcements were issued strategically at critical times to mobilize the world's support of the post-2020 climate regime. They are China-US Joint Announcement on Climate Change (2014), China-US Joint Presidential Statement on Climate Change (2015), and China-US Joint Presidential Statement on Climate Change (2016).

⁵⁷ Xi Jinping, Work Together to Build a Win-Win, Equitable and Balanced Governance Mechanism on Climate Change, addressed before the Opening Ceremony of the Paris Climate Conference, (Nov. 30, 2015), https://unfccc.int/sites/default/files/cop21cmp11_leaders_event_china.pdf.

⁵⁸ Official Communication from the US on its Intention to Withdraw from the Paris Agreement (Aug. 7, 2017).

⁵⁹ Xi Jinping, Jointly Shoulder Responsibility of Our Times, Promote Global Growth, addressed before the Opening Session of the World Economic Forum Annual Meeting in Davos (Jan. 17, 2017), http://www.xinhuanet.com/english/2017-01/18/c_135991184.htm.

⁶⁰ Xi Jinping, Working Together to Build a Community of Shared Future for Mankind, addressed before the UN Office in Geneva (Jan. 18, 2017), http://www.xinhuanet.com/english/2017-01/19/c_135994707.htm.

⁶¹ Barbara Finamore, *Trump's Paris Withdrawal Cedes Global Leadership to China*, NRDC, <https://www.nrdc.org/experts/trumps-paris-withdrawal-cedes-global-leadership-china> (June 2, 2017).

⁶² Xi Jinping, *Statement made at the General Debate of the 75th Session of the UN General Assembly* (Sept. 22, 2020), https://www.fmprc.gov.cn/eng/wjdt_665385/zyjh_665385/zyjh_665391/202009/t20200922_678904.html.

⁶³ Xi Jinping, Building on Past Achievements and Launching a New Journey for Global Climate Actions, addressed before the Climate Ambition Summit (Dec. 12, 2020), https://www.fmprc.gov.cn/eng/wjdt_665385/zyjh_665391/202012/t20201213_678958.html.

⁶⁴ Kevin Rudd, *The New Geopolitics of China's Climate Leadership*, CHINA DIALOGUE, <https://asiasociety.org/policy-institute/new-geopolitics-chinas-climate-leadership>.

support of low-carbon energy transition in other developing countries⁶⁵ had immense international impact given China's substantial investment in the energy and infrastructure projects in the Belt and Road countries. This new pledge will significantly speed up decarbonizing power generation on a global scale.

China's dual carbon pledges have been translated into domestic policies and plans on top of the working agenda of the Chinese Communist Party (CCP) Central Committee and the State Council, something the world has never seen before. The CCP Central Committee is vested with the supreme power to set national targets and strategies that guide the State Council in making plans with more specific goals, timetables, and roadmaps, and allocating tasks to provincial governments for implementation. The 14th FYP (2021-2025) and Long-Term Goals for 2035 were compiled in accordance with the Suggestions adopted by the 19th CCP Central Committee,⁶⁶ incorporating the updated NDC (2021) as domestically binding targets.⁶⁷ While CCP's engagement in climate actions is seen by some as campaign-style governance in times of great challenges,⁶⁸ this is likely to be the new normal in the Xi era, generating profound impacts on domestic climate actions.

III. DOMESTIC CLIMATE GOVERNANCE LED BY THE GOVERNMENT

As a Non-Annex I Party under the Kyoto regime,⁶⁹ China was only required to formulate, implement, and regularly update national programs on climate mitigation.⁷⁰ There was, however, increasing international expectation as China became the world's biggest GHG emitter⁷¹ and the second-largest economy.⁷² In response, government-led climate governance has taken shape

⁶⁵ Xi Jinping, *Bolstering Confidence and Jointly Overcoming Difficulties to Build a Better World*, addressed before the General Debate of the 76th Session of the United Nations General Assembly (Sept. 21, 2021), <https://interpret.csis.org/translations/bolstering-confidence-and-jointly-overcoming-difficulties-to-build-a-better-world/>.

⁶⁶ CCPC, *Suggestions on the Making of the 14th Five Year Plan and Long-Term Goals for 2035* (2020).

⁶⁷ 14th Five Year Plan (2021-2025) and Long-Term Goals for 2035 (2021), Chapter 38, § 4.

⁶⁸ Fei Teng & Pu Wang, *The Evolution of Climate Governance in China: Drivers, Features, and Effectiveness*, 30 ENV'T POLIT. 141, 153 (2021).

⁶⁹ China signed the UNFCCC on 11 June 1992 and ratified it on 5 January 1993. It signed the Kyoto Protocol on 29 May 1998 and ratified it on 30 August 2002.

⁷⁰ Kyoto Protocol, art. 10, 1997.

⁷¹ John Vidal & David Adam, *China Overtakes US as World's Biggest CO₂ Emitter*, THE GUARDIAN, June 19, 2007, <https://www.theguardian.com/environment/2007/jun/19/china.usnews>.

⁷² David Barboza, *China Passes Japan as Second-Largest Economy*, N. Y. TIMES, August 16, 2010, <https://www.nytimes.com/2010/08/16/business/global/16yuan.html>; David Barboza, *China overtakes Japan as world's second-largest economy*, THE GUARDIAN, August 16, 2010, <https://www.nytimes.com/2010/08/16/business/global/16yuan.html>.

steadily,⁷³ with non-state actors playing a secondary role so far.⁷⁴ This may change as China ratchets up its ambitions under the Paris Agreement.

A. *Institution Building*

In preparation for the Rio Summit, China set up an ad hoc inter-departmental Climate Change Coordination Group (CCCG) under the Environmental Protection Commission of the State Council in 1990 to take charge of climate negotiations and formulation of domestic strategies.⁷⁵ In the first decade after signing and ratifying the UNFCCC and the Kyoto Protocol,⁷⁶ there was no specialized agency in charge of climate change other than the CCCG. China had more pressing issues to deal with as Premier Li Peng elaborated in his speech in Rio that “[e]conomic development is essential for human survival and progress, as well as the material guarantee for protecting and improving the environment. For many developing countries, economic development and poverty eradication are top priorities at this moment.”⁷⁷

It was not until 2007 when China became the world’s biggest carbon emitter and had to place climate change on its political agenda, the State Council set up a high-level National Leading Group on Climate Change Response, Energy Conservation and Emissions Reduction (the Leading Group). Chaired first by Premier Wen Jiabao,⁷⁸ followed by Premier Li Keqiang since 2013,⁷⁹ the Leading Group was more powerful than the CCCG in terms of making climate policies and assigning mitigation tasks, formulating strategies for international cooperation and negotiation, and coordinating among different ministries and sectors in mitigation and adaptation actions.⁸⁰ It received administrative and secretarial support from a working office in the NDRC,⁸¹ which became the Climate Change Division (CCD) in 2008.⁸² For a decade since then, the CCD

⁷³ Zhao, *supra* note 40; Teng & Wang, *supra* note 68; Miranda Schreurs, *Multi-level Climate Governance in China*, 27 ENV'T POL'Y & GOVERNANCE 163 (2017); Giuseppe Poderati & Ou Shutian, *Tackling Climate Change in China: A Hybrid Approach*, 5 CHINESE J. OF ENV'T L. 141 (2021).

⁷⁴ Pu Wang, Lei Liu & Tong Wu, *A Review of China's Climate Governance: State, Market and Civil Society*, 18 CLIMATE POL'Y 664 (2018).

⁷⁵ Environmental Protection Commission of the State Council, *China's Principles and Position on Global Environmental Issues*, Oct. 26, 1990, Part III; *State Council's Report on the Work in Response to Climate Change*, presented to the 11th NPC Standing Committee at its 10th meeting on 24 August 2009.

⁷⁶ 14th Five Year Plan (2021-2025) and Long-Term Goals for 2035 (2021), Ch. 38, Sec. 4.

⁷⁷ Li Peng, *Speech at the UN Conference on Environment and Development on 12 June 1992*, STATE COUNCIL GAZETTE 502 (1992).

⁷⁸ State Council, *Notice on Setting Up the National Leading Group on Climate Change Response, Energy Conservation and Emissions Reduction*, Jun. 12, 2007.

⁷⁹ State Council, *Notice on Adjustment of Members of the National Leading Group on Climate Change Response, Energy Conservation and Emissions Reduction*, Jul. 3, 2013.

⁸⁰ State Council, *supra* note 78.

