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The Interplay Between China's Climate Policy and Other Development Goals

I. Introduction

China has experienced rapid economic growth in the past several decades. Initially, this was a consequence of China's prioritization of economic development and industrialization over its other development goals. However, this rapid growth has left considerable pollution and environmental destruction in its wake. Shanghai, China's largest city, illustrates this stark conflict between economic advancement and environmental degradation. Shanghai boasts sparkling skyscrapers and a population of nearly 26 million,¹ yet its air is frequently choked with smog due to pollution from nearby industry, including steel production.² This paper explores the interplay between China's environmental policies and several conflicting development goals through the institutional lens of China's Five-Year Plans (FYPs). The National People's Congress, China's national government, has been issuing FYPs—which announce China's policy goals—at regular intervals since the 1950s.

II. Background

The past several decades have witnessed an increase in global emissions of greenhouse gases, chief among which is carbon dioxide. In what is known as the greenhouse effect, these gases trap heat in the atmosphere, increasing the planet's surface temperatures.³ Thus far, the greenhouse

¹ *Shanghai Population 2018*, World Population Review, worldpopulationreview.com/world-cities/shanghai-population.

² *Major China Regions See Smog Worsen, Adding to Fears Polluters are Moving South*, Reuters (Feb. 12, 2018), <http://www.reuters.com/article/us-china-pollution/major-china-regions-see-smog-worsen-adding-to-fears-polluters-are-moving-south-idUSKBN1FW0H3>.

³ *The Greenhouse Effect*, U.S. Env'tl. Prot. Agency (Mar. 3, 2016), <http://www3.epa.gov/climatechange/kids/basics/today/greenhouse-effect.html>.

effect has led to a 1.2°C rise in average global temperatures since the late 1800s.⁴ Moreover, it has already precipitated glacial melting, global sea level rise, changes in the frequency of extreme weather effects, an increased spread of tropical diseases, and more alarming outcomes.⁵ As it emits more and more greenhouse gases, China plays an increasingly larger role in furthering these global trends.

A. China's Contribution to Global Climate Change

In 2014, China produced 30 percent of the world's carbon dioxide emissions; meanwhile, the United States, the second-highest emitter of carbon dioxide, produced 15 percent.⁶ In 2017, an uptick in Chinese coal production drove global carbon dioxide emissions to increase by 2 percent, after global emissions had hardly risen from 2014–2016.⁷ As of 2005, China used 10 percent of the total energy consumed globally, and was projected to consume 15 percent of the world's total energy by 2025.⁸

Changes in China's energy consumption have a significant impact on global greenhouse gas emissions because China derives 74.8 percent of its electricity from coal, oil, and natural gas. These three energy resources, known as “fossil fuels,” release carbon dioxide when they are

⁴ Yale Environment 360, *2016 Temperatures Measure 1.2 Degrees C Above Pre-Industrial Levels*, E360 Digest (Nov. 14, 2016), <http://perma.cc/DK2X-UXQC> (citing World Meteorological Association, *Press Release: Provisional WMO Statement on the Status of the Global Climate in 2016* (Nov. 14, 2016), <http://perma.cc/H568-799E>).

⁵ International Panel on Climate Change, *Climate Change 2014 Synthesis Report Summary for Policymakers* (2014), <http://perma.cc/J9ER-T6MU>.

⁶ *Emissions by County*, Env'tl. Prot. Agency, <http://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data#Country>.

⁷ Craig Welch, *Carbon Emissions Had Leveled Off. Now They're Rising Again*, National Geographic (Nov. 13, 2017), <http://news.nationalgeographic.com/2017/11/climate-change-carbon-emissions-rising-environment>.

