

## China Methane Briefing

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## 1. Introduction

This briefing provides an overview of key stakeholders for methane emissions reduction in China, as well as the existing national regulatory requirements that are relevant to methane. It is followed by a list of policy opportunities to strengthen China’s efforts on methane emissions control in the near term and for achieving the country’s longer-term 2060 carbon neutrality goal.

Cutting methane emissions is the biggest and fastest strategy for slowing warming and keeping 1.5 °C within reach.<sup>1</sup> A Global Methane Assessment (GMA) from the Climate and Clean Air Coalition (CCAC) and the United Nations Environment Programme (UNEP) concludes that available mitigation measures could reduce human-caused methane emissions by 45% by 2030 and avoid nearly 0.3 °C warming by the 2040s.<sup>2</sup>

Methane plays an increasingly important role in China’s responses to rapid heating of the Earth. China’s methane emissions were 55.292 Mt in 2014 (1.1 Gt CO<sub>2e</sub> using methane GWP of 21).<sup>3</sup> The lion’s share of methane mitigation potential resides in the coal-mining sector. China has the potential to reduce 403 MtCO<sub>2e</sub> of coal-mine methane emissions by 2030 (using methane GWP of 25), which represents 69% of the global methane mitigation potential in coal mining.<sup>4</sup> For the waste sector, longer term, China has the potential to reduce methane emissions by 20% by 2050.<sup>5</sup> And, in the near term, by 2030, China has the potential to reduce 27 MtCO<sub>2e</sub> of landfill waste methane emissions.<sup>6</sup>

Methane, in the context of policy discussions in China, is covered under the broader category of “non-CO<sub>2</sub> greenhouse gases” (GHGs). Methane as a “short-lived climate pollutant” is best discussed with Chinese policymakers in this non-CO<sub>2</sub> context.

## 2. Overview of Key Stakeholders for China Methane Emissions Control

Methane emissions reduction in China involves a number of stakeholders, including national ministries and agencies, government-affiliated research institutions, universities, non-governmental organizations (NGOs) (including the China offices of foreign NGOs), and voluntary industry initiatives. Key stakeholders are listed below.

### A. National Ministries and Agencies

**Ministry of Ecology and Environment (MEE):** MEE is the lead authority in China for work on environmental protection regulatory and other initiatives, including control of pollutant emissions. For methane reduction, MEE issues emission standards for coal-mine methane. Additionally, MEE also collaborates with other national ministries on reducing waste-sector environmental impacts, including the reduction, re-use or recycling, and harmless disposal of solid waste. “Solid waste” in this case includes household waste, livestock waste, and urban waste and sludge. Additionally, entities affiliated with MEE, such as the **National Center for Climate Change Strategy and International Cooperation**, play an important role in assisting MEE with methane-related national plan drafting and implementation.

**National Development and Reform Commission (NDRC):** NDRC is broadly involved in managing sectoral methane sources. In particular, the **National Energy Administration (NEA)**, which NDRC manages, drafts and implements policies and standards for coal mines, as well as for the oil and gas industry. NEA also participates in the drafting of energy-related climate change policies.

**Ministry of Natural Resources (MNR):** MNR is in charge of natural-resource and land management, supervision, and registration. MNR also maintains the Chinese government's databases of coal, oil, and gas resources.

**National Mine Safety Administration under the Ministry of Emergency Management:** Coal-mine methane control is closely related to mine-safety considerations in China. Methane-related explosions at coal mines are a source of numerous workplace fatalities and injuries in China. The National Mine Safety Administration leads management of this safety aspect of coal-mine methane.

**Ministry of Housing and Urban-Rural Development (MOHURD):** MOHURD is in charge of providing housing and managing construction activities in China. MOHURD's **Urban Construction Division** provides guidance on the construction of urban-sludge treatment facilities and networks. MOHURD's **Village and Town Construction Division** provides guidance on environmental protection for small towns and villages. Both divisions are relevant for coordination on methane-reduction work.

**Ministry of Agriculture and Rural Affairs (MOA):** MOA is in charge of the agriculture sector and the development of rural areas. MOA is responsible for methane reduction from agricultural sources, such as agricultural waste management in rural areas, green development of the livestock industry and management of fertilizer utilization. In particular, the **Rural Energy and Environment Agency** under MOA is responsible for implementing rural environmental protection policies and carrying out technology demonstration projects, including those related to methane.