⁸¹ *Id.*

⁸² State Council, *China's Policies and Actions in Response to Climate Change*, Part VIII (White Paper) (2008).

of the NDRC had been in charge of climate change policymaking and the performance of state duties under the UNFCCC.⁸³

The state institutional reform of 2018 consolidated climate change responsibility with environmental protection, moving CCD from NDRC to the Ministry of Ecology and Environment (MEE).⁸⁴ Other ministries of critical importance to climate change include the National Energy Administration (energy development and renewable energies), Ministry of Industry and Information Technology (energy consumption and conservation by industry), Ministry of Housing, Urban and Rural Development (emissions from buildings and waste infrastructure), Ministry of Transport (emissions from transport), Ministry of Natural Resources (land use and planning), and Ministry of Agriculture (non-carbon GHG emissions such as methane).⁸⁵

The NDRC has been assigned new responsibilities.⁸⁶ A new Leading Group on the dual carbon work was set up by the CCP Central Committee's Finance and Economics Commission in May 2021. Supported by a working office in the NDRC, the Dual Carbon Leading Group will exercise high-level CCP leadership over policymaking, coordinate among different ministries, sectors, and regions in setting timetables and roadmaps to achieve the dual carbon targets in stages, supervise the local and sectoral implementation of tasks, monitor performance and progress made, and address problems and difficulties in implementation.⁸⁷

Provincial governments are similarly structured as the State Council. That is, provincial bureaus and commissions are set up as local counterparts of the state ministries and commissions with corresponding responsibilities to implement policies and plans promulgated by the Central authority. For instance, the provincial ecology and environmental bureau (EEB) and provincial development and reform commission (DRC) are local counterparts of the MEE and NDRC and operate under the direct supervision of both provincial governments and the MEE and NDRC. Provincial governments and state ministries are directly supervised by the State Council. The CCP leadership extends from central to local levels through the institution of committees. Both CCP committees and governments are jointly responsible for the achievement of dual carbon targets and are subject to supervision by the central authority which evaluates the performance of provincial governments

⁸³ NRDC, *China's Policies and Actions in Response to Climate Change*, ANNUAL REPORT, 40–41 (2009).

⁸⁴ It formulates climate change strategies, policies and programs, participates in international climate negotiations, and ensures state's performance under the UNFCCC, <https://www.mee.gov.cn/zjhb/bjg/qhs/>.

⁸⁵ Teng & Wang, *supra* note 68; International Energy Agency, *China's Emissions Trading Scheme*, 28–31 (2020).

⁸⁶ Zhonggong Zhongyang, Guowuyuan Guanyu Wanzheng Zhunque Quanmian Guanche Xinfazhan Linian Zuohao Tandafeng Zhonghe Gongzuo de Yijian (中共中央、国务院关于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) [Working Guidance for Carbon Dioxide Peaking and Carbon Neutrality in Full and Faithful Implementation of the New Development Philosophy] (promulgated by CCPC & State Council, Sept. 22, 2021, effective Sept. 22, 2021) (Chinalawinfo) (hereinafter Working Guidance).

⁸⁷ *Id.*, Sec. XIII, Para. 35.

that have direct impacts on the assessment and appraisal of individuals in charge.

B. Policy Making and Implementation

China promulgated its first National Programme on Climate Change in 2007 to set targets, basic principles, and key policy measures with a focus on energy conservation, improvement of energy structure, ecological protection, and climate response capacity building.⁸⁸ Since China made its domestically binding pledges at the Copenhagen Conference (2009),⁸⁹ climate actions have been on the agenda of its FYPs. The 12th FYP (2011-15) for the first time devotes one whole chapter to climate change to highlight its importance in the State's political agenda.⁹⁰ Adopting a landmark policy change from the pursuit of high-speed growth to low-carbon sustainable development in the transition to a society that is environmental-friendly and conservation-oriented,⁹¹ the 12th FYP sets binding targets of a 17 percent cut of carbon intensity and a 16 percent cut of energy intensity by 2015 compared to the 2010 levels and increase of non-fossil fuels to 11.4 percent of the primary energy mix by 2015.⁹² Though the total carbon emissions continued to increase, the speed of the increase had been controlled and slowed down.⁹³ The 13th FYP (2016-20) further sets binding targets of a 18 percent cut of carbon intensity and a 15 percent cut of energy intensity over the 2015 levels and an increase of non-fossil fuels to 15 percent of the primary energy mix by 2020.⁹⁴ To achieve these targets and deliver the climate pledges by 2020, a specialized National Plan on Climate

⁸⁸ Zhongguo Yingdui Qihou Bianhua Guojia Fangan (中国应对气候变化国家方案) [China's National Climate Change Programme] (promulgated by St. Council, Jun. 3, 2007, effective Jun. 3, 2007) (Chinalawinfo) (Part III. Section 3 sets targets for 2010: 20 percent cut of energy intensity over the 2005 level, increase of renewable energy in the primary energy mix to around 10 percent from 7.5 percent in 2005, and increase of forest coverage to 20 percent from 18.2 percent in 2005).

⁸⁹ Wen Jiabao (温家宝), *Address at 2009 United Nations Climate Change Conference: Ningju Gongshi Jiaqiang Hezuo Tuijin Yingdui Qihou Bianhua Lishi Jincheng* (凝聚共识加强合作推进应对气候变化历史进程) [*Building on Consensus, Strengthening Cooperation, Pushing Forward Climate Change Negotiation Process*] (Dec. 18, 2009) (China pledged 40–45 percent cut in carbon intensity by 2020 compared to the 2005 level and increase of non-fossil fuels to 15 percent of the primary energy mix).

⁹⁰ Zhonghua Renmin Gongheguo Guomin Jingji he Shehui Fazhan Dishierge Wunian Guihua Gangyao (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) [12th Five-Year Plan (2011–2015) for National Economic and Social Development] (promulgated by the Nat'l People's Cong, Mar. 14, 2011, effective Mar. 14, 2011) ch. 21 (Chinalawinfo) (the Plan was presented to the 11th NPC at its fourth meeting and approved on 14 March 2011).

⁹¹ *Id.*, ch. 2 Guiding Principles.

⁹² *Id.*, ch. 3 Major Targets (these targets are binding on the Central and local governments).

⁹³ The Climate Group, *Delivering Low Carbon Growth—A Guide to China's 12th Five Year Plan 3* (2011) (it projects that China is bending its emissions curve downwards).

⁹⁴ Zhonghua Renmin Gongheguo Guomin Jingji he Shehui Fazhan Dishierge Wunian Guihua Gangyao (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) [13th Five-Year Plan (2016–2020) for National Economic and Social Development] (promulgated by the Nat'l People's Cong, Mar. 16, 2016, effective Mar. 16, 2016) ch. 3 (Chinalawinfo).

Change (2014-2020)⁹⁵ was promulgated to stipulate key strategies to control GHG emissions by adjusting economic structure, optimizing the energy mix, improving energy efficiency, and expanding the carbon sinks.⁹⁶ It sets specific targets and tasks for emissions control by the industry, construction, transport, agriculture, commerce, and waste disposal.⁹⁷

These plans are implemented top-down by a command-and-control approach. That is, the Central Government sets national targets and assigns different abatement targets to provincial governments based on the unique circumstances of each province including the development stage, resources endowment, strategic position, and the ecological environment.⁹⁸ Provincial governments must make implementation plans and take mitigation measures to cut energy and carbon intensity. The table below illustrates target allocation in the 13th FYP period.⁹⁹ Deeper cuts are expected from the most economically advanced and industrialized cities and provinces including Beijing, Shanghai, and Guangdong while least developed regions such as Tibet and Xinjiang were assigned less ambitious targets.

TABLE 3. PROVINCIAL CARBON INTENSITY ABATEMENT TARGETS DURING THE 13TH FYP PERIOD

Provinces, Autonomous Regions, and Municipalities Directly under Central People's Government	Carbon Intensity Abatement Targets (%)
Beijing, Tianjin, Hebei, Shanghai, Jiangsu, Zhejiang, Shandong, Guangdong	20.5
Fujian, Jiangxi, Henan, Hubei, Chongqing, Sichuan	19.5
Shanxi, Liaoning, Jilin, Anhui, Hunan, Guizhou, Yunnan, Shaanxi	18
Inner Mongolia, Heilongjiang, Guangxi, Gansu, Ningxia	17
Hainan, Tibet, Qinghai, Xinjiang	12

By March 2021, China's dual carbon pledges had been incorporated in the 14th FYP (2021-25) and Targets for 2035 (14th FYP), which not only sets targets of a 18 percent cut of carbon intensity and a 13.5 percent cut of energy intensity

⁹⁵ The State Council approved NDRC's National Plan on Climate Change (2014-2020) on 17 September 2014.

⁹⁶ Guojia Yingdui Qihou Bianhua Guihua (2014-2020 Nian) (国家应对气候变化规划(2014-2020年)) [National Plan on Climate Change (2014-2020)] (promulgated by National Development & Reform Comm'n, Sept. 19, 2014, effective Sept. 19, 2014) Ch. II, Sec. 1.

⁹⁷ *Id.*, ch. III, Secs. 5-8.