⁸ Warwick J. McKibbin, *Environmental Consequences of Rising Energy Use in China*, Brookings (Dec. 1, 2005), <http://www.brookings.edu/research/environmental-consequences-of-rising-energy-use-in-china>.

burned to create energy.⁹ China’s increasing carbon dioxide emissions will likely prevent the world from meeting its 2017 goal—outlined in the Paris Agreement—of limiting the rise in global average surface temperatures to 2°C above preindustrial values.¹⁰

B. Recent Global Climate Policy

In the 2016 Paris Agreement, 178 countries published “nationally determined contributions,” which outlined each of their intended reductions in greenhouse gas emissions, with the ultimate goal of limiting global temperature rise to 2°C.¹¹ In its nationally determined contribution, China pledged to peak its carbon dioxide emissions by 2030, and to “increase the share of non-fossil fuels in primary energy consumption to around 20 [percent],” among other goals.¹² A recent study showed that, if China sticks to its target emission reductions under the Paris Agreement, which would involve annual carbon dioxide emission reductions of 4 percent, China could prevent 94,000 deaths and avoid \$339 billion in healthcare costs through 2030.¹³

III. China’s Environmental Policies

Examining China’s FYPs sheds light on the trajectory of China’s environmental policy throughout the past half-century. By setting forth many goals that are not environmental in nature, these FYPs also illustrate how China’s other priorities have conflicted, and might still

⁹ Kelly Levin, *Carbon Dioxide Emissions from Fossil Fuels and Cement Reach Highest Point in Human History*, World Resources Institute (Nov. 22, 2013), <http://www.wri.org/blog/2013/11/carbon-dioxide-emissions-fossil-fuels-and-cement-reach-highest-point-human-history>.

¹⁰ See *The Paris Agreement*, United Nations Climate Change, <http://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>.

¹¹ *Id.*

¹² National Development & Reform Commission of China, *Enhanced Actions on Climate Change: China’s Intended Nationally Determined Contributions* (June 30, 2015), <http://www4.unfccc.int/Submissions/INDC/Published%20Documents/China/1/China's%20INDC%20-%20on%2030%20June%202015.pdf>.

¹³ Jennifer Chu, *Study: Health Benefits Will Offset Cost of China’s Climate Policy*, MIT News (Apr. 23, 2018), <http://news.mit.edu/2018/study-health-benefits-will-offset-cost-china-climate-policy-0423>.

conflict, with its goals in the environmental arena. This conflict is especially apparent in China's climate policy. As in every nation, economic growth in China has been largely powered by fossil fuels, so the achievement of China's economic goals could plausibly hinder China's ability to meet its climate-related aspirations.

A. China's Institution of FYPs

Thus far, China has proven to be one of the world's fastest-developing economies. To a large extent, China's growth is planned, assisted, and monitored by its central government. The National People's Congress periodically releases FYPs, which outline a variety of benchmarks that China intends to meet during each five-year period. Whereas these plans are not legally binding, they often inform the development of China's binding laws and regulations.¹⁴ Additionally, since 2011, China's FYPs have distinguished between binding and expected targets: "local officials must meet [binding targets] in order to advance their career," whereas expected targets are more optional.¹⁵ These plans trace changes in China's environmental goals—which increased in quantity and stringency over time—as well as China's overall development goals, which often stand in direct conflict with its environmental aspirations.

B. China's Early FYPs

The National People's Congress' first FYP was designed to cover the period from 1953–57. The government's goals for this period included increasing the state's ownership of businesses that were in the private sector, increasing the share of industry relative to agriculture in the

¹⁴ Barbara A. Finamore and Tauna M. Szymanski, *Taming the Dragon Heads: Controlling Air Emissions From Power Plants in China—An Analysis of China's Air Pollution Policy and Regulatory Framework* (2002), <http://www.nrdc.org/sites/default/files/tdh.pdf>.

¹⁵ Katherine Koleski, *The 13th Five-Year Plan*, U.S.-China Economic and Security Review Commission (Feb. 14, 2017), http://www.uscc.gov/sites/default/files/Research/The%2013th%20Five-Year%20Plan_Final_2.14.17_Updated%20%28002%29.pdf.