**Ministry of Industry and Information Technology (MIIT):** MIIT is involved in methane reduction technology development and commercialization. MIIT is also the leading authority for regulating relevant methane-emitting industries such as the fertilizer industry.

**Ministry of Science and Technology (MOST):** MOST is involved in methane reduction science and technology development and innovation.

**Ministry of Finance (MOF):** MOF is involved in development and management of financial incentives for, among other things, coalbed methane extraction and utilization.

## **B. Government-Affiliated Research Institutions**

**Chinese Research Academy of Environmental Sciences (CRAES):** CRAES is a research institution affiliated with MEE. Under CRAES, a number of research institutes are relevant for methane reduction, including the Atmospheric Environment Research Institute, Water Environment Research Institute, and Solid Waste Pollution Control Technology Research Institute.

**Chinese Academy of Agricultural Sciences (CAAS):** CAAS is a national-level comprehensive research institution focused on agricultural sciences. In June 2021, CAAS’s Institute of Environment and Sustainable Development in Agriculture hosted a workshop on the role of agriculture in achieving China’s carbon peaking and carbon neutrality goals.<sup>7</sup>

**China Coal Information Institute (CCII):** CCII is a research entity affiliated with the Ministry of Emergency Management. CCII focuses on safe production and technology promotion for coal mining. It is one of the key research institutes for engagement on coalbed-methane strategies.

Other think tanks to keep in mind for broader Chinese leadership engagement and climate mitigation policy advisory purposes include the **Chinese Academy of Sciences’ Institutes of Science and Development**.

### C. Universities

**Tsinghua University** announced in June 2019 a collaboration with the Environmental Defense Fund (EDF) to “exchange technical and policy information that can build China’s capacity to reduce emissions of methane”<sup>8</sup> (see section on NGO and industry efforts below, for further details).

Other universities that lead work on sectoral sources of methane include **China Agricultural University**. The China Agriculture University’s College of Resources and Environmental Sciences covers methane-related research areas, including on the interaction between agriculture and climate change, as well as new technologies and products for waste management and utilization. The **China University of Mining and Technology**, which co-founded the China Coal Strategies Research Center in 2012 with China Coal Technology & Engineering Group, conducts leading work in areas such as mine safety and clean coal utilization.

Note that this is a limited collection of university examples. Other universities and research institutions that either have leading academic programs on methane-related topics or that are leading work on sectoral sources of methane emissions should be added to the list as appropriately experienced and qualified Chinese methane researchers are identified for future collaboration.

### D. NGO and Industry Efforts

**Environmental Defense Fund (EDF), Beijing, China:** EDF China and Tsinghua University launched a methane collaboration project in 2019, as well as China Methane Emissions Reduction Cooperation Platform.<sup>9</sup> According to EDF, this project is designed to support China’s policy-making and implementation efforts to curb methane emissions, through exchanges and capacity building on sound methane accounting methodologies, advanced mitigation technologies, and best regulatory practices. Tsinghua University hosts regular seminars, with support from EDF, to share best practices that countries and companies around the world are deploying to drive reductions in methane emissions. EDF China also hosted the annual China Methane Forum in 2020 and 2021. The 2021 China Methane Forum consists of six subforums with topics on agriculture-sector methane control, waste-sector methane control, satellite methane monitoring, methane monitoring technology for the oil and gas industry, methane monitoring for the coal industry, and investment and financing for methane control.<sup>10</sup>

**China Oil and Gas Methane Alliance:** On May 18, 2021, seven Chinese oil and gas companies,, including Sinopec Group, PetroChina Company Limited, China National Offshore Oil Corporation, PipeChina, Beijing Gas Group, China Resources Gas, and ENN Energy Holdings, jointly launched the China Oil and Gas Methane Alliance in Beijing.<sup>11</sup> Member companies under this alliance are committed to reduce the average methane emission intensity of natural gas production to less than 0.25% by 2025 and strive to reach the world's leading level by 2035.