⁹⁸ "Shierwu" Kongzhi Wenshi Qiti Paifang Gongzuo Fangan ("十二五"控制温室气体排放工作方案) [Work Plan on the Control of GHG Emissions in the 12th FYP Period] (promulgated by St. Council, Dec. 1, 2011, effective Dec. 1, 2011) (Chinalawinfo); "Shisanwu" Kongzhi Wenshi Qiti Paifang Gongzuo Fangan ("十三五"控制温室气体排放工作方案) [Work Plan on the Control of GHG Emissions in the 13th FYP Period] (promulgated by St. Council, Oct. 27, 2016, effective Oct. 27, 2016) (Chinalawinfo).

⁹⁹ "Shisanwu" Kongzhi Wenshi Qiti Paifang Gongzuo Fangan ("十三五"控制温室气体排放工作方案) [Work Plan on the Control of GHG Emissions in the 13th FYP Period] (promulgated by St. Council, Oct. 27, 2016, effective Oct. 27, 2016) Part. V, Sec. 1 (Chinalawinfo); *Supra* note 33, at Part. II, Sec. 1.

by 2025 over the 2020 levels,¹⁰⁰ but also mandates the making of action plans for carbon peak by 2030 and taking enhanced measures to achieve carbon neutrality before 2060.¹⁰¹ By September 2021, a more sophisticated “1+N” climate policy framework emerged to set the agenda for decarbonization. The “1” refers to the top-level Working Guidance for Carbon Peaking and Carbon Neutrality (Working Guidance),¹⁰² the master policy guide for the making of sector-specific decarbonization plans known as “N”. The Working Guidance (2021) sets short-, medium- and long-term targets for cutting carbon and energy intensity, increasing the share of non-fossil fuels, and expanding forest coverage and stocks by 2025, 2030, and 2060.¹⁰³ The most eye-catching target is the increase of non-fossil fuels to 80 percent in the primary energy mix by 2060, a huge leap forward from 25 percent in 2030 and 20 percent in 2025.

The State Council issued the first and leading policy document among “N” entitled Action Plan for Carbon Dioxide Peaking Before 2030 (Action Plan)¹⁰⁴ to focus on near-term mitigation actions. It reiterates the national targets for the increase of non-fossil fuels and abatement of carbon and energy intensity by 2030.¹⁰⁵ Ten key decarbonization actions are to be executed from 2021 to 2030: (i) transition to green low-carbon energy structure; (ii) energy conservation, carbon reduction, and efficiency improvement; (iii) carbon peak by industry; (iv) carbon peak by urban-rural construction; (v) carbon peak by transport; (vi) circular economy to abate carbon emissions; (vii) green low-carbon technology innovation; (viii) carbon sink enhancement; (ix) green low-carbon actions by all; and (x) carbon peak by regions in stages in an orderly manner.¹⁰⁶ A number of “N” documents have been released by state ministries in charge of different sectors to flesh out the roadmap to the carbon peak since then.

To ensure implementation by provincial governments at local levels, the central authority has clarified that the main bodies responsible for the dual carbon work are the CCP committees and governments at all levels. The central authority conducts supervision, monitoring, and inspections and links the findings of inspections to the performance assessment and political promotion. Provincial governments then promulgate implementation plans and local governments often take costly administrative measures to achieve the targets.

¹⁰⁰ Zhonghua Renmin Gongheguo Guomin Jingji he Shehui Fazhan Dishisige Wunian Guihua he 2035nian Yuanjing Mubiao Gangyao (中华人民共和国国民经济和社会发展第十四个五年规划和2035年远景目标纲要) [The Outline of the 14th Five-Year Plan for Economic and Social Development (2021–2025) and Long-Range Objectives through the Year 2035 of the People's Republic of China] (promulgated by the Nat'l People's Cong., Mar. 11, 2021, effective Mar. 11, 2021) Ch. 3, Sec. 2 (Chinalawinfo).

¹⁰¹ *Id.*, Ch. 38, Sec. 4.

¹⁰² CCPCC and State Council, *supra* note 86.

¹⁰³ *Id.*, Sec. II.

¹⁰⁴ 2030 Nianqian Tandafeng Xingdong Fangan (2030年前碳达峰行动方案) [Action Plan for Carbon Peaking Before 2030] (promulgated by State Council, Oct. 24, 2021, effective Oct. 24, 2021) (Chinalawinfo) [hereinafter *Action Plan*].

¹⁰⁵ *Id.*, Part II.

¹⁰⁶ *Id.*, Part III.

C. *Limits of the Command-and-Control Approach*

The climate governance driven by state policies implemented top-down by a command-and-control approach has its limits. Its success hinges upon strong support and unprecedented political will from the highest leadership and close supervision by the central authority to ensure local implementations. China has a track record of achieving domestically binding mitigation targets (Table 2 above) by drastic measures of shutting down inefficient coal mines, coal-fired power plants, and outdated energy-intensive industrial processes. Such measures often escalate towards the end of each FYP period when provincial governments take coercive measures to achieve the binding targets on energy intensity cuts, resulting in “black-outs” for some industries or “power-off” in many cities.¹⁰⁷

The ‘decarbonization frenzy’ of 2021 shortly before COP26 once again exposed the limitations of the command-and-control approach. As the central authority promulgated the decarbonization strategies and policies and made provincial governments and CCP committees responsible for implementation, 11 provinces including Guangdong and Zhejiang experienced power outages, forcing factories in these coastal manufacturing powerhouses to suspend operation. Liaoning and Jilin had restricted residential power use causing public outcry. The power shortages were, on the one hand, caused by the premature dismantling of existing energy infrastructure (thermal power plants), shutdown of coal mines to control coal production and consumption, and abate emissions before new options are available; on the other hand, due to reckless development of ‘two-high’ (high in energy use and in emissions) projects underway ahead of 2030, the year for carbon peak.¹⁰⁸ While the gap between energy generation and consumption directly related to the recent dual carbon pledges, the supply shortage was also the result of government commands to control coal production from 2016 to 2020, when a total of 5,500 coal mines had been closed down to remove a billion tonnes of annual coal output.¹⁰⁹

To guard against the risks of the “decarbonization frenzy” blamed for the power outages in a dozen provinces in the autumn of 2021, the Action Plan (2021) emphasizes the principle that carbon peak must be achieved in a steady, orderly, and step-by-step manner to ensure energy security and economic

¹⁰⁷ Jonathan Watts, *China resorts to blackouts in pursuit of energy efficiency*, The Guardian, Sep 19, 2010, <https://www.theguardian.com/world/2010/sep/19/china-blackouts-energy-efficiency>; Cissy Zhou & Wang Zixu, *China suffers worst power blackouts in a decade, on post-coronavirus export boom, coal supply shortage*, South China Morning Post, Dec.23, 2020, <https://www.scmp.com/economy/china-economy/article/3115119/china-suffers-worst-power-blackouts-decade-post-coronavirus>; Zhao Xuan, et al. Cover Story: Why the Lights Are Going Out in China, Caixin Global, Dec.28, 2020, <https://www.caixinglobal.com/2020-12-28/cover-story-why-the-lights-are-going-out-in-china-101643910.html>.

¹⁰⁸ Gao Baiyu, *Will recent power shortages slow China's progress to carbon neutrality?*, CHINA DIALOGUE, Nov. 13, 2021, <https://chinadialogue.net/en/energy/will-recent-power-shortages-slow-chinas-progress-to-carbon-neutrality/>.

¹⁰⁹ *Id.*

development in the transition to the low-carbon energy structure.¹¹⁰ But as long as the command-and-control remains the main, if not the only, approach to decarbonize, provincial and local governments will continue to resort to drastic measures under political pressure to achieve the binding abatement targets.

IV. THE NEED FOR MORE ACTIVE PARTICIPATION BY THE NON-GOVERNMENT SECTORS

It became evident that a smooth and efficient transition to a low-carbon economy cannot be achieved purely by the making and implementation of administrative plans and orders. Even if short-term targets may be achieved by taking coercive administrative measures, there are concerns over the long-term sustainability and effectiveness of the approach in the absence of public support.¹¹¹ Good climate governance should incentivize long-term transformation, which depends on the active participation of the non-government sectors. It is crucial for governments to build the legal infrastructure to facilitate the operation of the market and the judicial system that supports and motivates public participation. More specifically and as a matter of urgency, it is time to strengthen both the market and the civil society. The long-overdue regulation on the operation of the emissions trading system (ETS) should be promulgated to effectively shift some of the mitigation supervision burden from the government to the market. A functional ETS should be able to incentivize enterprises by price signals, drive technological innovation and eliminate those outdated high-emission operators in a more steady and predictable manner. In addition, civil society has the potential to supplement regulatory supervision and monitoring over key carbon emitters and others inhibiting mitigation by means of climate litigation subject to timely promulgation of climate legislation or revisions of existing energy and environmental laws.