Chinese economy, and increasing the output of iron, steel, cement, and food crops, among other goods. One of China's goals involved drastically expanding the country's coal production, from 31 million metric tons in 1949 to a planned 113 million metric tons in 1957. China's first FYP not only failed to communicate goals for environmental preservation, but also called for a near-quadrupling of China's coal production within the course of eight years.¹⁶ China's second FYP similarly reflected an intent to increase its industrial and agricultural development, without declaring any environmental goals.¹⁷

C. FYPs Addressing Environmental Goals

China's Third through Eighth FYPs resembled its First and Second FYPs in setting forth economic and social goals without referring to natural resources or environmental quality. It was not until China's Ninth FYP that this institution began articulating environmental goals, beginning with intended pollution reductions and moving toward targets for mitigating climate change by reducing greenhouse gas emissions.

1. China's Ninth FYP

The Ninth FYP, which extended from 1996–2000, is notable for introducing China's goal of "total emissions control." This involved setting forth quantitative emission reduction goals for 12 different pollutants across China's provinces. Under this policy, some provinces and cities were permitted to increase their emissions up to a certain limit, whereas others were instructed to reduce their emissions.

2. China's Tenth FYP

¹⁶ Theodore Shabad, *Communist China's Five Year Plan*, 24 *Far Eastern Survey* 189 (1955).

¹⁷ *The Second Five-Year Plan (1958–1962)*, www.china.org.cn/english/MATERIAL/157606.htm.

China's Tenth FYP, which covered the period from 2001–2005, announced that China would continue its policy of sustainable development, through facilitating family planning programs, protecting natural resources, and strengthening environmental protection. More specifically, the FYP expressed China's desire to create reserves for minerals, conserve marine resources, increase recycling programs, protect forests and grasslands from desertification, reduce pollution, and decrease the incidence of natural disasters.¹⁸ With regard to emissions, China declared its goal of reducing sulfur dioxide emissions—which contribute to acid rain and human health issues, but not to climate change—by 10 percent below 2000 levels by 2005.¹⁹

3. China's Eleventh FYP

In National Development and Reform Commission Chairman Ma Kai's announcement on the Eleventh FYP, Kai referenced the "increasingly prominent contradiction between economic growth and resources and environment constraints." In light of that contradiction, this FYP called for improving environmental protection, better managing China's resources, and "build[ing] a cycling and sustainable national economic system featuring low input, high output, low consumption and emission."²⁰ Specifically, the Eleventh FYP called for a decrease in China's energy intensity—its energy output as a fraction of its GDP—of 20 percent by 2010, the end of the eleventh five-year period.

China designed its Top 1,000 Energy-Consuming Enterprises program in an effort to meet the goals outlined in its Eleventh FYP. This program set energy consumption targets for China's

¹⁸ Zhu Rongji, *Report on the Outline of the Tenth Five-Year Plan for National Economic and Social Development*, (Mar. 5, 2001), www.gov.cn/english/official/2005-07/29/content_18334.htm.

¹⁹ Finamore and Szymanski, *Taming the Dragon Heads*, *supra* note 14; see also *Sulfur Dioxide Basics*, Env'tl. Prot. Agency, <https://www.epa.gov/so2-pollution/sulfur-dioxide-basics> for an overview of sulfur dioxide pollution.

²⁰ Ma Kai, *The 11th Five-Year Plan: Targets, Paths and Policy Orientation*, National Development and Reform Commission, People's Republic of China (Mar. 23, 2006), http://en.ndrc.gov.cn/newsrelease/200603/t20060323_63813.html.

