
AN OPPORTUNITY THAT SHOULD NOT BE MISSED: APPLYING CHINESE POLICY THAT PROMOTES EFFICIENT AIR CONDITIONING TO COUNTRIES THAT NEED IT

By Xiaopu SUN, Houfu YAN, Shekun WANG, Tad FERRIS*

Do not impose on others what you yourself do not desire. (己所不欲，勿施于人)

--- Confucius

TABLE OF CONTENTS

I. INTRODUCTION	2
II. COOLING INDUSTRY, CLIMATE CHANGE, AND CHINA’S UNIQUE ROLE.....	2
1. The Cooling Industry Presents an Opportunity for Climate Change Mitigation.....	2
2. China’s Unique Role in the Cooling Industry and Its Response to Market Challenges from the Pandemic	3
III. CHINA’S SAME-LINE POLICY CAN ASSIST THE GLOBAL PROMOTION OF EFFICIENT AND CLIMATE-FRIENDLY ACS.....	3
IV. APPLYING THE SAME-LINE POLICY TO EXPORTED ACS IS IN CHINA’S AND THE WORLD’S INTERESTS	5
1. The Same-Line Policy Makes China’s Green Development and Developing-Country Policy Priorities More Effective	5
A. <i>Green BRI and BRI Green Cooling Policies.....</i>	<i>5</i>
B. <i>South-South Climate-Change Cooperation Policies.....</i>	<i>5</i>
2. The Same-Line Policy Reflects a Strategic Move to Accelerate Industry Transition and Achieve Made-in-China 2025 Targets.....	6
3. The Same-Line Policy Helps Control Business Risks Associated with AC Exports	7
V. LEGAL AND POLICY RECOMMENDATIONS TO REALIZE THE BENEFITS OF APPLYING THE SAME-LINE POLICY TO EXPORTED COOLING EQUIPMENT	7
1. Incorporate the Same-Line Policy into the Green Development of BRI and South-South Climate-Change Cooperation	7
2. Amend Chinese Statutes to Prohibit Production and Export of ACs That Do Not Conform to China’s Minimum Energy Performance Standards	8
3. Accelerate Industry Transition through Government Policy and Financial Support	9
VI. CONCLUSION AND TAKEAWAYS FOR POLICYMAKERS AND STAKEHOLDERS	9

* Xiaopu Sun is Senior China Counsel at the Institute for Governance & Sustainable Development (IGSD). Houfu Yan is a professor at Beijing Normal University Law School, China. Shekun Wang is a professor at Northwest University Law School, China. Tad Ferris is Senior Counsel at IGSD. The authors are grateful for the edits and contributions of Dr. Gabrielle Dreyfus, IGSD Senior Scientist, Laura Bloomer, IGSD Legal Fellow, and Trina Thorbjornsen, IGSD Executive Assistant.

I. INTRODUCTION

As the world warms, the growing use of air conditioners (“ACs”) and other cooling equipment becomes essential for human comfort and public health. In addition, cooling-equipment energy and refrigerant consumption also presents tremendous climate mitigation opportunities. The most efficient ways to capture much of the climate benefit lie in the hands of a small number of AC manufacturing and exporting countries, including China, which manufactures over 80% of global room ACs with a large amount of this cooling equipment destined for export.¹ This article highlights one of China’s policies, the “Same Line, Same Standard and Same Quality” policy (“Same-Line Policy” or “Policy”), intended to support economic recovery from the COVID-19 pandemic and address the export challenges that have negatively affected Chinese industries and products on the global market.² Through the Policy, the Chinese government encourages manufacturers of consumer and industrial products to sell products within China that were produced for markets outside China according to standards exceeding those for products produced for the Chinese market. The Policy, and the associated information and business-platforms that the government established to ensure policy success, aim to improve the domestic economic situation through consumption of products previously destined for export markets but which are not being sold because of the economic downturn during the pandemic. Policies like these, representing a course of action that China’s leadership endorses, can drive changes in Chinese law, including changes that address loopholes in the law that allow environmentally harmful activities to continue. The Same-Line Policy provides an opportunity for global climate-mitigation, public health, and other benefits that should not be missed.

In this article, Section II provides background on how China’s cooling industry situation presents a unique opportunity for climate change mitigation. Section III details a new climate strategy which applies the Same-Line Policy to cooling equipment, such as ACs (including energy-consuming AC components) exported by Chinese companies. In particular, the strategy will raise the efficiency of exported ACs to at least meet China’s minimum energy efficiency standards, particularly the products destined for importing countries that either lack any minimum

energy performance standards for such products or have minimum energy performance standards which are lower than those applied to such products in China. Section IV explains how this strategy fits into China’s broader policy priorities such as development of a green “Belt and Road Initiative” (BRI) and promotion of “Made in China 2025.” The adoption of this strategy would eventually aid the AC industry in overcoming global trade barriers and advance its technical innovation. Section V identifies legal and policy options that would enable China’s application of its Same-Line Policy to AC exports. Section VI concludes with a set of key takeaways for policymakers and stakeholders.

II. COOLING INDUSTRY, CLIMATE CHANGE, AND CHINA’S UNIQUE ROLE

1. THE COOLING INDUSTRY PRESENTS AN OPPORTUNITY FOR CLIMATE CHANGE MITIGATION

Cooling equipment contributes to climate change both directly from high global-warming-potential (GWP) refrigerants and indirectly from the emissions associated with generating electricity to power ACs and refrigerators in buildings and transport.³ Coordinated international action on energy-efficient and climate-friendly cooling could avoid as much as 460 billion tonnes of greenhouse gas emissions – roughly equal to eight years of global emissions at 2018 levels – over the next four decades.⁴ Worldwide, doubling the energy efficiency of ACs could save up to 2.9 trillion USD by 2050 in reduced electricity generation, transmission, and distribution costs alone.⁵ Action on AC energy efficiency would bring many other benefits, such as increased access to life-saving cooling, improved air quality, and reduced food loss and waste.⁶

Product energy efficiency programs, including minimum energy performance standards and labeling requirements, are the primary national policies governing energy efficiency levels for ACs sold on a country’s market. Over ninety countries and regions around the world have implemented such energy efficiency policies, including China.⁷ However, a significant number of countries in Africa, Asia, Latin America, and the Caribbean still lack any form of energy efficiency requirements.⁸ These countries are significant Chinese export markets.⁹ Efforts to raise the minimum energy performance standards for ACs can

reduce CO₂ emissions by forty-nine billion metric tons over 2020-2050 globally.¹⁰ China's latest room AC minimum energy performance standards went into effect as of July 1, 2020.¹¹ China's Green and High-Efficiency Cooling Action Plan provides the target of 30% improvement that calls for action to further raise these standards.¹² China accepted the Kigali Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer on June 17, 2021.¹³ The hydrofluorocarbon phasedown required under the Kigali Amendment also provides the opportunity for simultaneous refrigerant transition and cooling efficiency improvement.

2. CHINA'S UNIQUE ROLE IN THE COOLING INDUSTRY AND ITS RESPONSE TO MARKET CHALLENGES FROM THE PANDEMIC

China has a unique role to play in the cooling sector as the world's largest producer, consumer, and exporter of room ACs.¹⁴ In 2019, China's room AC production reached 218.662 million units.¹⁵ China exported more than fifty million room ACs per year during 2017-2019.¹⁶ In 2019, room ACs exported by China's Midea Group alone exceeded twenty million units.¹⁷ Gree, another major Chinese cooling equipment manufacturer, exported over ten million AC units in 2019.¹⁸

However, the overseas popularity of Chinese AC brands does not match its huge export volume. 68% of ACs exported by Chinese manufacturers are not labeled as Chinese brands.¹⁹ This has been a long-lasting model for Chinese manufacturers to quickly expand profits from exported products. However, this approach inevitably sacrificed opportunities to build positive awareness of Chinese brands on the global market.²⁰ With this backdrop in mind, China's cooling industry has gradually realized that it is critical for its global competitiveness to focus on the strength of the brand and quality of the products.²¹

The global pandemic in 2020 has presented additional challenges to Chinese manufacturers in both their home and export markets. In response, these manufacturers are resorting to various policy strategies, including promoting sales of products *within China* that were produced for markets *outside China* with standards exceeding those of products produced for the Chinese market, consistent with China's Same-Line Policy.²²

III. CHINA'S SAME-LINE POLICY CAN ASSIST THE GLOBAL PROMOTION OF EFFICIENT AND CLIMATE-FRIENDLY ACs

The Same-Line Policy refers to a Chinese government-endorsed course of action whereby exporting companies produce products for the export and domestic markets on the same production line in accordance with the same standards, so that the products supplied to the domestic market and the products exported to the markets overseas are of the same quality level.²³