A. *Market Mechanism as a Mitigation Tool*

The best-known market mechanism is the EU ETS launched in 2005 as a key instrument for the EU to abate GHG emissions in a cost-effective manner.¹¹² An ETS turns emissions quota into tradable commodities, creating economic incentives for capable carbon emitters to achieve deeper cuts by technological innovation and making profits by selling extra quota. A cap on total carbon emissions is set and adjusted by the authority in accordance with the national mitigation target. An ETS achieves overall emission reduction

¹¹⁰ See Action Plan, Part 1.

¹¹¹ Judith Shapiro & Yifei Li, *China's Coercive Environmentalism Revisited: Climate Governance, Zero Covid and the Belt and Road*, 53 INT'L. Q. FOR ASIAN STUD. 327, 327–36 (2022).

¹¹² EU EMISSIONS TRADING SYSTEM (EU ETS) CLIMATE ACTION, https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets_en#development-of-eu-ets-2005-2020 (last visited Jul 19, 2023). It covers around 10,000 installations in the power sector and manufacturing industry in all EU countries plus Iceland, Liechtenstein and Norway, as well as airlines operating between these countries.

most efficiently as covered emitters with high abatement costs choose to purchase quota from those who achieve deeper cuts with low abatement costs through investment in technological innovation and non-fossil fuels. China launched the first phase of its national ETS on 16 July 2021 to cover 2,162 power generation companies, accounting for 4.5 billion tonnes of carbon emissions,¹¹³ making it world's biggest carbon market among those in operation in around 45 countries.¹¹⁴ Other sectors including petrochemical, chemical, building materials, iron and steel, non-ferrous metals, paper, and domestic aviation will be included in the coming stages. The national ETS is based on a decade of trial and test of local pilot projects exploring different market designs in terms of covered entities, cap setting, allocation, trading, registration, and surrender of emission allowances.

Exploration of market mechanism was on the agenda of the 12th FYP (2011-15).¹¹⁵ Seven local pilot projects were launched in two provinces (Guangdong and Hubei) and five cities (Beijing, Shanghai, Shenzhen, Tianjin, and Chongqing),¹¹⁶ representing diverse economic performances at different stages of development. The pilot projects started trading in 2013, covering over 3,000 key emitters in more than 20 sectors. The NDRC exercised supervision over local ETS and delegated authority to provincial DRCs to formulate their implementation plans and regulatory mechanisms. While all pilots cover key high-emission industrial sectors such as power generation, building materials, iron and steel, and chemicals, they vary in many respects including the scope of covered entities, cap setting, and quota allocation.¹¹⁷ Although covered entities were reported to have abated both carbon intensity and total emissions,¹¹⁸ the local ETS pilot projects have not been fully functional as a market mechanism to drive deeper cuts through trading.

¹¹³ State Council, Responding to Climate Change: China's Policies and Actions (中国应对气候变化的政策与行动) (2021), Part II, Sec. 4.

¹¹⁴ Bianca Nogrady, *China Launches World's Largest Carbon Market: But Is It Ambitious Enough?*, 595 NATURE 637, 637 (2021).

¹¹⁵ Zhonghua Renmin Gongheguo Guomin Jingji He Shehui Fazhan Di Shier Ge Wunian Guihua Gangyao (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) [The Twelfth Five-Year Plan for National Economic and Social Development of the People's Republic of China] (promulgated by the Nat'l People's Cong., Mar. 14, 2011, effective Mar. 14, 2011), Part VI, Ch. 21, Sec. 1; "Shi'erwu" Kongzhi Wenshi Qiti Paifang Gongzuo Fang'an ("十二五"控制温室气体排放工作方案) [Work Plan on the Control of GHG Emissions] (promulgated by St. Council, Dec. 1, 2011, effective Dec. 1, 2011) Para. 17 (Chinalawinfo); Shi'erwu Jieneng Jianpai Zonghexing Gongzuo Fang'an ("十二五"节能减排综合性工作方案) [Work Plan on Energy Conservation and Emission Reduction] (promulgated by St. Council, Aug. 31, 2011, effective Aug. 31, 2011) Para. 44 (Chinalawinfo).

¹¹⁶ NDRC issued the Notice on Carbon Emissions Trading Pilot Schemes to the provincial DRCs in Beijing, Tianjin, Shanghai, Chongqing, Guangdong, Hubei and Shenzhen on 29 October 2011.

¹¹⁷ Zhao, *supra* note 40; Zhe Deng et al., *Effectiveness of Pilot Carbon Emissions Trading Systems in China*, 18 CLIMATE POL'Y 992-1011 (2018).

¹¹⁸ Gao, *supra* note 108.

All pilot projects suffer from low trading volumes and low liquidity in transactions.¹¹⁹ The lack of trading directly caused low carbon prices and none of the pilot projects had prices high enough to incentivize participants to change emission trajectories.¹²⁰ Active transactions of a carbon market depend on both actual and perceived scarcity of the emission allowances, neither of which existed. There was no actual scarcity due to the over-allocation of free quota based on historical emissions and much uncertainty about projected scarcity in the absence of an absolute emissions cap.¹²¹ Although most pilot projects were open to investors, the lack of robust regulation and data transparency deter potential investors who are concerned about the risks and uncertainties relating to cap setting and quota allocation.

Weak monitoring, reporting, and verification (MRV) regime, over-lenient financial sanctions, and lack of enforcement all contribute to non-compliance. Some pilot projects extended compliance deadlines or allocated additional quotas to artificially “improve” the compliance rates.¹²² To achieve the policy goal of emissions reduction, an ETS as a market tool not only relies on active trading to set carbon prices but also a credible MRV mechanism to ensure data accuracy and effective enforcement to deter non-compliance by covered entities. In the absence of fundamental improvement of the regulatory infrastructure, these problems of the local pilot projects will continue to hinder the development of the national ETS.

Due to the lack of accurate historical emissions data in many industrial sectors,¹²³ the NDRC decided to launch the national ETS in stages led by the power sector¹²⁴ which consisted of state-owned enterprises that had outperformed others in data reporting.¹²⁵ In preparation for the national ETS, the NDRC submitted the Draft Regulation on Carbon Emissions Trading (draft Regulation) to the State Council in 2015. However, due to divergent views among senior policymakers on the design and substantial difficulties in balancing the different interests of major stakeholders in different sectors and

¹¹⁹ Maosheng Duan, *From Carbon Emissions Trading Pilots to National System: The Road Map for China*, 9 CARBON & CLIMATE L. REV. 231, 235–36 (2015).

¹²⁰ Gorild Heggelund et al., *China's Carbon Market: Potential for Success?*, 10 POL. & GOVERNANCE 265, 270 (2022).

¹²¹ Alex Y. Lo, *Challenges to the Development of Carbon Markets in China*, 16 CLIMATE POL'Y 109, 115-16 (2016).

¹²² Duan, *supra* note 119, 236; Deng et al., *supra* note 117, 998-1000.

¹²³ Heggelund et al., *supra* note 120, 269.

¹²⁴ Plan on the Construction of the National ETS (Power Sector), Part I, Sec. 2, National Development and Reform Commission (2017).

¹²⁵ Xuelan Zeng et al., *Data-related Challenges and Solutions in Building China's National Carbon Emissions Trading Scheme*, 18:sup1 CLIMATE POL'Y 90, 97-99 (2018).

regions,¹²⁶ the draft Regulation has been pending, though further public consultation was conducted in 2019.¹²⁷

The national ETS has to operate temporarily under ministerial rules promulgated by the MEE.¹²⁸ The Measures for the Administration of Carbon Emissions Trading (for Trial Implementation) (MEE Measures) (2020) stipulates general rules on quota allocation and registration, emissions trading, MRV, compliance, offsets, supervision, and sanctions. The Implementation Plan on Cap Setting and Allowances Allocation for 2019-2020 National Carbon Emission Trading (Power Generation Industry) (Allocation Plan) (2020)¹²⁹ adopts benchmarking as the main quota allocation method and stipulates procedures for pre-allocation and ex-post adjustments, attaching a list of covered entities. The cap is set bottom-up. Provincial EEBs calculate the emissions quota of the covered entities within their jurisdictions and report them to the MEE, which then confirms the quota of each province. The total sum of quotas of all provinces is the cap of the national ETS. The number of covered entities in each province varies, from seven in Hainan to 338 in Shandong.¹³⁰ It is a carbon intensity-based cap, which changes according to the actual production levels. The MEE Measures (2020) and Allocation Plan (2020) are supported by more detailed technical guidelines on MRV,¹³¹ and rules on registration, trading, and settlement of emissions quota.¹³² Provincial EEBs organize the verification of emissions reports and may engage professional firms for verification services. That is, verification may be conducted by EEBs at provincial and sub-provincial levels, government-affiliated institutions, or other service providers selected and paid for by the government.