**China City Gas Company Methane Emission Control Initiative:** On October 15, 2021, twelve city gas companies in China jointly signed the China City Gas Company Methane Emission Control Initiative to control methane emissions to help achieve China’s carbon peaking and carbon neutrality goals.<sup>12</sup> The twelve companies are committed to:

- firmly follow the path of green, low-carbon and sustainable development, and incorporate methane emission control into development plans for achieving the carbon peak and carbon neutrality goals;
- support the government's methane emission control policies, promote research and development and demonstrative application of methane emissions control technology, and pursue international convergence of methane emissions controls;
- actively strengthen gas-leak detection and repair, improve gas pipeline integrity management, and promote the construction of methane emission monitoring, reporting and verification (MRV) technology systems; and
- continue to identify and promote the industry's best practices in methane emission reduction, and improve transparency for public supervision.

It is important to note that these activities are taking place in the context of growing investment in gas infrastructure in China and associated emissions. China maintains the perspective of “gas-as-bridge fuel” and expects to continue to invest in gas infrastructure to meet growing demand (especially in buildings for heating and cooking).

### **3. Overview of China’s National Regulatory Requirements on Methane**

China’s national requirements on or related to methane emissions control are provided in national laws, regulations and mandatory emissions standards, as well as planning documents, including Five-Year Plans. In particular, China’s Outline of the 14th Five-Year Plan (2021-2025) for National Economic and Social Development and the Long-Range Objectives Through the Year 2035 (2021) (hereinafter referred to as the “14th Five-Year Plan”) provides that China will “strengthen the control of other greenhouse gases (GHGs) such as methane, HFCs, and PFCs.”<sup>13</sup> This prominent mention of methane in the 14<sup>th</sup> Five-Year Plan provides the policy authority for inclusion of detailed requirements for methane in environmental protection and GHG reduction plans that MEE, for example, is currently drafting. The summary below provides further details on China’s current regulatory initiatives relevant for the purpose of methane emission reductions.

## **A. Coal Mine Sector**

China's national regulatory system governing coal-mine emissions include national emissions standards.<sup>14</sup> Government financial incentives, such as subsidies and tax benefits, support these standards.<sup>15</sup> In 2008, the China Ministry of Ecology and Environment issued the Emissions Standard for Coal-bed Methane / Coal Mine Gas (Trial).<sup>16</sup> Notably, this standard includes a major exemption, indicating that coal mines are not required to carry out the flaring and utilization measures if the drained gas has a methane content <30%. Additionally, this standard only covers new and existing coal mines and is ambiguous as to its applicability to abandoned coal mines. Research has found that methane emissions from China increased by  $1.1 \pm 0.4$  Tg per year from 2010 to 2015 (largely attributable to coal mining), in spite of China's existing regulatory requirements on coal-bed methane flaring and utilization.<sup>17</sup> At the State Council press conference on 27 April 2021, MEE announced a plan to revise emission standards for coal-bed methane and coal mine gas.<sup>18</sup> It will be important to monitor whether China will strengthen this standard to capture the emissions reduction potential from coalbed methane.

During the 13<sup>th</sup> Five-Year Plan period of 2016-2020, China also set targets for coalbed methane and coal-mine gas extraction. The 13th Five-Year Plan for the Development and Utilization of Coalbed Methane (Coal-Mine Gas) (2016) provides that “by 2020, the coalbed methane (coal-mine gas) extraction volume shall reach 24 billion cubic meters, within which the production of on-ground coalbed methane shall reach 10 billion cubic meters with a utilization rate of over 90%; the extraction of coal-mine gas shall reach 14 billion cubic meters with a utilization rate of over 50%.”<sup>19</sup> It is also important for the Chinese government to assess the targets for the 13<sup>th</sup> Five-Year Plan period in support of the decision-making processes for the new targets and supporting mechanisms over the 14<sup>th</sup> Five-Year Plan period, in order to strengthen China's efforts and ambition to reduce methane emissions.

## **B. Oil and Gas Sector**

For the oil and gas sector, China did not provide quantitative targets for methane emissions reductions during the 13<sup>th</sup> Five-Year Plan period (2016-2020). However, China's 13<sup>th</sup> Five-Year Development Plan for Natural Gas (2016) did include promotion of recovery technologies for oilfield associated gas, strengthening of natural gas leakage detection, and reducing fugitive emissions of GHGs.<sup>20</sup> Additionally, the National Development and Reform Commission's Guiding Catalog for Industrial Restructuring includes, in the category of recommended technologies, recovery technologies for oilfield-associated gas and natural-gas leakage during storage and transportation, as well as extraction and utilization technologies for coalbed methane and coal-mine gas.<sup>21</sup>