Companies that want to provide "Same-Line Policy" products on the domestic market have to meet three requirements:

1. the company must obtain qualification for export registration and actually export products;
2. the company must self-declare that the products sold on the domestic market are in compliance with the Same-Line Policy; and
3. the company producing the products must obtain, if food safety is relevant to the exported goods, hazard analysis and critical control point (HACCP) certification.²⁴

The Same-Line Policy initially focused on goods deemed essential for daily consumption, such as food and agricultural products.²⁵ The Policy was gradually expanded to include a much broader scope of general consumer goods and industrial products, in order to minimize the impact of the pandemic on Chinese exporting companies.²⁶

The Same-Line Policy follows a long history of product standard development in China. Because China's product quality standards for domestic products were for the most part lower than the standards of many developed countries, the quality of exported products is often better than those products marketed and sold for domestic consumption.²⁷ As a result, more and more Chinese consumers prefer to purchase from the foreign markets, believing that they are obtaining higher-quality products.²⁸ In an effort to meet this preference, the Same-Line Policy was proposed to apply in situations where the Chinese standards for particular products are lower than foreign standards for such products. The Chinese government promoted the Policy to boost purchases by Chinese consumers of Chinese-manufactured products that were produced according to higher export-market standards. Implementation of the Policy by government and companies is intended to improve the product

quality for Chinese consumers, and meet and improve China's domestic mid-to-high-end market demand. Additionally, the Policy aims to motivate Chinese enterprises to improve their product and service quality, fully endorse international standards, and unify domestic- and export-market management models to improve industrial innovation and competitiveness.

In circumstances where standards applicable to particular Chinese products exceed requirements imposed under export-market standards for similar products, application of the Same-Line Policy implies that the exported products must comply with the Chinese standards.²⁹ The AC sector provides an example of such a situation. In July 2020, China began to formally implement its newly amended room AC minimum energy performance standards as part of China's response to climate change.³⁰ China has raised or will further raise the minimum performance standards to internationally leading levels in the following situations:

1. The minimum energy performance for *variable-speed* room ACs is now comparable to the minimum energy performance standards in the EU and the US.³¹
2. The top level of energy performance for *fixed-speed* and *variable-speed* room ACs is among the highest in the world, with requirements higher than those of Energy Efficiency Top Runner in Japan and ENERGY STAR in the US.³²
3. China is also in the process of updating its minimum energy performance standards for *multi-connected* ACs.³³

Even before the 2020 amendment of China's minimum energy performance standards for variable- and fixed-speed room ACs, the standards were already higher than those in many other developing countries such as India, Brazil, Thailand, Viet Nam, and Argentina.³⁴ Moreover, approximately 23% of all Chinese AC exports go to countries with no minimum energy performance standards.³⁵ Yet, through official interpretations of China's Standardization Law as the Law currently applies to exports, China's minimum energy performance standards mandatorily apply only to ACs produced, sold, imported, or supplied in China, *not to AC exports*.³⁶ Exported ACs are only required to be in line with the laws and regulations (including, for instance, the minimum energy performance standards) of the importing country and the terms of the contract for the sale or export of the goods.³⁷

This situation has enabled Chinese companies to export ACs with energy efficiency and other specifications that do not conform to standards in effect for the same ACs in China. For example, a recent market analysis of ten African countries showed that room ACs with energy efficiency ratios less than 3.0 W/W³⁸ make up 35% of the overall room AC sales in the report's ten focus countries, which represent 96% of Africa's room AC market.³⁹ At least 50% of these units are imported in whole or in part from China, followed by Korea (3.9%), the US (3.2%) and Japan (1.7%).⁴⁰ These exported room ACs and components fall below minimum product energy efficiency or other requirements and are therefore prohibited from import and/or sale in many of the major AC manufacturing and exporting countries, including China, Korea, Japan, and the US.⁴¹

Low-efficiency ACs undoubtedly undermine efforts by China and the countries importing Chinese products to combat climate change.⁴² Such products are "energy vampires" that needlessly draw energy resources better applied to other critical activities during the pandemic and indirectly contribute to air pollution by increasing demand on power facilities.⁴³ In addition, the "race to the bottom," wherein export strategy is focused on capturing and retaining market share by selling the lowest cost and least efficient, most polluting and climate-harming products, is a short-sighted approach for longer-term economic development, innovation, and employment, including for recovery from the COVID-19 pandemic. This is also inconsistent with China's green development strategy, even during this time of continued economic recovery.⁴⁴ It is particularly important that China seize the opportunity to prevent such exports, elevating the Chinese AC industry to contribute to the vision of "a community with a shared future for mankind," as described by Chinese President Xi Jinping.⁴⁵

To seize this opportunity, China should consider expanding the application of the Same-Line Policy to ACs that are sold into export markets with minimum energy performance standards that are lower than China's or that have not promulgated such standards. In other words, China should export ACs that meet Chinese minimum energy performance standards in situations where the export market has lower or no such standards.

IV. APPLYING THE SAME-LINE POLICY TO EXPORTED ACS IS IN CHINA'S AND THE WORLD'S INTERESTS

There are clear benefits to China and the world in applying the Same-Line Policy to exported ACs. This section describes three key advantages.

1. THE SAME-LINE POLICY MAKES CHINA'S GREEN DEVELOPMENT AND DEVELOPING-COUNTRY POLICY PRIORITIES MORE EFFECTIVE

Exporting low-efficiency products transfers climate-damaging emissions,⁴⁶ including air pollution linked to higher COVID-19 death rates, to other countries.⁴⁷ Chinese government policy priorities, such as promoting the green BRI and South-South cooperation on climate change, reflect the country's willingness to work with other countries, especially developing countries, to achieve the goals of sustainable development and climate safety. The application of the Same-Line Policy to these initiatives would help make these initiatives more effective, as described below. It would also be a timely move to help realize a post-pandemic green recovery in BRI countries that minimizes climate-damaging emissions.

A. GREEN BRI AND BRI GREEN COOLING POLICIES

The BRI is a China-initiated platform to promote international collaboration in the key areas of “policy coordination, connectivity of infrastructure and facilities, unimpeded trade, financial integration, and closer people-to-people ties.”⁴⁸ The BRI Green Development International Alliance was proposed by President Xi Jinping during the first BRI Forum for International Cooperation in 2017.⁴⁹ He emphasized in his keynote speech at this BRI Forum that “[w]e must practice the new concept of green development, advocate green, low-carbon, circular, and sustainable production and lifestyles, strengthen cooperation in ecological and environmental protection, build ecological civilization, and jointly achieve the 2030 Sustainable Development Goals.”⁵⁰

In 2019, China's National Development and Reform Commission launched the BRI Green Cooling Initiative during the Second BRI Forum for International Cooperation, together with United Nations Industrial Development Organization, the United Nations Economic and Social Commission for Asia and the Pacific, and Energy Foundation China.⁵¹ The Initiative calls for countries, industries and

international organizations to join together to “promote collaboration among BRI countries on policy, technology and market transformation, and improve energy efficiency for the sustained development of the cooling industry.”⁵² Initiative activities include: construction of platforms for policy dialogue and information exchange; capacity building, exchange, and cooperation on energy efficiency policies and standards; innovation in green cooling business models; and technology innovation and exchange.⁵³ Cooling industry associations from China, the US, Japan, Brazil, and Europe, as well as the China National Institute of Standardization, Chinese AC manufacturers Gree, Haier, Midea, Aux, TCL, and the Chinese e-commerce platform JD.com joined the Initiative.⁵⁴

The BRI Green Cooling Initiative establishes a ready-for-deployment platform to support the export of efficient and climate-friendly ACs to BRI countries. This is in line with the Initiative's vision of promoting collaboration among BRI countries to improve cooling efficiency as the world warms from climate change.⁵⁵ Particularly, as discussed earlier in this article, many countries in Africa, Asia, Latin America, and the Caribbean still have not implemented any form of energy performance standard and therefore enable import of inefficient products that would be prohibited in their countries of manufacture.⁵⁶ Many of the countries in these regions participate in the BRI.⁵⁷ Further, many of these countries constitute significant AC product export markets for China.⁵⁸ The BRI Green Cooling Initiative presents the Chinese government with a clear opportunity for such transformative leadership if it were to apply the Same-Line Policy to ACs that are exported to the BRI countries. This could be the next ground-breaking step to help realize post-pandemic green recovery of these countries.

B. SOUTH-SOUTH CLIMATE-CHANGE COOPERATION POLICIES

The export of efficient and climate-friendly ACs to developing countries that have lower or no minimum energy performance standards is also consistent with China's broader support for cooperation in resources, technology, and knowledge on climate-change solutions among developing countries (i.e., “South-South climate-change cooperation”).