1,000 largest industrial entities,²¹ which consumed 33 percent of the country's energy in 2004. A 2010 evaluation of the program concluded that it would likely bring China only 10–25 percent of the way toward its goal of a 20 percent reduction in energy intensity by 2010.²² Another study of the program, discussed at a Harvard-China Project event in 2018, revealed “little effects of the Top-1000 policy on firms’ energy-saving behavior” and “insignificant productivity changes in the firms covered by the Top-1000 program.”²³ Regardless of this ostensible failure of the Top 1,000 Program to meet its goals, China reportedly ended this five-year period with a 19.1 percent reduction in its energy intensity, nearly meeting its goal of 20 percent.²⁴

In 2009, during the period of the Eleventh FYP, China announced that it intended to decrease its carbon intensity 40-45 percent below 2005 levels by 2020. This announcement was part of the Copenhagen Accord, a set of nonbinding emission-reduction pledges made by most countries. In the Copenhagen Accord, China also pledged to acquire 15 percent of its primary energy consumption from non-fossil fuels by 2020, and to increase its forest coverage.²⁵

4. China's Twelfth FYP

China's Twelfth FYP continued the Eleventh FYP's trend of communicating specific metrics for improving environmental quality. By the end of the Twelfth five-year period, which extended

²¹ Hongyou Lu, et al., *Energy Assessments [sic] under the Top 10,000 Program – A Case Study for a Steel Mill in China*, European Council for an Energy Efficient Economy (June 2014), <http://china.lbl.gov/publications/energy-assessments-under-top-10000>.

²² Lynn Price, Xuejun Wang and Jiang Yun, *The Challenge of Reducing Energy Consumption of the Top-1000 Largest Industrial Enterprises in China*, 38 *Energy Policy* 1 (2010).

²³ Cao Jing, *China's Top 1000 and 10,000 Energy-Consuming Enterprises Program: Effectiveness, Compliance, and Lessons*, Harvard-China Project on Energy, Economy and Environment (Jan. 31, 2018), <http://chinaproject.harvard.edu/events/cao20180131>.

²⁴ Joanna Lewis, *Energy and Climate Goals of China's 12th Five-Year Plan*, Pew Center on Global Climate Change (Mar. 2011), <http://www.c2es.org/site/assets/uploads/2011/03/energy-climate-goals-chinas-twelfth-five-year-plan.pdf>.

²⁵ *China's Copenhagen Accord Pledge*, International Energy Agency (2010), <http://www.iea.org/policiesandmeasures/pams/china/name-42665-en.php>.

from 2011–2015, the Chinese government intended for non–fossil fuel sources of energy to comprise 11.4 percent of China’s primary energy consumption; China’s water consumption per unit of value-added industrial output to decrease by 30 percent; its energy consumed per unit of GDP to decrease by 16 percent; its carbon dioxide emissions per unit of GDP to decrease by 17 percent; and its forest coverage to increase to 21.66 percent.²⁶ Chinese reports showed that the government mostly met these goals. The Chinese government reportedly exceeded its goal for reducing its energy intensity, reaching an 18.2 percent decrease in energy intensity rather than the aspirational 16 percent decrease in this metric.²⁷

In its Twelfth FYP, the National People’s Congress also announced its desire to form a market for trading carbon.²⁸ Implementing a cap-and-trade system generally involves setting a limit on overall emissions in a certain geographic area, allocating permits—which each allow a given quantity of pollution—among the entities in that area, and enabling those entities to trade permits amongst themselves. If China does implement a cap-and-trade system to reduce carbon emissions, it would be joining the ranks of several other countries and U.S. states with programs of that nature.²⁹

5. China’s Thirteenth FYP

²⁶ *Key Targets of China’s 12th Five-Year Plan*, National People’s Congress (Mar. 5, 2011), www.gov.cn/english/2011-03/05/content_1816822.htm.

²⁷ *The 13th Five-Year Plan*, U.S.–China Economic and Security Review Commission (Feb. 14, 2017), http://www.uscc.gov/sites/default/files/Research/The%2013th%20Five-Year%20Plan_Final_2.14.17_Updated%20%28002%29.pdf.

²⁸ Lewis, *Energy and Climate Goals*, *supra* note 24.