¹²⁶ Maosheng Duan & Li Zhou, *Key Issues in Designing China's National Carbon Emissions Trading System*, 6 *ECON. OF ENERGY & ENV'T POL'Y* 55, 56 (2017).

¹²⁷ The Interim Regulation on the Administration of Carbon Emissions Trading (draft) was released for public consultation by the MEE on 29 March 2019.

¹²⁸ Tanpaifangquan Jiaoyi Guanli Banfa (Shixing) (碳排放权交易管理办法 (试行)) [The Measures for the Administration of Carbon Emissions Trading (for Trial Implementation)] (promulgated by the Ministry of Ecology and Environment, Dec. 31, 2020, effective Feb. 1, 2021) (Chinalawinfo).

¹²⁹ 2019-2020 Nian Quanguo Tanpaifangquan Jiaoyi Peie Zongliang Sheding yu Fenpei Shishi Fangan (2019-2020年全国碳排放权交易配额总量设定与分配实施方案 (发电行业)) [The Implementation Plan for 2019-2020 National Carbon Emission Trading Cap Setting and Allowances Allocation (Power Generation Industry)] (promulgated by the Ministry of Ecology and Environment, Dec. 29, 2020, effective Dec. 29, 2020) (Chinalawinfo).

¹³⁰ List of Covered Entities for 2019-2020 National ETS, The Ministry of Ecology and Environment (2020).

¹³¹ They are the Guidelines on Enterprise GHG Emissions Accounting and Reporting (Power Generation Facilities) and the Guidelines for Enterprise GHG Emissions Verification (for Trial Implementation) issued by the MEE in March 2021.

¹³² MEE promulgated the Rules for the Administration of Registration of Carbon Emissions (for Trial Implementation), the Rules for the Administration of Trading of Carbon Emissions (for Trial Implementation) and the Rules for the Administration of Settlement of Carbon Emissions (for Trial Implementation) on 14 May 2021.

Compliance is crucial for an ETS to achieve the purpose of emissions cut in a cost-effective manner. With low thresholds for compliance and sanctions capped at lenient levels to alleviate the burden on covered entities, the national ETS is unlikely to drive innovation and trading to avoid non-compliance. The Allocation Plan (2020) requires gas-fired power plants to surrender allowances up to the level of free allocation even if their verified emissions exceed the allocated quota. Other covered entities should surrender free allocation plus a maximum of 20 percent of their verified emissions,¹³³ a distinction to incentivize the switch from coal-fired to gas-fired power generation. Sanctions for non-compliance are extremely lenient: a fine of 10,000 to 30,000 yuan for the failure in reporting or falsification of data,¹³⁴ and 20,000 to 30,000 yuan for the failure to surrender quota.¹³⁵ Any gap between the compliance obligation and allowances surrendered will be deducted from quota allocation in the following year.¹³⁶ These penalties are more lenient than many local pilot projects such as in Shanghai and Guangdong and are unlikely to deter violations.

Compared to laws and regulations, the MEE Measures (2020) and related rules are weak by nature.¹³⁷ Ministerial rules are promulgated to implement laws and regulations and may not impose restrictions over one's rights or create duties without the legal basis in laws or regulations.¹³⁸ The Administrative Penalty Law restricts the creation of administrative penalties to laws and regulations.¹³⁹ Ministerial rules may only impose administrative penalties within the scope and range stipulated by relevant laws and regulations. In the absence of such laws and regulations, a ministerial rule may only impose sanctions in the form of a warning, reprimand, or a fine subject to a cap determined by the State Council.¹⁴⁰ The MEE Measures (2020) thus imposes

¹³³ 2019–2020 nian Quanguo Tanpaifangquan Jiaoyi Peie Zongliang Sheding yu Fenpei Shishi Fangan (2019–2020年全国碳排放权交易配额总量设定与分配实施方案（发电行业）) [The Implementation Plan for 2019–2020 National Carbon Emission Trading Cap Setting and Allowances Allocation (Power Generation Industry)] (promulgated by the Ministry of Ecology and Environment, Dec. 29, 2020, effective Dec. 29, 2020), sec. 6.

¹³⁴ Tanpaifangquan Jiaoyi Guanli Banfa (Shixing) (碳排放权交易管理办法（试行）) [The Measures for the Administration of Carbon Emissions Trading (for Trial Implementation)] (promulgated by the Ministry of Ecology and Environment, Dec. 31, 2020, effective Feb. 1, 2021), art. 39.

¹³⁵ *Id.*, art. 40.

¹³⁶ *Id.*, arts. 39–40.

¹³⁷ The Law on Legislation was adopted by the 9th NPC at its 3rd meeting on 15 March 2000 and amended by the 12th NPC at its 3rd meeting on 15 March 2015.

¹³⁸ Zhonghua Renmin Gongheguo Lifafa (中华人民共和国立法法) [Legislation Law of the People's Republic of China] (promulgated by the Nat'l People's Cong., Mar. 15, 2015, effective Mar. 15, 2015), art. 80 (Chinalawinfo).

¹³⁹ The Administrative Penalty Law was adopted by the eighth NPC at its fourth meeting on 17 March 1996. It was amended twice in 2009 and 2017, revised by the 13th NPCSC at its 25th meeting on 22 January 2021. Ch. 2 on the types and creation of administrative penalties.

¹⁴⁰ Zhonghua Renmin Gongheguo Xingzheng Chufafa (中华人民共和国行政处罚法) [Law of The People's Republic of China on Administrative Penalty] (promulgated by the Standing Comm. Nat'l People's Cong., Jan. 22, 2021, effective Jul. 15, 2021), art. 13 (Chinalawinfo).

lenient penalties for violation.¹⁴¹ In contrast, the draft Regulation (2019) proposes much higher fines, 50,000 to 200,000 yuan for failure in monitoring or reporting, or falsification of data and a fine equivalent to two to five times the average market price of the carbon emission quota that the entity fails to surrender,¹⁴² which are much heavier penalties that likely to deter violation, ensure data accuracy, and compel trading and surrender of emissions quota. A robust regulatory infrastructure is imperative for effective enforcement that punishes and deters violations. Accurate and reliable emissions data are essential for an ETS.¹⁴³ They not only facilitate effective enforcement but also provide the basis for the allocation and trading of allowances conducive to accurate carbon pricing. Timely promulgation of the draft Regulation (2019) is indeed crucial for the national ETS to function as a market tool for emission abatement.

Another weakness of the national ETS is its carbon intensity-based cap setting, the complexity and vagueness of which not only inhibit effective communication of the information to market players including potential investors but also hinders connectivity with other carbon markets currently in operation.¹⁴⁴ With China's updated NDC (2021) setting the dual carbon targets, the national ETS should reflect this latest commitment to total emissions control. An absolute emission cap will substantially improve the clarity and transparency in quota allocation and instill confidence in potential investors. It is indeed urgent to substantially increase market participants and expand trading volumes, which cannot be achieved without a sound regulatory guarantee of accurate and transparent market information, predictable carbon prices, and effective enforcement against non-compliance.

There is no doubt that China aims to build a stable and effective ETS in the near to medium term as an important instrument to control GHG emissions at a lower overall cost.¹⁴⁵ In the longer term towards mid-century, the national ETS is expected to be a key strategy to modernize China's climate governance system and a tool that connects China with international carbon markets.¹⁴⁶ Sustained development of the national ETS hinges upon a sophisticated regulatory infrastructure to enable transparent and scientific cap setting, fair allocation of allowances based on accurate data, active and orderly trading,

¹⁴¹ MEE Measures (2020), *supra* note 134, arts. 39–40. Covered entities are fined 10,000 to 30,000 yuan for failure in reporting or falsification of data and fined 20,000 to 30,000 yuan for failure in compliance.

¹⁴² Draft Regulation on ETS (2019), art. 19.

¹⁴³ Lawrence H. Goulder et al., *China's National Carbon Dioxide Emission Trading System: An Introduction*, 6 *ECON. OF ENERGY & ENV'T POL'Y* 1, 10–11 (2017).

¹⁴⁴ Thomas Stoerk, Daniel J. Dudek & Jia Yang, *China's National Carbon Emissions Trading Scheme: Lessons from the Pilot Emission Trading Schemes, Academic Literature, and Known Policy Details*, 19 *CLIMATE POL'Y* 472, 477–78 (2019).

¹⁴⁵ China's INDC (2015), *supra* note 32, Part II, Sec. 12; China's Updated NDC (2021), *supra* note 33, Part III, Sec. 10.

¹⁴⁶ Zhongguo Benshiji Zhongye Changqi Wenshiqiti Dipaifang Fazhan Zhanlue (中国本世纪中叶长期温室气体低排放发展战略) [China's Mid-Century Long-Term Low Greenhouse Gas Emission Development Strategy] (2021), <https://unfccc.int/documents/307765>, Part III, Sec. 10.

effective enforcement, and reliable MRV mechanisms that ensure data integrity.