During the period spanning 2011 to 2019, the Chinese government allocated about one billion yuan (around 155 million USD) for South-South climate-change cooperation activities.⁵⁹ In 2015, China

provided a grant of six million USD to the UN Secretary-General's Office for work on South-South climate-change cooperation.⁶⁰ The same year, President Xi Jinping announced the establishment of the China South-South Climate Cooperation Fund of twenty billion yuan (around three billion USD).⁶¹

China's South-South climate cooperation activities include: donating climate adaptation and mitigation goods, such as efficient products, to small island countries, least developed countries, and African countries, many of which are also BRI countries; and organizing climate change training seminars for officials and technicians from other developing countries.⁶² Many efficient and environment-friendly products, including energy-efficient ACs, LED lamps, solar photovoltaic power generation systems, solar street lamps, and electric vehicles, were donated to developing countries.⁶³ During his speech at the opening ceremony of the Paris Climate Summit in 2015, President Xi Jinping also announced the launch of South-South cooperation projects to "set up 10 pilot low-carbon industrial parks and start 100 mitigation and adaptation programs in other developing countries, as well as to provide 1,000 training opportunities on climate change."⁶⁴

Going beyond donations, an official policy mandating the export of efficient ACs to other developing countries would be consistent with China's broader support for South-South climate-change cooperation. Evidence that Chinese manufacturers are exporting inefficient ACs to developing countries contradicts China's promotion of the green BRI and BRI Green Cooling Initiative and also undermines the benefits of the Chinese government's donation of efficient ACs to countries as part of its South-South climate-change cooperation.⁶⁵ It also further underscores the need for consistent and climate-friendly policies in China's international relations.

To address these contradictions, the Chinese government should incorporate the Same-Line Policy into its South-South climate-change cooperation projects, including the construction of pilot low-carbon industrial parks and the implementation of climate mitigation and adaption programs. Such actions will also strengthen the climate integrity of such projects.

2. THE SAME-LINE POLICY REFLECTS A STRATEGIC MOVE TO ACCELERATE INDUSTRY TRANSITION AND ACHIEVE MADE-IN-CHINA 2025 TARGETS

"Made-in-China" products have long been stereotyped for various reasons as inexpensive but low-quality goods enabled through low labor-cost and supply-chain advantages.⁶⁶ Made in China 2025 is a strategic plan issued by the Chinese government in 2015, aiming to comprehensively upgrade Chinese industry, and transition Chinese manufacturing to become innovation-driven, emphasize quality over quantity, achieve green development, optimize the structure of Chinese industry, and nurture human talent.⁶⁷

Made in China 2025 highlights, among other things, the concept of green development and green manufacturing. To realize this policy, the Chinese government should engage Chinese companies with the understanding that the following corporate actions are critical in helping the government realize Made-in-China 2025's goals:

- a. Develop efficient and environment-friendly products to build a green supply chain through incorporation of energy-saving and environmental protection factors into product design, procurement, production, packaging, logistics, sales, service, recycling and reuse processes;
- b. Take enterprise social responsibility seriously, including environmental protection, energy conservation, and emissions reduction; and
- c. Implement enterprise green strategies, green standards, green management, and green production.⁶⁸

Export of inefficient products, including ACs, represents a fundamental deviation from the Made-in-China 2025 targets. These targets include transitioning companies to innovators of quality products and brands. To put this transformation in Chinese terms, the targets aim at transforming industry members "from made in China to invented in China, from Chinese speed to Chinese quality, [and] from Chinese products to Chinese brands."⁶⁹ In order to fulfill the task of evolving Chinese manufacturing from its current focus on large output to a focus on high product quality,⁷⁰ one important strategic move is to stop producing and selling products—including those destined for export--that do not conform to China's minimum product

standards, including energy performance standards. This would demonstrate that the Chinese government is determined to achieve Made-in-China 2025 targets and would motivate Chinese industry to more quickly become a global market leader on technology innovation and high-quality products.

3. THE SAME-LINE POLICY HELPS CONTROL BUSINESS RISKS ASSOCIATED WITH AC EXPORTS

Applying the Same-Line Policy to exported ACs would also reduce risks associated with regulatory changes among global trade partners. Such risks include when the country importing ACs from China adopts or raises its minimum energy performance standards making import of low-efficiency ACs illegal and subject to rejection, seizure, destruction, and/or the focus of local, national, or international criticism. A growing number of export-market governments purchasing goods from China, as well as leading Chinese manufacturers, are learning and understanding the environmental and climate significance of cooling efficiency. These export-market governments are also increasingly demanding efficient ACs for their markets, in many cases with technical and policy assistance from multilateral treaty secretariats and multilateral initiatives, including the Montreal Protocol on Substances that Deplete the Ozone Layer,⁷¹ the United Nations Environment Programme's Cool Coalition,⁷² and United for Efficiency (U4E) Model Regulation initiatives.⁷³

Therefore, the business risks associated with the export of ACs the performance of which falls below China's minimum energy efficiency standards are significant and are expected to grow swiftly. For AC exports that fall below China's minimum energy performance standards, these ACs would be prohibited from being sold within China or being diverted (if they are returned) to other countries or regions with higher standards. The cost and expenses may have to be fully born by the Chinese manufacturers or companies across their value chain⁷⁴ under these circumstances. Producing ACs that do not conform to China's minimum product performance standards limits options for Chinese companies pursuing such production as a response to the economic crisis arising from the pandemic. Avoidance of such global trade risks is a key reason why the Chinese government issued the Implementation Opinions on Supporting the Sale of Export Products on Domestic Market.⁷⁵ This policy document encourages Chinese enterprises to

produce products consistent with the Same-Line Policy, so that the enterprises can flexibly transfer these products between domestic sales and foreign exports in response to crises in China's domestic or international markets.

Considering the Chinese AC industry's dominant role in the global cooling equipment trade, implementation of the Same-Line Policy is a necessary measure for controlling the business risk they may encounter sooner or later, in their export markets.

V. LEGAL AND POLICY RECOMMENDATIONS TO REALIZE THE BENEFITS OF APPLYING THE SAME-LINE POLICY TO EXPORTED COOLING EQUIPMENT

There are, in general, two categories of strategies to promote law and policy implementation of the Same-Line Policy with respect to exported ACs: (1) Chinese government and corporate commitments to stop producing and exporting ACs with energy efficiency performance that does not meet China's own minimum energy performance standards; and (2) importing-country adoption or strengthening of policy tools such as minimum energy performance standards, where none or lower standards exist, and associated import restrictions aimed at prohibiting imports of inefficient ACs.⁷⁶

Considering the two categories of strategies listed above, it is more straightforward for China to stop producing and exporting ACs that do not conform to China's own energy efficiency standards. Such a policy would also prevent companies from the "race to the bottom" for market share, where companies might flood the markets with low cost and inefficient products that create a "market for lemons" and undercut the ability to sell higher-efficiency and better-quality products.⁷⁷

The following law and policy actions would help realize the benefits of China applying the Same-Line Policy to exported ACs.

1. INCORPORATE THE SAME-LINE POLICY INTO THE GREEN DEVELOPMENT OF BRI AND SOUTH-SOUTH CLIMATE-CHANGE COOPERATION

In the near-term, an effective policy tool that can be rapidly deployed is to incorporate the Same-Line Policy into the green development of the BRI (including the BRI Green Cooling Initiative) and the South-South climate-change cooperation. The Chinese

government can promote the export of ACs above China's minimum energy performance standards to countries with minimum energy performance standards lower than China's or no existing minimum energy performance standards through mechanisms such as green procurement for the BRI projects.⁷⁸ Implementation of this strategy can be demonstrated through the following actions:

- a. Prohibit the procurement and installation of ACs that do not conform to the Same-Line Policy in BRI projects and South-South climate-change cooperation projects;
- b. Prioritize the procurement and installation of efficient ACs according to China's energy efficiency standards in BRI projects and South-South climate-change cooperation projects;
- c. Incorporate the Same-Line Policy into funding allocation processes and decisions under the Silk Road Fund⁷⁹ and China South-South Climate Cooperation Fund;⁸⁰
- d. Utilize the BRI Green Cooling Initiative to facilitate and encourage Chinese AC company participation in BRI countries' government green procurement programs and private buyers clubs⁸¹ for efficient ACs; and
- e. Deploy the BRI and South-South climate-change cooperation platforms to assist with capacity building and information sharing on policies and mechanisms for government/public⁸² and company/private⁸³ green procurement with AC importing countries, including support for adoption of U4E Model Regulations.⁸⁴

2. AMEND CHINESE STATUTES TO PROHIBIT PRODUCTION AND EXPORT OF ACs THAT DO NOT CONFORM TO CHINA'S MINIMUM ENERGY PERFORMANCE STANDARDS

In the longer term, we propose that the Chinese government amend the relevant Chinese statutes to prohibit producing and exporting ACs that do not conform to China's minimum energy performance standards. This will provide the legal foundation for a mandatory regulation of the energy efficiency performance of exported products, such as ACs. A good and relevant example of export controls can be found in China's rules governing ozone-depleting substances. Article 3 of the Regulation on Administration of Ozone Depleting Substances regulates activities including the production, sales,

consumption, import and export of ozone-depleting substances in China.⁸⁵

We have identified three primary options for amendment of Chinese law governing the energy efficiency performance of exported products:

Option 1: revise Article 26 of the Standardization Law, which provides that "[t]echnical requirements for exported products and services shall be implemented in accordance with the contract provisions [therefor]."⁸⁶ We propose to add one paragraph to Article 26 providing that "in cases where the uses of the exported products may cause significant environmental impacts, the technical requirements agreed in the export contracts shall not be lower than China's minimum environmental and energy performance standards. The list of products that may cause significant environmental impacts shall be formulated and published by the Ministry of Ecology and Environment, together with other relevant ministries under the State Council."