²⁹ See, e.g., *Cap and Trade: Program Overview*, Ontario (June 2, 2016), <https://www.ontario.ca/page/cap-and-trade-program-overview> (describing Ontario’s cap-and-trade program); European Commission, *EU Emissions Trading System (EU ETS)*, https://ec.europa.eu/clima/policies/ets_en (explaining cap-and-trade in the European Union); and *Cap-and-Trade Program*, California Air Resources Board (May 23, 2018), <https://www.arb.ca.gov/cc/capandtrade/capandtrade.htm> (setting out the rules governing California’s cap-and-trade system).

China's Thirteenth FYP, which extends from 2016–2020, declared a policy of green growth and set forth 10 binding targets related to environmental protection, out of a total of 25 targets. These targets included at least an 80 percent increase in the ratio of good air quality days in large cities; improvements in surface water quality and water consumption; and an increase in forest coverage.

The FYP also included several climate-related goals. First, China aims to decrease its energy intensity by 15 percent below 2015 levels, and to decrease its carbon intensity—or carbon emissions per unit of GDP—by 18 percent below 2015 levels. China also now has its first-ever cap on total energy use during the FYP period: it cannot burn more than five billion tons of coal within these five years. China is also aiming to derive 15 percent of its national energy consumption from green sources, and to invest billions of yuan in hydropower, wind, solar, biomass, biogas, and geothermal sources of energy generation. The government pledged to support green industries, including clean energy vehicles and energy-saving technologies. One challenge that remains, apart from challenges in enforcement, is that infrastructure is still being built in China that supports fossil fuel combustion. For example, China approved the construction of 210 coal plants in 2015 alone.³⁰

The FYP also set out aspirational percent reductions for several specific pollutants, including sulfur dioxide, ammonia nitrogen, and nitrous oxides. The Thirteenth FYP imposed slightly stricter restrictions on those pollutants than did the Twelfth FYP, which was the first FYP to address those specific pollutants.³¹

³⁰ Koleski, *The 13th Five-Year Plan*, *supra* note 15.

³¹ *Id.*

IV. Other Environmental Institutions and Developments

Over time, China has amassed a range of statutes addressing climate change and other environmental issues, and has experienced unmatched growth in its renewable energy industry. These advancements can assist China in meeting the environmental goals in its FYPs.

A. China's Legislation on Climate Change

China's first concrete action on the environment can be traced back to 1974, when the National People's Congress amended the Chinese Constitution to add a provision saying that "the state protects and improves the living environment and the ecological environment, and prevents and remedies pollution and other public hazards." Today, a set of laws govern China's environmental quality, including the Environmental Protection Law, which requires certain departments of the federal, provincial, and municipal governments to issue Environmental Impact Assessments in planning and construction decisions; the Water Pollution Law, which sets water quality standards for different categories of surface water; the Air Pollution Law, which designates air quality standards for certain pollutants and facilities; and the Circular Economy Law, which aims to support reduction, reuse and recycling in the process of production, circulation and consumption of goods; among many other laws.³²

China has also put programs in place to promote green businesses. These programs include a green credit policy, which limits businesses' access to financial credit if they violate environmental laws; a green trade policy, which bans exporters that violate environmental protection laws; a green security policy, which imposes requirements on environmentally

³² Charles M. McElwee, Environmental Law in China: Mitigating Risk and Ensuring Compliance (Oxford Univ. Press, 2011)

harmful companies that want to list their securities on an exchange; and a mandatory liability insurance requirement for companies.³³

At the federal level, the Ministry of Environmental Protection (MEP) is primarily responsible for implementing China's environmental policies, but other agencies with a role in environmental protection include the Ministry of Water Resources, the Ministry of Land and Resources, the State Oceanic Administration, and the State Forestry Administration.³⁴

B. Environmental Enforcement in China

The Twelfth FYP provided for the installation of over 1,400 air quality monitoring stations throughout China. The Thirteenth FYP called for an increase in data from sources such as ground pollution surveys and a water monitoring system, in order to assist the government in monitoring pollution and enforcing environmental laws.³⁵