## **C. Waste Sector**

China's Solid Waste Pollution Prevention and Control Law (2020) establishes the regulatory framework for the reduction, utilization, and harmless disposal of solid waste, including among other types of waste, household and livestock wastes, urban waste, and sludge.<sup>22</sup> Wastewater disposal is also subject to controls under the Water Pollution Prevention and Control Law (2017)

for discharges into water bodies.<sup>23</sup> In addition to the national statutes, China’s ministries have issued various regulations, standards, and other norm-creating documents to implement key mechanisms such as China’s household waste classification system.<sup>24</sup>

The provisions in the 14<sup>th</sup> Five-Year Plan on improving environmental infrastructure for waste treatment and strengthening environmental monitoring will contribute to methane emissions reductions from the waste sector. The 14<sup>th</sup> Five-Year Plan sets relevant targets such as reaching, by 2025, 90% harmless disposal of urban sludge and 25% sewage resource utilization in water-scarce cities at the prefectural level and above.<sup>25</sup>

#### **D. Agriculture Sector**

China’s national plans, including the 13th Five-Year Work Plan on GHG Emissions Control (2016), incorporate methane emission reductions from farmland and livestock management.<sup>26</sup> For example, China set national targets for achieving comprehensive utilization of over 75% of livestock and poultry manure and equipping over 95% of large-scale farms with manure treatment facilities by 2020.<sup>27</sup> The National Plan to Address Climate Change (2014-2020) also highlights emissions control measures including promoting low-emission and high-yielding rice plants, improving farming techniques, encouraging the use of organic fertilizers, developing large-scale livestock farming, and advancing the comprehensive use of crop straw and livestock manure.<sup>28</sup>

#### **4. Policy Opportunities for China to Strengthen Efforts on Methane Emissions Control**

There is growing political attention to methane emissions reduction in China as a means to achieve the country’s carbon neutrality goal before 2060. China’s Special Envoy for Climate Change Xie Zhenhua clarified in July 2021 that China’s carbon neutrality goal covers all GHGs, including CO<sub>2</sub> and non-CO<sub>2</sub> GHGs such as methane and HFCs.<sup>29</sup>

China’s actions on methane are not only critical to its own ability to help prevent disasters within China attributable to global heating, they are also vital to the world’s ability to mitigate such events. The Intergovernmental Panel on Climate Change (IPCC) Working Group I contribution to the Sixth Assessment Report (AR6) confirms the findings of the Global Methane Assessment<sup>30</sup> that “[s]ustained methane mitigation, wherever it occurs, stands out as an option that combines near- and long-term gains on surface temperature (*high confidence*) and leads to air quality benefits by reducing surface ozone levels globally (*high confidence*).”<sup>31</sup>

Against this backdrop, the following is a preliminary list of policy opportunities for China to strengthen efforts on methane emissions reduction in the near term, as well as to achieve China’s longer-term carbon neutrality goal. These policy opportunities are indicated below.

- Engage in and support global efforts to cut methane emissions within the next decade at bilateral and multilateral venues. This includes:
  - continuing to strengthen cooperation on methane to achieve the goals of the Paris Agreement, consistent with the outcomes of the Second EU-China High Level Environment and Climate Dialogue;<sup>32</sup> and

- joining the growing community of nations supporting the Global Methane Pledge and contribute to and benefit from associated methane abatement discussions and actions.<sup>33</sup>
- Recognize the urgency and importance of reducing methane emissions and incorporate methane emission reduction measures into China’s action plans for achieving carbon peaking before 2030 and carbon neutrality before 2060.
- Include ambitious methane reduction targets in its environmental-protection, GHG emissions-reduction, and energy-saving plans governing the 14<sup>th</sup> Five-Year period (2021-2025). Development of these plans, under the 14<sup>th</sup> Five-Year framework plan mentioned earlier, is underway.
- Promulgate more stringent national standards on methane emissions in the coal-mining sector, in coordination with China’s broader policies on controlling coal consumption and improving coal-mine safety. As mentioned above, one of the methane initiatives that MEE announced at a State Council press conference in late April 2021 is the plan to revise China’s emission standards for coalbed methane and coal-mine gas.<sup>34</sup>

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<sup>1</sup> United Nations Environment Programme & Climate & Clean Air Coalition (2021) [GLOBAL METHANE ASSESSMENT: BENEFITS AND COSTS OF MITIGATING METHANE EMISSIONS](#), 17 (“Mitigation of methane is very likely the strategy with the greatest potential to decrease warming over the next 20 years.”).