Option 2: revise the Article 17 of the Energy Conservation Law, which currently provides that "[i]t is prohibited to produce, import, or sell energy-consuming products and equipment that are explicitly phased out by the government or do not meet [China's] minimum energy performance standards."⁸⁷ We propose to revise this Article to add "export" as follows: [i]t is prohibited to produce, sell, import, or export energy-consuming products that are explicitly phased out by the government or do not meet [China's] minimum energy performance standards.

Option 3: In the near term, while the longer-term statutory amendment process proceeds, we propose that the Chinese government expand the interpretation of Article 17 of the Energy Conservation Law.⁸⁸ The current, prevailing interpretation of Article 17, described in Option 2 above, is that production of energy-consuming products and equipment means production for the domestic market only, not production of products that are destined for export. We propose to interpret the meaning of "prohibited production" as prohibited production for products that are destined for both the domestic and export markets. The legal basis for such expanded interpretation can be found in Article 9 of the Civil Code, which provides that "[c]ivil entities that are engaged in civil activities shall be conducive to resource conservation and protection of the ecological environment," also known as the "green principle" of the Civil Code.⁸⁹

3. ACCELERATE INDUSTRY TRANSITION THROUGH GOVERNMENT POLICY AND FINANCIAL SUPPORT

The Chinese government should also explore channels for government policy and financial support, in addition to the mechanisms under the BRI and South-South climate-change cooperation, that would provide greater confidence to industry and overcome potential short-term cost increases involved in applying the Same-Line Policy to exported ACs.

In support of this recommendation, we note that the Chinese government has implemented various incentive mechanisms to promote the sale of efficient and environment-friendly products or services in its domestic market. Article 21 of China's Environmental Protection Law stipulates that "[t]he state adopts various fiscal, taxation, pricing, and government procurement policies and measures to encourage and support the development of environmental protection industries to [promote] environmental protection technology and equipment, [advance] comprehensive utilization of resources, and [provide] environmental services."⁹⁰

China has a history of promoting sales of energy efficient products, including through subsidies. From June 2009 to May 2011, the national government of China spent 14.6 billion yuan (2.25 billion USD) in subsidies for energy efficient ACs.⁹¹ Data from the China Ministry of the Finance showed that the market share of energy efficient ACs increased from 5% to more than 70% during this time period.⁹² The subsidy policy successfully promoted the sale of fifty million AC units, which contributed to annual electricity saving of about ten billion kWh.⁹³ In 2012, another round of subsidies was launched with a larger budget of 26.5 billion yuan (4.2 billion USD) for a number of electronic appliances including ACs.⁹⁴ In 2014, China announced subsidies for ACs using propane ("R290")⁹⁵ as a refrigerant including those exported to developing countries.⁹⁶

There is a key lesson to be learned from the 2012 subsidy program. The program supported an energy-efficiency level that already represented a large share of the market. Therefore, it encouraged inefficient technologies and failed to maximize the energy efficiency improvement potential from the provided subsidies.⁹⁷ Further, while a well-designed subsidy program remains a key government tool for incentivizing consumer spending and improving energy efficiency in China, the application of such

support to exported products is subject to limitations, including requirements imposed on China as a member of the World Trade Organization (WTO).⁹⁸

The Chinese government would nonetheless be remiss in its efforts to promote industry export of ACs meeting at least China's minimum energy efficiency standards if it did not also consider a wide range of financial tools to support these activities.⁹⁹ Hence, we propose that the Chinese government also consider tax incentives or subsidies for companies that export efficient ACs to countries with lower minimum energy efficiency standards than China's or countries with no existing energy efficiency standards for such products. Of course, to help ensure that the incentives are consistent with international trade rules and that any incentive programs support higher-efficiency products that do not currently have a large share of the market, China would need to require a minimum set of eligibility criteria for such tax incentives or subsidies, including: the claim for tax incentive or subsidy is in compliance with the WTO rules;¹⁰⁰ and the claim is for energy efficient ACs, according to China's AC energy efficiency standards.

VI. CONCLUSION AND TAKEAWAYS FOR POLICYMAKERS AND STAKEHOLDERS

There are five key takeaways for policymakers and stakeholders seeking to respond to the global market challenges against the backdrop of the pandemic and the climate emergencies that are threatening future generations.

1. The increase of global cooling demand comes with a new climate mitigation opportunity to promote efficient and climate-friendly cooling.
2. China is well positioned, through its dominant position in the AC industry, to lead on realization of this opportunity through applying China's Same-Line Policy to ACs exported to countries with lower or no existing minimum energy performance standards for such products.
3. The development of green BRI and South-South climate-change cooperation can be improved by applying China's Same-Line Policy to ACs exported to BRI countries with lower or no minimum energy performance standards, and by incorporating the Same-Line Policy into China's South-South climate-change cooperation projects.

4. China can reinforce the goals of the Made-in-China 2025 strategy by amending and/or interpreting its statutes to stop exports of ACs that do not conform to China's minimum energy performance standards for such products.
5. Chinese companies can demonstrate their leadership through participation in public or private procurement of energy efficient ACs that are destined for countries with no

minimum energy performance standards or minimum energy performance standards lower than China for such products.

Given these takeaways, it is recommended that the Chinese government act quickly to seize this opportunity that should not be missed to capture the climate mitigation, public health, and industry upgrade benefits of its AC exports.

Reference

1. Conference, National Development and Reform Commission Held a Press Conference in June 2019 to Introduce Economic Development Situation and Respond to Hot Issues [发展改革委举行 2019 年 6 月份定时定主题新闻发布会 介绍宏观经济运行情况并回应热点问题](Jun. 17, 2019), http://www.gov.cn/xinwen/2019-06/17/content_5401036.htm.
2. Implementation Opinions on Supporting the Sale of Export Products on Domestic Market [关于支持出口产品转内销的实施意见] (promulgated by China General Office of the State Council, June 17, 2020), http://www.gov.cn/zhengce/content/2020-06/22/content_5521078.htm (“支持企业发展“同线同标同质”产品，即在同一生产线上按照相同标准、相同质量要求生产既能出口又可内销的产品，帮助企业降低成本、实现内外销转型。” [“Support the development of "same line, same standard and same quality" products, that is, produce products that can be exported and sold domestically on the same production line in accordance with the same standards and quality requirements, helping enterprises reduce costs and realize the transformation of domestic and foreign sales"]).
3. See generally INTERNATIONAL ENERGY AGENCY (IEA) & UN ENVIRONMENT PROGRAMME, COOLING EMISSIONS AND POLICY SYNTHESIS REPORT: BENEFITS OF COOLING EFFICIENCY AND THE KIGALI AMENDMENT 1, 15 (2020), <https://wedocs.unep.org/bitstream/handle/20.500.11822/33094/CoolRep.pdf?sequence=1&isAllowed=y> (repeatedly noting the climate impacts of cooling equipment).
4. See *id.* at 27.
5. IEA, THE FUTURE OF COOLING: OPPORTUNITIES FOR ENERGY-EFFICIENT AIR CONDITIONING, 1, 12 (May 2018), https://www.k-cep.org/wp-content/uploads/2020/03/The_Future_of_Cooling.pdf (“Worldwide, the cumulative savings in the Efficient Cooling Scenario amount to 2.9 USD trillion over 2017-2050 compared to the Baseline Scenario”).
6. See IEA & UN ENVIRONMENT PROGRAMME, *supra* note 3, at 28.
7. See Amanda McCrum, et al., *CLASP Policy Database – an Appliance Energy Efficiency Tool for Collaboration and Innovation*, Center for Law and Social Policy (CLASP), 1723, 1725 (Jan. 2019), <https://www.clasp.ngo/wp-content/uploads/2021/01/2019-eceee-Summer-Study-CLASP-policy-database—an-appliance-energy-efficiency-tool-for-collaboration.pdf> (listing countries with appliance and equipment energy efficiency policies around the world).
8. CLASP, THE ROLE OF TRADE POLICY AND ENERGY EFFICIENCY POLICY TO PROMOTE HIGHLY EFFICIENT AIR CONDITIONER MARKETS, 1, 2 (Feb. 11, 2019), <https://clasp.ngo/publications/the-role-of-trade-policy-and-energy-efficiency-policy-to-promote-highly-efficient-air-conditioner-markets>.
9. See *id.* at 6 (referencing Figure 2: *Major Export Regions for Chinese AC Units* (sourcing data from United Nations Commodity Trade Statistics Database (UN Comtrade))).
10. Amol Phadke, et al., *Chinese Policy Leadership Would Cool Global Air Conditioning Impacts: Looking East*, 66 ENERGY RSCH. & SOC. SCI. 1, 9 (2020).
11. Minimum Allowable Values of the Energy Efficiency and Energy Efficiency Grades for Room ACs [房间空气调节器能效限定值及能效等级], NATIONAL PUBLIC SERVICE PLATFORM FOR STANDARDS INFORMATION, (Dec. 31, 2019), <http://std.samr.gov.cn/gb/search/gbDetailed?id=9B70DDA9400DA80CE05397BE0A0A84AC> (issuing