B. *The Civil Society and Climate Litigation*

Public supervision of governments and enterprises is indispensable for good climate governance. The rapid increase of climate litigation by individuals and non-governmental organizations (NGOs) in other jurisdictions¹⁴⁷ reflects growing frustration over government and corporate inaction worldwide.¹⁴⁸ Climate litigation is defined restrictively by some including the UNEP as cases specifically addressing climate mitigation, adaptation, or the science of climate change.¹⁴⁹ Others broadly include all cases with climate change as a central or peripheral issue, cases with climate change as motivations but not raised as an issue, and cases with no specific climate change framing but have implications for climate change mitigation or adaptation as climate litigation.¹⁵⁰ China has adopted the latter approach.

According to the Supreme People's Court (SPC), climate litigation refers to the adjudication of climate-related disputes concerning carbon emissions, energy conservation, green finance, and biodiversity conservation.¹⁵¹ In the absence of climate legislation, these cases do not directly address climate change either by parties' claims or in judicial decisions. Nevertheless, they focus on issues closely relating to climate change and the judgments have direct impacts on mitigation or adaptation.¹⁵² The SPC released climate-related cases in its white paper for the first time in 2020.¹⁵³ Two were filed by Friends of Nature (FON), China's best-known grassroots environmental NGO, against two power grid companies in Gansu and Ningxia for their failure to fully

¹⁴⁷ UNEP reported an increase from 884 cases by 2017 to 1,550 by July 2020. See UNEP, *Global Climate Litigation Report: 2020 Status Review* (2021). By May 2022, a total of 2002 climate cases are documented. See Joana Setzer and Catherine Higham, *Global Trends in Climate Change Litigation: 2022 Snapshot*, London: Grantham Research Institute on Climate Change and the Environment and Centre for Climate Change Economics and Policy, LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE (2022).

¹⁴⁸ Jacqueline Peel & Hari M. Osofsky, *Litigation as a Climate Regulatory Tool*, in INTERNATIONAL JUDICIAL PRACTICE ON THE ENVIRONMENT: QUESTIONS OF LEGITIMACY 311–36 (Christina Voigt ed., 2019) (ebook); Jacqueline Peel & Jolene Lin, *Transnational Climate Litigation: The Contribution of the Global South*, 113 AM. J. OF INT'L L. 679–726 (2019); Joana Setzer & Lisa Benjamin, *Climate Litigation in the Global South: Constraints and Innovations*, 9 TRANSNAT'L ENV'T L. 77–101 (2020).

¹⁴⁹ UNEP (2021), *supra* note 142, at 7. This is consistent with the restrictive approach taken by Markell and Ruhl that requires 'party filings or tribunal decisions directly and expressly raise an issue of fact or law regarding the substance or policy of climate change causes and impacts.' See David Markell & J.B. Ruhl, *An Empirical Assessment of Climate Change in the Courts: A New Jurisprudence or Business as Usual?*, 64 FLORIDA LR 15, 27 (2012); Meredith Wilensky, *Climate Change in the Courts: An Assessment of Non-US Climate Litigation*, 26 DUKE ENV'T L. & POL'Y F. 131, 134 (2015).

¹⁵⁰ JACQUELINE PEEL & HARI M. OSOFSKY, CLIMATE CHANGE LITIGATION: REGULATORY PATHWAYS TO CLEANER ENERGY 8–9 (2015).

¹⁵¹ Supreme People's Court, *Opinion on the Enhancement of Judicial Functions in Promoting the Construction of Ecological Civilization and Green Development* (2016).

¹⁵² Supreme People's Court, *Environment and Resources Adjudication in 2019* (2020), Part I, Sec. 4.

¹⁵³ *Id.*

purchase electricity from renewable sources, which is in violation of the Renewable Energy Law (REL).¹⁵⁴ Tapping renewable energy and controlling coal production and consumption have been China's key mitigation strategies since the Rio Summit. State policy incentives have successfully boosted the installed capacity and generation of wind and solar power, but high curtailment rates constrained greater consumption of renewable energy. The FON had clear motivation to address climate change and the adjudication (or simply filing) of the cases have direct impacts on climate mitigation even though the judgment of the Gansu High Court¹⁵⁵ makes no direct reference to "climate change" and the case in Ningxia is still pending.

In *FON v. State Grid Gansu Power Company*, the FON sued Gansu Power who is responsible for the construction and operation of the power grid in Gansu. Its violation and the consequent curtailment of renewable energy meant the electricity it dispatched that should have come from renewable sources was generated by thermal power plants, emitting additional SO₂, NO_x, and smoke and dust, damaging public interest. The FON claimed remedies including: (i) cessation of infringement and full purchase of electricity generated from wind and solar power plants in Gansu; (ii) payment of ecological and environmental compensation in the amount of 1.718 billion yuan; (iii) public apologies at national and provincial media; and (iv) payment of litigation related expenses incurred by the FON. At first instance, Lanzhou Intermediate Court dismissed the case on the ground that Gansu Power was not a thermal power plant emitting air pollutants and that its purchase and dispatch of electricity were not acts of pollution causing harm to the public interest. The decision was revoked by Gansu High Court upon appeal. Instead of remanding the case back to Lanzhou Intermediate Court, the High Court designated Gansu Mining Zone Court, a specialized environment court with jurisdiction over all environment and resources cases under the jurisdiction of intermediate courts in Gansu, to adjudicate the case.¹⁵⁶

In *FON v. State Grid Ningxia Power Company*, the FON sued Ningxia Power for the same reason and made similar civil claims. Yinchuan Intermediate Court charged a prohibitively high case acceptance fee calculated on the basis of the damages claimed, forcing the FON to modify its claims to focus on the cessation of infringement and elimination of harm rather than compensation. In the revised claims, the FON further requested a court order for Ningxia Power to invest in infrastructure building for better transmission

¹⁵⁴ Zhou Chen, *Addressing Dilemmas over Climate Change Litigation in China*, 49 H.K. L. J. 719-748 (2019); Fengliang Jin, *On the Environmental Civil Public Interest Litigation System for the Protection of the Climate in China: Comments on Two Cases from a Pragmatism Perspective*, 14 J. OF WORLD ENERGY L. & BUS. 17-24 (2021).

¹⁵⁵ Beijingshi Chaoyangqu Ziranzhiyou Huanjing Yanjiusuo yu Guowang Gansusheng Dianligongsi Ershen Minshi Caidingshu (北京市朝阳区自然之友环境研究所与国网甘肃省电力公司二审民事裁定书) [*FON v. State Grid Gansu Power Company*], (2018)甘民终679号 (Gansu High Court, 2018).

¹⁵⁶ *Id.* For more on specialized environmental courts and jurisdiction by designation, see YUHONG ZHAO, CHINESE ENVIRONMENTAL LAW 412-414 (2021).

and dispatch of renewable energy and to disclose information on its purchase of renewable energy.¹⁵⁷

Gansu Mining Zone Court accepted the case in 2019 and, after a long delay in adjudication, finally facilitated the settlement of the disputes by mediation. It is a clear indication of the practical difficulty in adjudication due to the lack of legal basis in contrast to the straightforward and well-established EPILs against polluters.¹⁵⁸ The REL was promulgated to support the development of renewable energy so as to increase energy supply, improve energy structure and achieve energy security, though it also aims to protect the environment for sustainable socio-economic development.¹⁵⁹ The FON based its claims on the priority dispatch provision favoring renewable electricity. That is, power grid companies are required to fully purchase the electricity generated by renewable sources according to the state plan and meet the relevant technical standards.¹⁶⁰ If a power grid company fails to do so and causes economic loss to renewable energy generators, it shall be liable for compensation and shall rectify within a specified time limit. Failure in rectification results in a fine up to the amount of the economic loss suffered by renewable energy generators.¹⁶¹ Gansu and Ningxia power companies are potentially liable for compensation of economic loss suffered by the renewable power plants, rectification ordered by the regulatory authority, and payment of a fine in case of failure to rectify. None of these liabilities had been pursued either by the renewable power generators or the regulator. As a matter of fact, despite the high curtailment rates of renewable energy, there had not been a single case of administrative sanction imposed on any grid company for a decade since the implementation of REL.¹⁶² The FON filed the case to force actions by both government and enterprises. However, the statutory provisions do not provide a strong and convincing legal basis for the FON's claims to be supported by the court. Thus, judicial mediation resulted in the pledge of Gansu Power to further invest 913 million yuan on the basis of the 1.98 billion investment made during the 14th FYP period to improve the dispatch and transmission capacity for new energies.¹⁶³ To ensure actual and timely implementations of these investment projects, the Agreement requires Gansu Power to submit an annual progress report by 31 December

¹⁵⁷ *NingxiaQifengan: Gei Haizi Liuxia Meihao de Weilai* (宁夏弃风案：给孩子留下美好的未来) [Ningxia Wind Power Curtailment Case: A Better Future for Our Children], FRIENDS OF NATURE, <http://www.fon.org.cn/action/domain/content/160>.