<sup>2</sup> United Nations Environment Programme & Climate & Clean Air Coalition (2021) [GLOBAL METHANE ASSESSMENT: BENEFITS AND COSTS OF MITIGATING METHANE EMISSIONS](#), 8 (“Reducing human-caused methane emissions is one of the most cost-effective strategies to rapidly reduce the rate of warming and contribute significantly to global efforts to limit temperature rise to 1.5°C. Available targeted methane measures, together with additional measures that contribute to priority development goals, can simultaneously reduce human-caused methane emissions by as much as 45 per cent, or 180 million tonnes a year (Mt/yr) by 2030. This will avoid nearly 0.3°C of global warming by the 2040s and complement all long-term climate change mitigation efforts. It would also, each year, prevent 255 000 premature deaths, 775 000 asthma related hospital visits, 73 billion hours of lost labour from extreme heat, and 26 million tonnes of crop losses globally.”).

<sup>3</sup> [The People’s Republic of China Second Biennial Update Report on Climate Change](#), 17 (December 2018) (“China’s CH<sub>4</sub> emissions in 2014 were 55.292 Mt, of which 24.757 Mt were from energy, accounting for 44.8%; 6 kt were from industrial processes; 22.245 Mt were from agriculture, accounting for 40.2%; 1.72 Mt were from LULUCF, accounting about 3.1%; 6.564 Mt were from waste, accounting for 11.9%.”).

<sup>4</sup> United States Environmental Protection Agency Office of Atmospheric Programs (October 2019) [GLOBAL NON-CO<sub>2</sub> GREENHOUSE GAS EMISSION PROJECTIONS & MITIGATION 2015-2050](#), 15 (“Taken together, the top 5 countries in terms of emissions represent 86% of all potential global abatement from coal mining in 2030. China is responsible for 69% of global abatement potential in coal mining (403 MtCO<sub>2</sub>e).”)

<sup>5</sup> Lin J., Khanna N., Liu X., Teng F., & Wang X. (2019) [China’s Non-CO<sub>2</sub> Greenhouse Gas Emissions: Future Trajectories and Mitigation Options and Potential](#), SCIENTIFIC REPORTS 9:16095 (“The waste and wastewater sectors offer additional potential for reducing methane and N<sub>2</sub>O emissions: by 2050 total methane emissions from those sectors can be reduced by 20%.”).

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<sup>6</sup> United State Environmental Protection Agency Office of Atmospheric Programs (October 2019) [GLOBAL NON-CO<sub>2</sub> GREENHOUSE GAS EMISSION PROJECTIONS & MITIGATION 2015-2050](#), 71 (“China and the United States are the top 2 emitters and collectively can mitigate 5% of total landfill emissions in 2030—27 MtCO<sub>2e</sub> in China and 8 MtCO<sub>2e</sub> in the United States. The United States already has a high rate of adoption of abatement measures, leading to a lower future mitigation potential.”)

<sup>7</sup> CAAS Institute of Environment and Sustainable Development in Agriculture (29 June 2021) [CAAS: Research is needed to achieve carbon peaking and carbon neutrality for the agriculture sector](#) [中国农科院：农业碳达峰碳中和科研要先行] (hyperlink to original Chinese).

<sup>8</sup> EDF (21 June 2019) [China signals methane is a new climate focus for curtailing energy emissions](#).

<sup>9</sup> EDF (21 June 2019) [China signals methane is a new climate focus for curtailing energy emissions](#).

<sup>10</sup> EDF (28 March 2021) [Methane in discussion: 2021 China Methane Forum closes with major report released](#) [共议甲烷：2021中国甲烷论坛闭幕并发布重磅报告] (hyperlink to original Chinese).

<sup>11</sup> ChinaNews.com (18 May 2021) [China Oil and Gas Enterprise Methane Emission Control Alliance is established to build an integrated methane control platform throughout the production, transportation and selling processes](#) [中国油气企业甲烷控排联盟成立 搭建“产运销”一体甲烷管控平台] (hyperlink to original Chinese).