- this rule is the State Administration for Market Regulation and the National Standardization Administration).
12. China Green and High-Efficiency Cooling Action Plan [绿色高效制冷行动方案], (promulgated by China National Development and Reform Commission, Ministry of Industry and Information Technology, Ministry of Finance, Ministry of Ecology and Environment, Ministry of Housing and Urban-Rural Development, State Administration for Market Regulation and National Government Offices Administration, June 13, 2019), <http://www.gov.cn/xinwen/2019-06/15/5400474/files/3daad33b125443abbd88855b69c61d3c.pdf>. Reference English translation of China Green and High-Efficiency Cooling Action Plan is available at: <https://www.igsd.org/chinas-green-and-high-efficiency-cooling-action-plan-a-model-for-cooling-efficiency-ambition/>.
 13. United Nations Treaty Collection, 2. f Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer, https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtdsg_no=XXVII-2-f&chapter=27&clang=en#EndDec (status as at June 21, 2021).
 14. ¹ See Press Conference, *supra* note 1.
 15. ¹ Luo Lin, *Market Analysis of China's AC Industry in 2019: Output is Close to 220 Million Units and Export Value Exceeds Tens of Billions of Dollars* [2019 年中国空调行业市场分析: 产量接近 2.2 亿台 出口金额突破百亿美元], QIANZHAN DATABASE (March 23, 2020), <https://d.qianzhan.com/xnews/detail/541/200323-cabb150a.html>.
 16. Wen Si, *Overview of China's AC Market in 2019* [2019 年度中国空调市场综述], AIKEN HOUSEHOLD APPLIANCE WEB (Jan. 20, 2020), http://m.cheaa.com/n_detail/w_568364.html.
 17. *In 2019, Midea's AC Export Volume Exceeded Twenty Million Sets, China's No. 1* [2019 年美的空调出口量破 2000 万套, 中国 NO.1], TENCENT NEWS (Dec. 16, 2019), <https://new.qq.com/omn/20191216/20191216A0SBN000.html>.
 18. Wen, *supra* note 16.
 19. *The World Recognizes Chinese AC Brands Starting from Haier* [世界认识中国空调品牌从海尔开始], CANKAOXIAOXI WEB (Apr. 16, 2019), <http://www.cankaoxiaoxi.com/pinpai/20190416/2377460.shtml>.
 20. *See id* (“对于全球用户来说, 认识中国企业很容易, 认识中国空调品牌却很难……真正认识中国企业海外发展现状, 必须改变一个观点: 出口产品不等于出口品牌。在海外市场, 中国空调分为两种: “有品牌的”和“没品牌的”, 分别代表了“创牌”和“贴牌”两条截然不同的中国企业全球化道路。” [“For the global consumers, it is easy to recognize Chinese companies, but it is difficult to recognize Chinese AC brands... In order to fully understand the current situation of overseas development of Chinese enterprises, we must clarify a point of view: export products are not equal to export brands. In overseas markets, ACs exported by China are divided into two categories: "branded" and "unbranded." This difference represents two very different globalization paths for Chinese companies of “creating their own brands” or “selling under other brands.”]).
 21. *On the Domestic AC Market, Gree, Midea and Haier Compete on Scale, But How About on the Export Markets?* [在国内空调业, 格力、美的、海尔比规模, 在国外呢?], GLOBAL HOUSE APPLIANCE WEB (Nov. 29, 2019), <https://cacs.mofcom.gov.cn/article/flfwpt/jyjdycgal/201911/161405.html> (“与国内空调业比拼规模不同, 当中国空调走出国门后, 自主品牌建设才是核心竞争力。” [“Unlike the scale-focused competition on the domestic market, when it comes to the export markets, the key for competitiveness embeds in the strength of its own brand.”]).
 22. *See Implementation Opinions on Supporting the Sale of Export Products on Domestic Market* [关于支持出口产品转内销的实施意见] (promulgated by China General Office of the State Council, June 17, 2020), http://www.gov.cn/zhengce/content/2020-06/22/content_5521078.htm; *see also Recovery of Work and Production! How Household Appliance Companies Resist the Impact of the Pandemic* [复工复产! 家电企业如何抵御疫情冲击], XIAOXIANG MORNING POST (May 5, 2020), <http://ac.chinaiol.com/u/0522/56223178.html> (“疫情当下, 家电企业正通过外销转内销、增加产品型号款式、发展多种销售模式来进行自救” [“Under the circumstances of the pandemic, household appliance companies are rescuing themselves by converting from export to domestic sales, as well as increasing product models and styles, and exploring multiple sale channels.”]).
 23. *How Much do You Know about the Same-Line Policy?* [关于“同线同标同质”你了解多少?], CERTIFICATION AND ACCREDITATION

- ADMINISTRATION,
http://www.cnca.gov.cn/rdzt/2016/txtbtz/qwjd/201605/t20160508_51071.shtml (last visited Oct. 5, 2020).
24. *See id.* HACCP management system certification, one of the Same-Line Policy requirements for food-related exports, is a management system for addressing food-safety related hazards from food production processes. While we included this for a complete understanding of the Same-Line Policy requirements, this requirement is not central to this article’s analysis.
 25. *See The General Administration of Quality Supervision, Inspection and Quarantine Guides the Transition of Food Export Enterprises to Achieving the “Same-Line Policy” between Food for Export and for Domestic Consumption* [国家质检总局引导出口食品企业转型 实现内外销食品“同线同标同质”], CERTIFICATION AND ACCREDITATION ADMINISTRATION,
http://www.cnca.gov.cn/rdzt/2016/txtbtz/rdyw/201605/t20160508_51105.shtml (last visited Oct. 5, 2020).
 26. *See* Implementation Opinions on Supporting the Sale of Export Products on Domestic Market, *supra* note 2.
 27. *See* CERTIFICATION AND ACCREDITATION ADMINISTRATION, *supra* note 23.
 28. *Same-Line Policy Products Enter the Domestic Market on a Large Scale-No Need to Go Abroad to Buy Made-in-China Products* [“同线同标同质”产品大规模进入国内市场——不用出国买“国货”], PEOPLE’S DAILY INT’L EDITION, (Apr. 14, 2019), http://www.xinhuanet.com/2019-04/04/c_1124324953.htm.
 29. *Id.* (“如产品标准的具体指标出现我国高于或严于出口的，按我国国内标准执行”[“if Chinese standards are higher than export countries’, Chinese standards shall be applied”]).
 30. Minimum Allowable Values of the Energy Efficiency and Energy Efficiency Grades for Room ACs, *supra* note 11.
 31. *Amended Minimum Allowable Values of the Energy Efficiency and Energy Efficiency Grades for Room ACs is to be Promulgated Soon* [新版《房间空气调节器能效限定值及能效等级》即将出台], XINHUA NET (Jan. 10, 2020), http://www.xinhuanet.com/tech/2020-01/10/c_1125443206.htm.
 32. *Id.*
 33. Minimum Allowable Values of the Energy Efficiency and Energy Efficiency Grades for Multi-Connected Air-Conditioning (Heat Pump) Units (Draft for Comments) [多联式空调（热泵）机组能效限定值及能效等级 征求意见稿] (draft sent for WTO notification on Nov. 13, 2020), <http://english.tbtsps.com/page/ewto/Notificationcontent.action?id=4761&columnid=017001> (the issuing agency listed on the draft is the State Administration for Market Regulation and the National Standardization Administration).
 34. *See* Nihar Shah, et al., *Opportunities for Simultaneous Efficiency Improvement and Refrigerant Transition in Air Conditioning*, ENERGY ANALYSIS AND ENV’T L IMPACTS DIV. LAWRENCE BERKELEY NAT’L LAB’Y, xiii, fig. ES-2 (July 2017), <https://international.lbl.gov/publications/opportunities-simultaneous-efficiency>.
 35. CLASP, *supra* note 8 at 5.
 36. Biao zhun hua Fa (标准化法) [China Standardization Law] (promulgated by the Standing Comm. Nat’l People’s Cong., Nov. 4, 2017, effective Jan. 1, 2018), art. 26, http://www.npc.gov.cn/zgrdw/npc/xinwen/2017-11/04/content_2031446.htm (providing that the “technical requirements for exported products and services shall be implemented in accordance with the contract”). Under Article 26, both import and export parties can agree to adopt, international standards, importing country standards, exporting country standards, or third country standards, to define the technical requirements for their contracts. Import and export parties can directly negotiate their own technical specifications. Goods or services exported must be in line with the local laws and regulations of the importing country, such as the importing country’s mandatory standards. If the importing country lacks minimum standards for the imported products, the language of Article 26 does not stipulate that the exported product must at least meet China’s minimum standards. Article 26 of China’s Standardization Law stands in somewhat stark contrast with Article 25, which specifies “products and services that do not meet [China’s] mandatory standards shall not be produced, sold, imported or supplied.”
 37. *Id.*
 38. Room ACs, DEPARTMENT OF ENERGY, <https://www.energy.gov/energysaver/room-air-conditioners> (last visited Apr. 23, 2021). The energy efficiency ratio (EER) is a metric that is used to measure a room AC’s efficiency. The EER is calculated as the ratio of the cooling capacity to the