¹⁵⁸ For more on EPIL, see ZHAO, *supra* note 156, at 392–428; Lei Xie & Lu Xu, *Environmental Public Interest Litigation in China: A Critical Examination*, 10 *TRANAT'L ENV'T L.* 441 (2021).

¹⁵⁹ REL (2009), art. 1; Yanfang Li & Wei Cao, *Framework of Laws and Policies on Renewable Energy and Relevant Systems in China under the Background of Climate Change*, 13 *VERMONT J. OF ENV'T L.* 823 (2012).

¹⁶⁰ REL (2009), art. 14.

¹⁶¹ REL (2009), art. 29.

¹⁶² NPCSC Inspection Team, *Report on the Implementation of the Renewable Energy Law*, presented to the 13th NPCSC at its 15th meeting on 24 December 2019.

¹⁶³ The Settlement Agreement is on file with the Author.

each year to the Gansu Mining Zone Court, which shall deliver a copy to FON so that the NGO can participate in monitoring the performance of Gansu Power.

The media report of the cases and the public education campaigns by the FON on climate change and low-carbon development¹⁶⁴ have already drawn public attention to the alarming curtailment of renewable energy and put tremendous pressure on both governments and power grid companies. Regulatory responses issued jointly or separately by the NDRC and the National Energy Administration (NEA) include the Implementation Plan on Resolving the Problem of Curtailment of Hydro-, Wind, and Solar Power (2017), Action Plan on Clean Energy Consumption (2018-2020), Notice on Building and Improving Mechanism to Guarantee Consumption of Renewable Energy (2019), and Work Plan on Regulatory Supervision of Clean Energy Consumption (2021). As Peel and Osofsky point out, “[c]limate change litigation – whether successful or not – thus has important indirect influences on the regulatory landscape through the role it plays in shaping social norms, including public perceptions of climate change, accepted understandings of climate science and views on the appropriate regulatory response.”¹⁶⁵ The strengthened regulatory measures have compelled corporate action resulting in a significant drop in the curtailment rates of wind power in Gansu and other provinces notorious for curtailment of renewable energy.¹⁶⁶

TABLE 4. WIND POWER CURTAILMENT: THREE WORST PROVINCES (2016-2020)

	Gansu	Inner Mongolia	Xinjiang
2016	43%	21%	38%
2017	33%	15%	29%
2018	19%	10%	23%
2019	7.6%	7.1%	14%
2020	6%	5%	10%

To further guarantee the increasing consumption of renewable energy, China introduced the Renewable Portfolio Standard (RPS) in 2019, setting a minimum percentage of renewable electricity consumption for each province on an annual basis. Under the RPS scheme, the grid companies, electricity retailers, electricity buyers, and power plants are required to contribute to the overall provincial RPS.¹⁶⁷ Since 1 January 2020, each province is assigned the

¹⁶⁴ *Gansu Qifeng An, Women “Chongtuo Zailai” (甘肃弃风案，我们“重头再来”)* [Gansu Curtailment Case: We Start All Over Again], FRIENDS OF NATURE, <http://www.fon.org.cn/action/domain/content/161>; FON, *supra* note 157.

¹⁶⁵ PEEL & OSOFSKY, *supra* note 150, at 223.

¹⁶⁶ Official data by the NEA at http://zfxgk.nea.gov.cn/2021-06/20/c_1310039970.htm; http://www.nea.gov.cn/2020-02/28/c_138827910.htm; http://www.nea.gov.cn/2018-02/01/c_136942234.htm; http://www.nea.gov.cn/2017-01/26/c_136014615.htm.

¹⁶⁷ Guojia Fazhan Gaigewei, Guojia Nengyuanju Guanyu Jianli Jianquan Kezaisheng Nengyuan Dianli Xiaona Baozhang Jizhi de Tongzhi (国家发展改革委、国家能源局关于建立健全可再生能源电力消纳保

RPS by the NEA in accordance with the national renewable energy development plan, actual growth of electricity consumption, and capacity of consumption of renewable energy locally generated or transmitted from other provinces. As a principle, the RPS shall be increased or maintained compared to the previous year.¹⁶⁸ For example, the RPS set for Gansu increased from 44.5 percent in 2020 to 49.5 percent in 2021 (non-hydropower renewables from 16.5 percent in 2020 to 18 percent in 2021)¹⁶⁹ and is expected to further increase to 50 percent (non-hydropower renewable energy at 19.25 percent) in 2022.¹⁷⁰ Provincial governments are responsible for bringing more renewable energy onto the grid and exploring renewable demand from corporate energy buyers to achieve the RPS. Gansu achieved RPS of 52.5 percent (non-hydro RPS of 17.8 percent) in 2020 and 46.9 percent (non-hydro RPS of 18.9 percent) in 2021.¹⁷¹

Whatever the final outcomes of the two cases, regulatory and corporate actions have been taken to substantially improve the consumption of electricity from renewable sources with direct positive impacts on GHG mitigation. Nonetheless, NGOs have the potential to play a more significant role in shaping regulatory and corporate practices if they are further equipped with climate legislation or revised REL providing a solid legal basis for public interest climate litigation.¹⁷² Civil society will be able to influence government and corporate behaviors more directly through judicial decisions as they continue to reshape social norms indirectly through media reports and public campaigns.

障机制的通知) [Notice on Building and Improving Mechanism to Guarantee Consumption of Renewable Energy] (promulgated by NDRC and NEA, May. 10, 2019) (Chinalawinfo).

¹⁶⁸ *Id.*, Appendix 1.

¹⁶⁹ Guojia Nengyuanjui, Guojia Nengyuanju Guanyu Yinfa Geshengji Xingzheng Quyue 2021 Nian Kezaisheng Nengyuan Dianli Xiaona Zeren Quanzhong de Tongzhi (国家发展改革委、国家能源局关于印发各省级行政区域2020年可再生能源电力消纳责任权重的通知) [Notice on Provincial Renewable Portfolio Standards for 2020] (promulgated by NDRC and NEA, May. 18, 2020), Appendix; Guojia Fazhan Gaigewei, Guojia Nengyuanju Guanyu 2021 Nian Kezaisheng Nengyuan Dianli Xiaona Zeren Quanzhong Ji Youguan Shixiang de Tongzhi (国家发展改革委、国家能源局关于2021年可再生能源电力消纳责任权重及有关事项的通知) [Notice on Provincial Renewable Portfolio Standards for 2021] (promulgated by NDRC and NEA, May. 21, 2021), Appendix 1 (Chinalawinfo).

¹⁷⁰ *Id.*, Appendix 2.

¹⁷¹ Guojia Nengyuanju Guanyu 2020 Niandu Quanguo Kezaisheng Nengyuan Dianli Fazhan Jiance Pingjia Jieguo de Tongbao (国家能源局关于2020年度全国可再生能源电力发展监测评价结果的通报) [NEA Report on the Assessment of Renewable Electricity Development in 2020], NEA (Jul. 2, 2021), http://zfxgk.nea.gov.cn/2021-07/02/c_1310039970.htm; Guojia Nengyuanju Guanyu 2021 Niandu Quanguo Kezaisheng Nengyuan Dianli Fazhan Jiance Pingjia Jieguo de Tongbao (国家能源局关于2021年度全国可再生能源电力发展监测评价结果的通报) [NEA Report on Renewable Energy Consumption Portfolio Performance in 2021] (Aug. 27, 2022), https://www.gov.cn/zhengce/zhengceku/2022-09/23/content_5711253.htm.

¹⁷² Jiangfeng Li, *Climate Change Litigation: A Promising Pathway to Climate Justice in China?*, 37 VIRGINIA ENV'T L. J. 132, 167 (2019).

C. *The Climate Legislation Gap*

Climate legislation serves an important function of linking international obligations with domestic implementation by defining key concepts of climate risk, climate damage, and climate loss, stipulating legal duties of mitigation and adaptation by governments and GHG emitters adopting the precautionary principle, and imposing liabilities. The UK took the lead in promulgating the Climate Change Act¹⁷³ followed by many others.¹⁷⁴ The climate legislation gap has left China's climate governance system weak in its legal foundation, inhibiting engagement with the non-government sectors and the operation of the market and judicial process.

Although China's national legislature issued the Resolution on Making Active Responses to Climate Change in 2009,¹⁷⁵ placing climate legislation on the law-making agenda,¹⁷⁶ the extreme difficulties in tackling the complex and "super wicked" problem of climate change¹⁷⁷ have delayed the law drafting process. Conventional environmental regulatory and governance methods do not apply to climate change which is caused by almost every aspect of social-economic life. Mitigation and adaptation involve all sectors from power generation, industrial production, transport, buildings, and agriculture, to every person living a life by consuming energy and resources.