<sup>12</sup> Environmental Defense Fund (15 October 2021) [Advocating Methane Emission Control, Beijing Gas Group Partners with City Gas Companies to Promote Green and Low-Carbon Energy Development](#) [倡导甲烷控排，北京燃气集团携手城燃企业，推动能源绿色低碳发展] (hyperlink to original Chinese).

<sup>13</sup> [Outline of the 14th Five-Year Plan \(2021-2025\) for National Economic and Social Development and the Long-Range Objectives Through the Year 2035](#) [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] (China) (2021) (hyperlink to original Chinese).

<sup>14</sup> [Emission Standard of Coal-bed Methane / Coal Mine Gas \(Trial\)](#) [煤层气（煤矿瓦斯）排放标准（暂行）] (Promulgated by China Ministry of Environmental Protection (now “Ministry of Ecology and Environment”) and the General Administration of Quality Supervision, Inspection and Quarantine, April 2, 2008; effective July 1, 2008) (hyperlink to original Chinese).

<sup>15</sup> [Opinions on Further Accelerating Coalbed Methane \(Coal Mine Gas\) Extraction and Utilization](#) [关于进一步加快煤层气（煤矿瓦斯）抽采利用的意见] (promulgated by the General Office of China State Council, Sept. 14, 2013; effective Sept. 14, 2013) (hyperlink to original Chinese).

<sup>16</sup> [Emission Standard of Coal-bed Methane / Coal Mine Gas \(Trial\)](#) [煤层气（煤矿瓦斯）排放标准（暂行）] (Promulgated by China Ministry of Environmental Protection (now “Ministry of Ecology and Environment”) and the General Administration of Quality Supervision, Inspection and Quarantine, April 2, 2008; effective July 1, 2008) (hyperlink to original Chinese).

<sup>17</sup> Miller S. M., *et al.* (2019) [China’s coal mine methane regulations have not curbed growing emissions](#), NATURE COMMUNICATIONS 10:303 (“We find that emissions from China rose by  $1.1 \pm 0.4$  Tg CH<sub>4</sub> yr<sup>-1</sup> from 2010 to 2015, culminating in total anthropogenic and natural emissions of  $61.5 \pm 2.7$  Tg CH<sub>4</sub> in 2015. The observed trend is consistent with pre-2010 trends and is largely attributable to coal mining. These results indicate that China’s CMM [coal mine methane] regulations have had no discernible impact on the continued increase in Chinese methane emissions.”).

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<sup>18</sup> IGSD (28 April 2021) [China Announces Further Steps Toward Reduction of Non-CO<sub>2</sub> Super Climate Pollutant Emissions](#).

<sup>19</sup> China National Energy Administration (24 November 2016) [13th Five-Year Plan for the Development and Utilization of Coalbed Methane \(Coal Mine Gas\)](#) [煤层气（煤矿瓦斯）开发利用“十三五”规划] (hyperlink to original Chinese).

<sup>20</sup> China National Development and Reform Commission (24 December 2016) [13<sup>th</sup> Five-Year Development Plan for Natural Gas](#) [天然气发展“十三五”规划] (hyperlink to original Chinese).

<sup>21</sup> [Guiding Catalog for Industrial Restructuring \(2019 Edition\)](#) [产业结构调整指导目录（2019年本）] (promulgated by China National Development and Reform Commission, Aug. 27, 2019; effective Jan. 1, 2020) (hyperlink to original Chinese).

<sup>22</sup> Gutu Feiwu Wuran Huanjing Fangzhi Fa (固体废物然环境防治法) [[Solid Waste Pollution Prevention and Control Law](#)] (China) (amended by the Standing Committee of the National People’s Congress, April 29, 2020; effective Sept. 1, 2020) (hyperlink to original Chinese).

<sup>23</sup> Shui Wuran Fangzhi Fa (水污染防治法) [[Water Pollution Prevention and Control Law](#)] (China) (amended by the Standing Committee of the National People’s Congress, June 27, 2017; effective June 27, 2017) (hyperlink to original Chinese).

<sup>24</sup> See e.g., [Circular on Fully Implementing Household Waste Classification in Cities at and above the Prefecture Level](#) [关于在全国地级及以上城市全面开展生活垃圾分类工作的通知] (promulgated by China Ministry of Housing and Urban-Rural Development, National Development and Reform Commission, Ministry of Ecology and Environment, Ministry of Education, Ministry of Commerce, Office of the Central Steering Committee for the Construction of Spiritual Civilization, Central Committee of the Communist Youth League of China, All-China Women’s Federation, and State Administration of Institutional Affairs, April 26, 2019; effective April 26, 2019) (hyperlink to original Chinese).