- power input. Therefore, the higher the EER rates, the more efficient the AC is.
39. CLASP, ENVIRONMENTALLY HARMFUL DUMPING OF INEFFICIENT AND OBSOLETE AIR CONDITIONERS IN AFRICA, 5 (June 24, 2020), <https://clasp.ngo/publications/environmentally-harmful-dumping-of-inefficient-and-obsolete-air-conditioners-in-africa> (CLASP and IGSD collaboration).
 40. *Id.* at 22.
 41. *See Id.* at 5.
 42. *See* IEA & UN Environment Programme, *supra* note 3 at 41.
 43. *Dumping of Obsolete ACs Undermines Development and Climate Goals*, INST. FOR GOVERNANCE & SUSTAINABLE DEV. (Jan. 9, 2019), <http://www.igsd.org/dumping-of-obsolete-air-conditioners-undermines-development-and-climate-goals/>.
 44. *China Minister of Ecology and Environment, Runqiu HUANG, Gave a Video Speech at the Petersberg Climate Dialogue XI* [彼得斯堡气候对话会召开生态环境部部长黄润秋视频讲话] CHINA ENVIRONMENT NEWS, (April 30, 2020), https://www.cenews.com.cn/news/202004/t20200430_940554.html (“人类是休戚与共的命运共同体……面对全球气候变化带来的长期挑战和重大风险，各国在恢复经济过程中应当坚持绿色低碳的大方向”[“Human beings live in a community with a shared future... Facing the long term challenges and major risks brought by climate change, countries around the world should adhere to the green and low-carbon development path while pursuing the economic recovery”]).
 45. *Xi Jinping Proposed to Adhere to the Path of Peaceful Development and Promote the Building of A Community with A Shared Future for Mankind*, [习近平提出，坚持和平发展道路，推动构建人类命运共同体], XINHUA NEWS, (Oct. 18, 2017), http://www.gov.cn/zhuanti/2017-10/18/content_5232664.htm.
 46. *See generally* CLASP, *supra* note 39 (examining trading practices in African countries to determine where environmental dumping of inefficient, high-GWP room ACs is occurring and to identify the factors creating a favorable environment for such practices).
 47. Andrea Pozzer et al., *Regional and Global Contributions of Air Pollution to Risk of Death from COVID-19*, 116(14) CARDIOVASCULAR RESEARCH, 2247–2253 (2020), <https://doi.org/10.1093/cvr/cvaa288> (“We characterized global exposure to fine particulates based on satellite data, and calculated the anthropogenic fraction with an atmospheric chemistry model. The degree to which air pollution influences COVID-19 mortality was derived from epidemiological data in the USA and China. We estimate that particulate air pollution contributed ~15% (95% confidence interval 7–33%) to COVID-19 mortality worldwide, 27% (13 – 46%) in East Asia, 19% (8–41%) in Europe, and 17% (6–39%) in North America. Globally, ~50–60% of the attributable, anthropogenic fraction is related to fossil fuel use, up to 70–80% in Europe, West Asia, and North America.”). Michael Petroni et al., *Hazardous Air Pollutant Exposure as a Contributing Factor to COVID-19 Mortality in the United States*, 15 ENV'TL. RSCH. LETTERS, 1–3 (Sept. 11, 2020), <https://iopscience.iop.org/article/10.1088/1748-9326/abaf86/pdf> (“We find that an increase in the respiratory hazard index is associated with a 9% increase in COVID-19 mortality... [Hazardous air pollutant] respiratory hazard index (HI) and respiratory hazard quotient (HQ) values [for the study] were obtained from EPA National Air Toxics Assessment (NATA) for the year 2014 (EPA 2018). ... The HQ (for single pollutants) and HI (for multiple pollutants) represent the ratio of modeled yearly average ambient concentration to the concentration... at which a negative respiratory health outcome is expected to be observed.”); Yaren Ogen, *Assessing Nitrogen Dioxide (NO₂) Levels as a Contributing Factor to Coronavirus (COVID-19) Fatality*, 726 SCI. OF THE TOTAL ENV'T., 1–5, (July, 1 2020), <https://doi.org/10.1016/j.scitotenv.2020.138605> (“The objective of this study is to examine the relationship between long-term exposure to NO₂ and coronavirus fatality.... These results indicate that the long-term exposure to this pollutant may be one of the most important contributors to fatality caused by the COVID-19 virus in these regions and maybe across the whole world.”); Edoardo Conticini, Bruno Frediani & Dario Caro, *Can Atmospheric Pollution be Considered a Co-Factor in Extremely High Level of SARS-CoV-2 Lethality in Northern Italy?*, ENVTL. POLLUTION, 261 (June 2020), <https://doi.org/10.1016/j.envpol.2020.114465> (“We conclude that the high level of pollution in Northern Italy should be considered an additional co-factor of the high level of lethality recorded in that area.”); *see also* SCIENTIFIC ADVISORY PANEL OF THE CLIMATE & CLEAN AIR COALITION (CCAC), SHORT LIVED CLIMATE POLLUTANTS SPECIAL RESEARCH DIGEST – COVID-19 AND AIR POLLUTION, (2020) <https://www.ccacoalition.org/en/resources/slcp->