According to the U.S.–China Economic and Security Review Commission, lax enforcement will pose a major challenge to China's goal of reaching the Thirteenth FYP's benchmarks. According to the Commission's report, local government officials are more likely to be promoted if they concentrate on improving economic conditions, and they often fear that implementing environmentally protective measures will reduce jobs and economic growth in their respective localities.³⁶

China's MEP has the authority to enforce its environmental laws by distributing inspection teams across China and placing fines on polluters whose emissions exceed lawful limits. May

³³ *Id.*

³⁴ *Id.*

³⁵ Koleski, *The 13th Five-Year Plan*, *supra* note 15.

³⁶ *Id.*

2016 stands out as an illustration of the potential consequences of flouting environmental laws: in that month alone, the MEP levied over 45.3 million yuan worth of fines, and required 230 plants to cease production due to emissions violations. However, even widespread enforcement measures such as those might fail to achieve the FYPs' goals. As Ma Jun, director of the Institute of Public and Environmental Affairs, explained, the government does not know "if in reality the fine will be paid," as polluting "is still cheaper than the cost of compliance," and many polluters "are the darlings of local government, which gives them protection."³⁷

C. China's Recent Shift Toward Renewables

Although China is the chief emitter of greenhouse gases, the country has recently made headlines for adopting renewable energy technologies at unprecedented rates. In January of 2017, the Chinese government unveiled a directive calling for the cancellation of 103 coal-fired power plants that were under construction,³⁸ and announced its intention to invest 2.5 trillion yuan in the renewable energy sector.³⁹ Last year, China boasted 3.5 million jobs in the renewable energy sector and exported half of the world's wind turbines and two-thirds of the world's solar panels.⁴⁰

China is now home to a range of clean energy innovations. Near Huainan city lies the world's largest floating solar farm: a collection of solar panels situated on a lake, which sits atop a flooded coal mine. This farm's 166,000 solar panels generate enough electricity to power an

³⁷ *China to Launch Environmental Probes in Eight More Provinces*, Reuters (July 8, 2016) <http://www.reuters.com/article/us-china-environment-idUSKCN0ZO0K3>.

³⁸ Michael Forsythe, *China Cancels 103 Coal Plants, Mindful of Smog and Wasted Capacity*, The New York Times (Jan. 18, 2017), <http://www.nytimes.com/2017/01/18/world/asia/china-coal-power-plants-pollution.html>.

³⁹ Sherisse Plam and Matt Rivers, *China Is Crushing the U.S. in Renewable Energy*, CNN Tech (July 18, 2017), <http://money.cnn.com/2017/07/18/technology/china-us-clean-energy-solar-farm/index.html>.

⁴⁰ *Id.*

entire town.⁴¹ Another recent innovation took the form of two solar-powered roads, one in Zhejiang Province and one in the city of Jinan. These roads were equipped with a layer of silicon solar panels covered by a layer of transparent concrete, which protected the panels from the cars driving over them.⁴²

However, China is wasting a substantial proportion of the renewable energy that it recently put in place. According to *Time Magazine*, China wastes 21 percent of the electricity generated by its wind turbines and 11 percent of the electricity generated by its solar power sources.⁴³

V. Conflicting Development Goals

Beginning with China's first FYP, these policy pronouncements have displayed a focus on economic growth and expanding Chinese industries. Even China's recent FYPs that began emphasizing environmental protection also call for many goals whose resolution could conflict with such protection. The Thirteenth FYP provides a case study in a range of goals that, if achieved, could directly impede China's ability to meet its greenhouse gas emission targets. These goals include shifting to higher value-added manufacturing, increasing urbanization, promoting openness, and increasing the country's standard of living.

China's goal of shifting resources toward higher value-added manufacturing involves promoting the development of Internet services, e-commerce, biomedical advances, and other high-tech instruments.⁴⁴ A shift from more of an industrial economy to more of a service-based economy would dovetail with China's emission-reduction goals if it involves a reduction in high-

⁴¹ Charlie Campbell, *How China Floated to the Top in Solar*, Time, time.com/china-massive-floating-solar-field.