<sup>25</sup> [Outline of the 14th Five-Year Plan \(2021-2025\) for National Economic and Social Development and the Long-Range Objectives Through the Year 2035](#) [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] (China) (2021) (hyperlink to original Chinese).

<sup>26</sup> China State Council (27 October 2016) [13th Five-Year Work Plan on GHG Emission Control](#) [“十三五”控制温室气体排放工作方案] (hyperlink to original Chinese).

<sup>27</sup> [Opinions on Accelerating the Resource Utilization of Livestock and Poultry Farming Waste](#) [关于加快推进畜禽养殖废弃物资源化利用的意见] (promulgated by the General Office of China State Council, May 31, 2017; effective May 31, 2017) (hyperlink to original Chinese).

<sup>28</sup> China National Development and Reform Commission (19 September 2014) [National Plan to Address Climate Change \(2014-2020\)](#) [国家应对气候变化规划（2014-2020年）] (hyperlink to original Chinese).

<sup>29</sup> National Center for Climate Change Strategy and International Cooperation (27 July 2021) [Xie Zhenhua Details on the Development of 1+N Policy System as A Timeline and Roadmap to Achieve the Carbon Peaking and Carbon Neutrality Goals](#) [解振华详解制定 1+N 政策体系作为实现双碳目标的时间表、路线图] (hyperlink to original Chinese).

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<sup>30</sup> United Nations Environment Programme & Climate & Clean Air Coalition (2021) [GLOBAL METHANE ASSESSMENT: BENEFITS AND COSTS OF MITIGATING METHANE EMISSIONS](#), 17 (“Mitigation of methane is very likely the strategy with the greatest potential to decrease warming over the next 20 years.”).

<sup>31</sup> Intergovernmental Panel on Climate Change (2021), [Climate Change 2021: The Physical Science Basis](#), Masson-Delmotte V. P., et al.(eds.), 6:6-7.

<sup>32</sup> European Commission (10 October 2021) [Joint Press Communiqué following the Second EU-China High Level Environment and Climate Dialogue](#) (“Noticing the importance of mitigating non-CO<sub>2</sub> greenhouse gases, such as methane and hydrofluorocarbons, for the achievement of the goals laid down in the Paris Agreement, the participants agreed to continue discussions and strengthen cooperation on these issues.”).

<sup>33</sup> Countries currently supporting the Global Methane Pledge include many developed and developing countries that have collaborated with China in the past to help secure the Earth’s future against climate devastation. Countries supporting the Pledge aim to reduce global methane emissions at least 30 percent from 2020 levels by 2030, and develop and share information on best available inventory methodologies to quantify methane emissions, with a particular focus on high-emission sources. The Global Methane Pledge will be formally launched at the UN Climate Change Conference (COP 26) in November in Glasgow, United Kingdom. *See* United States Department of State (11 October 2021) [Joint U.S.-EU Statement on the Global Methane Pledge](#).

Through participation in the Global Methane Pledge, China will benefit from:

- continuing its leadership in preserving multilateralism and improving global governance through global collective action for addressing climate change (as supported by President Xi Jinping in [China-France Joint Declaration on Maintaining Multilateralism and Improving Global Governance](#) (Paris, France, 26 March 2019);
- building climate partnership to help ensure the implementation of the methane reduction strategy with the greatest potential to avoid warming over the next 20 years;
- linking China’s domestic policy actions on methane reduction to achieve the 2030 carbon peaking and 2060 carbon neutrality goals with China’s diplomatic engagement with other countries;
- accessing and sharing the latest developments on critical policy tools and technology solutions for methane emission reduction;
- understanding and potentially accessing funding and technical assistance available to developing countries for methane mitigation action under the Global Methane Pledge; and
- getting involved in methane data analysis, including for the development of a global methane inventory which is fundamental for scientific studies and policymaking involving methane.

<sup>34</sup> IGSD (28 April 2021) [China Announces Further Steps Toward Reduction of Non-CO<sub>2</sub> Super Climate Pollutant Emissions](#).