- research-digest-special- edition-covid-19 (discussing these and related Covid-19 studies); Xiao Wu et al., *Air Pollution and COVID-19 Mortality in the United States: Strengths and Limitations of an Ecological Regression Analysis*, SCI. ADVANCES, 1 (2020) <https://doi.org/10.1101/2020.04.05.20054502>, (“We found that an increase of 1 µg/m³ in the long-term average PM_{2.5} is associated with a statistically significant 11% (95% CI, 6 to 17%) increase in the county’s COVID-19 mortality rate (see [Table 1](#)); this association continues to be stable as more data accumulate (fig. S3).”).
48. Office of the Leading Group for the Belt and Road Initiative, *Building the Belt and Road: Concept, Practice and China’s Contribution*, 18 (May 2017), <https://eng.yidaiyilu.gov.cn/wcm.files/upload/CMS ydylyw/201705/201705110537027.pdf>.
 49. President Xi Jinping, President of China, Join Hands to Advance the Construction of the BRI [携手推进“一带一路”建设], Keynote Speech at the first BRI Forum for International Cooperation (2017), http://www.gov.cn/xinwen/2017-05/14/content_5193658.htm?gs_ws=tsina_636305289946264139.
 50. *Id.*
 51. BELT AND ROAD GREEN COOLING INITIATIVE [“一带一路”绿色高效制冷行动倡议] (co-initiated by China National Development and Reform Commission, United Nations Industrial Development Organization, United Nations Economic and Social Commission for Asia and the Pacific and Energy Foundation China, Apr. 26, 2019), <https://www.ndrc.gov.cn/fzggw/jgsj/hzs/sjdt/201904/W020190910582061655527.pdf>.
 52. *Id.*
 53. *Id.*
 54. *Id.*
 55. *Id.*
 56. CLASP, THE ROLE OF TRADE POLICY AND ENERGY EFFICIENCY POLICY TO PROMOTE HIGHLY EFFICIENT AC MARKETS (Feb. 11, 2019), <https://clasp.ngo/publications/the-role-of-trade-policy-and-energy-efficiency-policy-to-promote-highly-efficient-air-conditioner-markets>; *see also* CLASP, ENVIRONMENTALLY HARMFUL DUMPING OF INEFFICIENT AND OBSOLETE ACS IN AFRICA (June 24, 2020), <https://clasp.ngo/publications/environmentally-harmful-dumping-of-inefficient-and-obsolete-air-conditioners-in-africa> (discussing African countries’ risk of becoming ‘environmental dumping’ grounds for inefficient and environmentally harmful ACs as industrial economies increase minimum energy performance standards and limit refrigerant GWPs, in response to climate change).
 57. *See* Belt and Road Portal, https://eng.yidaiyilu.gov.cn/info/iList.jsp?cat_id=10076 (last visited April 23, 2021) (list and profiles of BRI countries); *see also* Green Belt and Road Initiative Center, *Countries of the BRI*, <https://green-bri.org/countries-of-the-belt-and-road-initiative-bri/> (last visited April 23, 2021).
 58. CLASP, *supra* note 8, at 6.
 59. *See* China Ministry of Ecology and Environment, Transcript of Monthly Press Conference in August 2019 [生态环境部 2019 年 8 月例行新闻发布会实录] (Aug. 30, 2019), http://www.mee.gov.cn/xxgk2018/xxgk/xxgk15/201908/t20190830_730891.html.
 60. China Ministry of Ecology and Environment, Transcript of Monthly Press Conference in August 2019 [生态环境部 2019 年 8 月例行新闻发布会实录] (Aug. 30, 2019), http://www.mee.gov.cn/xxgk2018/xxgk/xxgk15/201908/t20190830_730891.html; *See also* The Beijing Consultative Meeting on South-South Cooperation on Climate Change (Nov. 2015), <https://www.un.org/sustainabledevelopment/wp-content/uploads/2015/11/Beijing-Meeting.pdf> (discussing challenges and recommendations for south-south climate-change cooperation, including UN entities’ facilitative role).
 61. U.S.-China Joint Presidential Statement on Climate Change, WHITE HOUSE OFFICE OF THE PRESS SEC’Y (Sept. 25, 2015), <https://obamawhitehouse.archives.gov/the-press-office/2015/09/25/us-china-joint-presidential-statement-climate-change> (“China announces that it will make available ¥20 billion for setting up the China South-South Climate Cooperation Fund to support other developing countries to combat climate change”).
 62. China Ministry of Ecology and Environment, *supra* note 59.
 63. China Ministry of Ecology and Environment, *supra* note 59.
 64. President Xi Jinping, President of China, *Speech at Opening Ceremony of Paris climate summit*, CHINA DAILY, (Dec. 1, 2015), <https://www.chinadaily.com.cn/world/XiattendsPari>

- sclimateconference/2015-12/01/content_22592469.htm.
65. CLASP, *supra* note 39, at 8 (stating that China supplied around 80% of the room ACs imported into the study countries).
 66. Marc J. Schniederjans et al., *Consumer Perceptions of Product Quality Revisited: Made in China*, 18(3) QUALITY MANAGEMENT JOURNAL (2011) ("An earlier consumer perception study of manufactured products revealed through value metrics that China had quality management problems. This paper revisits and expands the application of the same quality metrics into a longitudinal study. The authors measure the current state of product quality improvement in Chinese manufactured goods by U.S. customer perceptions and compare them to the previous state of quality from the prior study. The results reveal a continued, substantial, and consistent need for Chinese manufacturers to focus additional efforts toward improving product quality in almost all product lines.")
 67. Made in China 2025 [中国制造 2025] (Issued by China State Council, May 19, 2015), http://www.gov.cn/zhengce/content/2015-05/19/content_9784.htm.
 68. China Ministry of Industry and Information Technology, Interpretation of "Made in China 2025": Fully Promote Green Manufacturing and Accelerate the Construction of Ecological Civilization [《中国制造 2025》解读之：全面推行绿色制造 加快建设生态文明], (July 8, 2015), https://www.miit.gov.cn/ztzl/lszt/zgzz2025/zcjd/art/2020/art_5183349830704af084057f04ef30ad7f.htm l.
 69. Made in China 2025, *supra* note 67.
 70. The Chinese AC industry has also demonstrated its technical capacity for the industry transition to high quality products. For example, Gree, the world's largest residential AC manufacturer, in partnership with Tsinghua University, was selected as one of the winners in the Global Cooling Prize, an international innovation competition to develop a super-efficient, more climate friendly, and affordable cooling solution. See Global Cooling Prize, <https://globalcoolingprize.org/> (last visited May 18, 2021).
 71. See, e.g., U.N. Environment Programme, Decisions Adopted by the Thirty-First Meeting of the Parties to the Montreal Protocol, 9 (Nov. 11, 2019), <https://ozone.unep.org/system/files/documents/MOP-31-9-Add-1E.pdf> (illustrating that the Montreal Protocol governs refrigerants and is increasingly addressing cooling equipment efficiency).
 72. U.N. Environment Programme, *In Support of Climate Action, Cool Coalition Partners Announce Huge Push on Efficient, Climate-Friendly Cooling* (Sept. 23, 2019), <https://www.unenvironment.org/news-and-stories/press-release/support-climate-action-cool-coalition-partners-announce-huge-push> (illustrating a multi-nation support for climate-friendly cooling).
 73. See U4E, MODEL REGULATION GUIDELINES FOR ENERGY-EFFICIENT AND CLIMATE-FRIENDLY ACs (Sept. 2019), <https://united4efficiency.org/resources/model-regulation-guidelines-for-energy-efficient-and-climate-friendly-air-conditioners/> (providing model guidelines for climate friendly ACs); See also U4E, *Partners*, <https://united4efficiency.org/partners/> (noting that Chinese companies, such as Gree and Sanhua are members of U4E, as well as China National Institute of Standardization).
 74. Togar M. Simatupang et al., *The Emergence of Value Chain Thinking*, INT. J. VALUE CHAIN MANAGEMENT, 8(1):40 (2017) ("A Value Chain shows how a product moves from the stage of raw materials to the end consumer. This includes a wide range of activities required to handle a product or service from the conception, through various phases of production (involving a combination of physical transformation and input from various services producers), delivery to the final consumers, and final disposal after use.").
 75. Implementation Opinions on Supporting the Sale of Export Products on Domestic Market, *supra* note 2.
 76. See U4E, MODEL REGULATION GUIDELINES, https://united4efficiency.org/wp-content/uploads/2020/02/Model-Regulation-Guidelines_2-Page-Brief_all-products_20200205.pdf (providing globally model regulations for a variety of electrical appliances). See generally Stephen O. Andersen et al., *Defining the Legal and Policy Framework to Stop the Dumping of Environmentally Harmful Products*, 29 DUKE ENV'T L. & POL'Y F. 1 (2018), <https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=1356&context=delpf.NEP>.
 77. See generally George A. Akerlof, *The Market for "Lemons": Quality Uncertainty and the Market Mechanism*, 84 Q. J. OF ECON., 488, 488-500 (1970).
 78. Guiding Opinions on Promoting the Construction of Green BRI [关于推进绿色“一带一路”建设的指导意见] (promulgated by China Ministry of Environmental Protection (now Ministry of Ecology