⁴² Jonathan Kaiman, *China's Heralded 'Solar Highway' Closed After Thieves Stole One of the Panels*, Los Angeles Times (Jan. 9, 2018), www.latimes.com/world/asia/la-fg-china-solar-theft-20180109-story.html.

⁴³ *Id.*

⁴⁴ Koleski, *The 13th Five-Year Plan*, *supra* note 15.

emitting facilities, which tend to be associated with low-value manufacturing processes.⁴⁵

Already, a decrease in energy-intensive, low-value manufacturing caused “the growth of carbon emissions generated in the manufacture of Chinese exports [to have] slowed or reversed.”⁴⁶

China aims to achieve its goal of promoting urbanization through increasing urban housing units and providing individuals with incentives to move from rural areas to cities.⁴⁷ The effect of urbanization on greenhouse gas emissions is ambiguous. Globally, increasing urbanization is projected to “contribute more than [a] 25 [percent] increase” in greenhouse gas emissions in the twenty-first century. However, on a more regional scale, urbanization can reduce emissions “by improving the efficiency of public infrastructure.” In China, a recent study reveals a positive elasticity—which means that an increase in urbanization corresponds with a rise in emissions—in some areas, and a negative elasticity—or a reduction in emissions accompanying an increase in urbanization—in others. The former trend tends to arise when rural areas are less developed and emit relatively few greenhouse gases. The latter trend arises in more developed areas, in which cities tend to have energy-efficient public infrastructure.⁴⁸

China’s goal of promoting openness involves increasing China’s exports, increasing imports in certain areas, and promoting the “One Belt, One Road” initiative. This initiative aims to facilitate the transport of natural resources across the nation, which will assist in developing areas within China’s interior.⁴⁹ Given that both the transportation of goods and the increase of

⁴⁵ Jing Meng, et al., *The Rise of South-South Trade and Its Effect on Global CO₂ Emissions*, 9 *Nature Comm.* 1 (2018).

⁴⁶ Michael Taylor, *China, India Outsource Emissions, Risking Climate Goal – Study*, Reuters (May 14, 2018), <http://news.trust.org/item/20180514114558-1sio1>.

⁴⁷ Koleski, *The 13th Five-Year Plan*, *supra* note 15.

⁴⁸ Yonghong Liu, *The Impact of Urbanization on GHG Emissions in China: The Role of Population Density*, 157 *J. Cleaner Prod.* 299 (2017).

⁴⁹ Katherine Koleski, *The 13th Five-Year Plan*, *supra* note 15.

living standards entail more greenhouse gas emissions, achieving these goals is likely to directly undermine China's efforts to attain the climate goals in its Thirteenth FYP.

Lastly, China intends to reach its goal of increasing living standards by providing subsidies to individuals living in extreme poverty in both rural and urban areas. China also intends to relax its family planning policy, known as the "one child policy," which is predicted to increase the nation's population from 1.38 billion in 2015 to approximately 1.42 billion in 2020.⁵⁰ The combination of these policies is likely to hinder China's ability to reach its climate goals. Increased living standards tend to trigger increased emissions, and a higher population will necessarily consume more resources and use more energy than China's current population. As long as a portion of China's energy continues to derive from fossil fuel sources, these changes would cut against the Thirteenth FYP's greenhouse gas emission–reduction goals.

VI. Conclusion

Entire volumes could be written on the intricacies of China's FYPs, the policies and laws that the recent FYPs are likely to motivate, and the projected environmental impacts of these policies. This paper provided a cursory overview of the institution of FYPs and a brief illustration of how the goals outlined in these FYPs can be inherently contradictory. In any nation, the achievement of certain goals will necessarily obstruct the attainment of others. Nevertheless, despite its ubiquity, it is important for China to keep this inherent contradiction in mind when charting the path of its future development.

⁵⁰ *Id.*