A cross-department working group consisting of 17 bodies, including the Environment and Resources Protection Commission of the National People's Congress (NPC), the Legislative Affairs Committee of the NPC Standing Committee (NPCSC), and the Legal Affairs Office of the State Council was formed in 2011 to work on climate legislation, with NDRC in charge of legislative research, field study, and drafting of the bill.¹⁷⁸ To stimulate public discussion and make recommendations to the working group, scholars from the

¹⁷³ Alina Averchenkova et al., *The Impact of Strategic Climate Legislation: Evidence from Expert Interviews on the UK Climate Change Act*, 21 CLIMATE POL'Y 251-263 (2021); Eloise Scotford & Stephen Minas, *Probing the Hidden Depths of Climate Law: Analysing National Climate Change Legislation*, 28 REV. OF EUR., COMPAR. & INT'L ENV'T L. 67, 75-76 (2019).

¹⁷⁴ Shaikh Eskander et al., *Global Lessons from Climate Change Legislation and Litigation*, 2 ENV'T & ENERGY POL'Y & THE ECON. 44, 56-67 (2021); Also see THOMAS L. MUINZER (ed.), NATIONAL CLIMATE CHANGE ACTS: THE EMERGENCE, FORM AND NATURE OF NATIONAL FRAMEWORK CLIMATE LEGISLATION (2020); PRUE TAYLOR, TRENDS IN CLIMATE CHANGE LEGISLATION (2017); Climate Change Laws of the World, LSE Grantham Research Institute on Climate Change and the Environment, at <https://climate-laws.org/>.

¹⁷⁵ Quanguo Renmin Daibiao Dahui Changwu Weiyuan Hui Guanyu Jiji Yingdui Qihou Bianhua de Jueyi (全国人民代表大会常务委员会关于积极应对气候变化的决议) [NPCSC Resolution on Making Active Responses to Climate Change] (promulgated by the Standing Comm. Nat'l People's Cong on 27 August 2009 with immediate effect) (Chinalawinfo).

¹⁷⁶ *Id.*, sec. 4.

¹⁷⁷ Richard J. Lazarus, *Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future*, 94 CORNELL L. REV. 1153, 1159-1187 (2009).

¹⁷⁸ Zhongguo Yingdui Qihou Bianhua de Zhengce yu Xingdong 2016 Niandu Baogao (中国应对气候变化的政策与行动2016年度报告) [China's Response to Climate Change: Policy and Action – 2016 Annual Report], NDRC (Oct., 2016).

Chinese Academy of Social Sciences published a draft bill in 2012.¹⁷⁹ Meanwhile, the NDRC encouraged provincial legislatures to work on local climate law-making, using Jiangsu as a case study.¹⁸⁰ By the end of 2013, a draft Climate Change Legislative Framework was produced¹⁸¹ and circulated within the governments.¹⁸² It was not until 2015 that the NDRC released the Climate Change Response Law (CCRL) (first draft) to enterprises and NGOs for consultation.¹⁸³ In 2016, the State Council included the CCRL in its annual law-making plan under the category of “projects under research”,¹⁸⁴ in other words, climate legislation was still a long-term target.

The dual carbon pledge has driven the MEE to speed up its work on climate legislation.¹⁸⁵ There is however still much uncertainty as to how soon the draft CCRL will be released for public consultation. While the law is one of the three pillars together with policy and market to be strengthened in building domestic climate governance, China's Mid-Century Long-Term Low Greenhouse Gas Emission Development Strategy (2021) makes no reference to climate legislation. Instead, it stipulates the making of specialized laws on carbon neutrality and revising existing laws on energy conservation, electricity, coal, renewable energy, and circular economy.¹⁸⁶ It restates the position of the Working Guidance (2021)¹⁸⁷ and remains in line with the Action Plan (2021) that emphasizes the importance of building a low-carbon legal regime by making or revising laws on energy, energy conservation, electricity, coal,

¹⁷⁹ Xiaoyi Jiang & Jianwei Zhang, *China's Legislative Practices on Climate Change after the Paris Agreement*, 10 J. OF E. ASIA & INT'L L. 259, 261 (2017); Jianwei Zhang et al., *Regional Legislation to Address Climate Change in China: Necessity and Feasibility*, 11 INT'L J. OF CLIMATE CHANGE STRATEGIES AND MGMT. 536, 540 (2019).

¹⁸⁰ Zhongguo Yingdui Qihou Bianhua de Zhengce yu Xingdong 2012 Niandu Baogao (中国应对气候变化的政策与行动2012年度报告) [China's Response to Climate Change: Policy and Action – 2012 Annual Report], NDRC (Nov. 22, 2012).

¹⁸¹ Zhongguo Yingdui Qihou Bianhua de Zhengce yu Xingdong 2013 Niandu Baogao (中国应对气候变化的政策与行动2013年度报告) [China's Response to Climate Change: Policy and Action – 2013 Annual Report], NDRC (Nov. 8, 2013).

¹⁸² *Id.*, at 29–30.

¹⁸³ Guojia Fazhan Gaige Qihou Si Jiu Yingdui Qihou Bianhua Fa Chugao Zhengqiu Qiyejie he Feizhengfu Zuzhi Yijian (国家发展改革委气候司就《应对气候变化法(初稿)》征求企业界和非政府组织意见) [The Climate Division of NDRC Consults Enterprises and NGOs on the Climate Change Response Law (1st draft)] NDRC (Sept. 23, 2015), https://www.ndrc.gov.cn/fzggw/jgsj/fgs/sjdt/201509/t20150923_1107743.html?code=&state=123.

¹⁸⁴ Guowuyuan 2016 Niandu Lifa Gongzuo Jihua (国务院2016年立法工作计划) [State Council Annual Law-making Plan for 2016], State Council (Apr. 13, 2016), https://www.gov.cn/zhengce/content/2016-04/13/content_5063670.htm.

¹⁸⁵ Guanyu Tongchou he Jiaqiang Yingdui Qihou Bianhua yu Shengtai Huanjing Boahu Xiangguan Gongzuo de Zhidao Yijian (关于统筹和加强应对气候变化与生态环境保护相关工作的指导意见) [Guiding Opinion on Coordination and Strengthening of Climate Change Response and Environmental Protection], MEE (Jan. 11, 2021), Part III, Sec. 7.

¹⁸⁶ Zhongguo Ben Shiji Zhongye Changqi Wenshi Qiti Di Paifang Fazhan Zhanlue (中国本世纪中叶长期温室气体低排放发展战略) [China's Mid-Century Long-Term Low Greenhouse Gas Emission Development Strategy] (Oct. 28, 2021), United Nations Climate Change, <https://unfccc.int/documents/307765>, Part III, Sec. 10.

¹⁸⁷ CCPC & State Council, *supra* note 86, Sec XI, Para. 27.

renewable energy, circular economy, and clean production.¹⁸⁸ It is more likely to see the promulgation of the Energy Law and revisions of existing laws relating to climate change sooner than the CCRL. As long as climate change is expressly incorporated in these different statutes that address mitigation and adaptation by different means, they will jointly strengthen the legal foundation of climate governance from different perspectives pending the promulgation of the CCRL.

CONCLUSION

Where there is a will, there is a way. China's strong political will to contribute and lead as a reliable and responsible party to the Paris climate regime is found in its NDCs and domestic implementation. The current top-down climate governance led by the central authority has its strength and limitations. While the decisive actions taken by a command-and-control approach have achieved substantial abatement of energy and carbon intensity, effective reduction of coal and steady increase of non-fossil fuels in the primary energy mix, as well as significant expansion of carbon sinks including forests and grassland, they can be painful for those factories, businesses, and individuals directly affected by the drastic measures such as government-issued bans, forced relocation or closure, and power blackout abruptly imposed by local governments to achieve mandatory targets.

The Paris regime depends on sincere and timely delivery of commitments to keep its aspirations within reach. China has not only submitted progressively ambitious NDCs based on its national capability but also promulgated domestic climate policies and plans. The 14th FYP and the '1+N' policy framework released in 2021 have translated international pledges into domestic action plans to be carried out in the critical decade of the 2020s. Its unprecedented political will supported by a relatively stable political system offers much-needed reassurance of uninterrupted domestic implementation of its international obligations. There is, however, an urgent need to search for better, credible and sustained delivery of its dual carbon pledges. Good climate governance based on a solid legal infrastructure that facilitates active and meaningful participation by the industry, business, and civil society will achieve long-term mitigation in a more efficient and predictable manner. A functional ETS and a fair and accessible judicial process for climate litigation provide the economic and legal instruments that will alleviate the burden on the governments in addressing the tension between economic growth, climate mitigation, and energy security in China's transition to a low-carbon and climate-resilient society.

¹⁸⁸ State Council, *supra* note 104, Part V, Sec. 2.