- and Environment), Ministry of Foreign Affairs, National Development and Reform Commission, and Ministry of Commerce, April 24, 2017) https://www.mee.gov.cn/gkml/hbb/bwj/201705/t20170505_413602.htm (“推进绿色生产、绿色采购和绿色消费，加强绿色供应链国际合作与示范” [“Promote green production, green procurement and green consumption; and strengthen international cooperation and demonstration of green supply chains”]); GREEN INVESTMENT PRINCIPLES FOR THE BELT AND ROAD (2018) <https://gipbr.net/SIC.aspx?id=170&m=2> (co-initiated by the Green Finance Committee of China Society for Finance and Banking and the City of London Corporation’s Green Finance Initiative) (“Principle 6: Adopting green supply chain management. We will integrate ESG factors into supply chain management and utilize international best practices such as life cycle accounting on GHG emissions and water use, supplier whitelists, performance indices, information disclosure and data sharing, in our investment, procurement and operations.”).
79. *See* Silk Road Fund, *Overview*, <http://www.silkroadfund.com.cn/enweb/23775/23767/index.html> (describing President Xi Jinping’s announcement in 2014 of a total of forty billion USD to establish the Silk Road Fund. The Silk Road Fund is “dedicated to supporting infrastructure, resources, and energy development, industrial capacity cooperation and financial cooperation in countries and regions involved in the BRI.”).
80. *U.S.-China Joint Presidential Statement on Climate Change*, *supra* note 61.
81. *See generally* THE INST. FOR GOVERNANCE AND SUSTAINABLE DEV. & OZONACTION/UNITED NATIONS ENVIRONMENT, BUYERS CLUB HANDBOOK, 1, 16 (Jan. 2020), <http://www.igsd.org/wp-content/uploads/2020/07/Buyers-Club-Handbook-Jan2020.pdf> (“A ‘buyers club’ is any organization or team working to enhance the benefits to the buyer through, *inter alia*, lowering the price and increasing the quality of a standardized product by buying in bulk and managing distribution and installation... Any organization seeking to lower the price and increase the quality of a standardized product can work to pool the collective purchasing power of its members by buying in bulk and streamlining distribution and installation. The non-government buyers club pools the collective power of private companies and citizens for bulk purchases or for lower prices through normal supply chains.”).
82. Zhengfu Caigou Fa (政府采购法) [China Government Procurement Law] (promulgated by the Standing Comm. Nat’l People’s Cong., Aug. 31, 2014, effective Aug. 31, 2014), art. 9, http://www.npc.gov.cn/wxzl/gongbao/2014-11/18/content_1892150.htm; Jieyue Nengyuan Fa (节约能源法) [China Energy Conservation Law] (promulgated by the Standing Comm. Nat’l People’s Cong., Oct. 26, 2018, effective Oct. 26, 2018), art. 51, http://www.npc.gov.cn/zgrdw/npc/xinwen/2018-11/05/content_2065665.htm.
83. Guidelines on Green Corporate Procurement (Provisional) [企业绿色采购指南（试行）] (promulgated by China Ministry of Commerce, Ministry of Environmental Protection (now Ministry of Ecology and Environment), and Ministry of Industry and Information Technology, Dec. 22, 2014, effective Jan. 1, 2015), <https://www.ameco.com.cn/uploads/企业绿色采购指南（试行）.pdf>.
84. *See generally* U4E, MODEL REGULATION GUIDELINES FOR ENERGY-EFFICIENT AND CLIMATE-FRIENDLY ACS (Sept. 2019), <https://united4efficiency.org/resources/model-regulation-guidelines-for-energy-efficient-and-climate-friendly-air-conditioners/>.
85. Regulation on Administration of Ozone Depleting Substances [消耗臭氧层物质管理条例] (promulgated by China State Council, April 8, 2010, effective June 1, 2010) http://www.gov.cn/zw/gk/2010-04/16/content_1583769.htm. *See also*, Press Release, *China Releases Public Comment Version of Amendment to the National Regulation on Administration of Ozone-Depleting Substances*, INST. FOR GOVERNANCE & SUSTAINABLE DEV. (May 21, 2020), <https://www.igsd.org/china-releases-public-comment-version-of-amendment-to-the-national-regulation-on-administration-of-ozone-depleting-substances/> (with link to English translation of the Regulation on Administration of Ozone Depleting Substances and Hydrofluorocarbons (Draft Amendment for Comments) for reference purposes).
86. Biaozhunhua Fa (标准化法) [China Standardization Law], *supra* note 36 (showing a somewhat stark contrast between Article 26 of China’s Standardization Law with Article 25 of the same law, which specifies “products and services that do not meet [China’s] mandatory standards shall not be produced, sold, imported or supplied.” Essentially, if

- the products that don't meet compulsory standards cannot be produced, they would not be available for exports, either).
87. Jieyue Nengyuan Fa (节约能源法) [China Energy Conservation Law] (promulgated by the Standing Comm. Nat'l People's Cong., Oct. 26, 2018, effective Oct. 26, 2018) http://www.npc.gov.cn/zgrdw/npc/xinwen/2018-11/05/content_2065665.htm.
 88. *Id.*
 89. Min Fa Dian (民法典) [China Civil Code] (promulgated by the Nat'l People's Cong., May 28, 2020, effective Jan. 1, 2021) <http://www.npc.gov.cn/npc/c30834/202006/75ba6483b8344591abd07917e1d25cc8.shtml>.
 90. Huanjing Baohu Fa (环境保护法) [China Environmental Protection Law] (promulgated by the Standing Comm. Nat'l People's Cong., April 24, 2014, effective Jan. 1, 2015) http://www.gov.cn/zhengce/2014-04/25/content_2666434.htm.
 91. Central Government of China, *Ministry of Finance: "energy conservation product consumer benefit project" has achieved significant outcomes* [财政部：“节能产品惠民工程”取得显著成效] (July 12, 2013), http://www.gov.cn/gzdt/2013-07/12/content_2445751.htm (“2009年6月-2011年5月，将能效等级2级及以上水平的高效节能定频空调纳入推广补贴范围，……两年时间，中央财政累计安排补贴资金146.43亿元。” (stating that “from June 2009 to May 2011, energy-efficient fixed-speed ACs with energy efficiency levels of II and above were included in the scope of promotion subsidies... In two years, the central financial administration has arranged a total of 14.643 billion yuan in subsidies.”)).
 92. *Id.* (“高效节能空调的市场占有率从推广前的5%上升到70%以上。” (stating that “the market share of energy-efficient ACs rose from 5% before promotion to more than 70%.”)).
 93. *Id.* (“推广高效节能定频空调超过5000多万……实现年节电100亿千瓦时” (reporting that from June 2009 to May 2011, the energy-efficient AC subsidy policy has “promoted more than fifty million energy-efficient fixed-speed ACs . . . and realized annual energy savings of ten billion kWh”).
 94. *China subsidizes purchases of energy-saving appliances*, CHINA DAILY (May 17, 2012), https://www.chinadaily.com.cn/business/2012-05/17/content_15958861.htm (reporting that “[t]he State Council, or China's Cabinet, announced Wednesday the government will earmark 26.5 billion yuan (\$4.2 billion) to subsidize the consumption of household electrical appliances for a one-year period. The appliances include ACs, flat-panel television sets, refrigerators, washing machines and water heaters that meet energy-saving standards.”).
 95. EUROPEAN COMMISSION, THE AVAILABILITY OF REFRIGERANTS FOR NEW SPLIT AIR CONDITIONING SYSTEMS THAT CAN REPLACE FLUORINATED GREENHOUSE GASES OR RESULT IN A LOWER CLIMATE IMPACT 5, 10 (Sept. 30, 2020), https://ec.europa.eu/clima/sites/clima/files/news/docs/c_2020_6637_en.pdf (stating that R290 is a substitute for higher-GWP refrigerants, with a GWP of 3 and ozone-depletion potential of zero).
 96. *See generally* Yu hao, *Market Share of R290 ACs Goes Up Again [R290 空调市场化再上台阶]*, REFRIGERATION BULLETIN (Nov. 2, 2020), https://bao.hvacr.cn/202011_2089762.html (showing growing acceptance of R290 as a climate-friendly refrigerant).
 97. CHINA DAILY, *supra* note 94.
 98. *See* Agreement on Subsidies and Countervailing Measures, Apr. Annex I(f)-(g); Annex II (II)(1)-(2), Apr. 15, 1994, Marrakesh Agreement Establishing the WTO, Annex 1A, 1869 U.N.T.S. 1; Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade, art. 2.1-2.3, Apr. 15, 1994, Marrakesh Agreement Establishing the WTO, Annex 1, 1868 U.N.T.S. 201. (guiding parties to apply duties to import products that are below fair market value; normal market value is determined by the domestic price of the product from the exporting country, or when unobtainable, by the price charged by the exporter in a third country, or through the exporter's production costs and expenses, and normal profit margins).
 99. Zhengfu Caigou Fa (政府采购法) [China Government Procurement Law] (promulgated by the Standing Comm. Nat'l People's Cong., Aug. 31, 2014, effective Aug. 31, 2014), art. 9, http://www.npc.gov.cn/wxzl/gongbao/2014-11/18/content_1892150.htm; *See also* Jieyue Nengyuan Fa (节约能源法) [China Energy Conservation Law] (promulgated by the Standing Comm. Nat'l People's Cong., Oct. 26, 2018, effective Oct. 26, 2018), art. 51, http://www.npc.gov.cn/zgrdw/npc/xinwen/2018-11/05/content_2065665.htm.
 100. *See supra* note 98 and accompanying text.