

EU-China relationship in a new era of global climate governance

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Abstract

Global climate governance still faces serious challenges despite the achievement of the epochal Paris Agreement in 2015. Whether and how the world will reach the 1.5-degree target remains difficult to foresee, although undoubtedly one of the necessary conditions is greater cooperation among the major emitters. In this light, the decisions by the US government, the second largest GHG emitter in the world, to quit the Paris Agreement has significant ramifications. Another source of uncertainty is the EU's climate policy, which has long been a role model for the world; it will likely have to undergo through striking change since the decision by the UK to exit the EU, which will take place in 2019. Against this backdrop, this article argues that strengthened cooperation between EU and China – the world's largest GHG emitter, but also its largest investor in renewable energy and an increasingly vocal voice for climate action – is indispensable for meaningful climate change mitigation and adaptation, even if the end results still fall some way short of the ambitions outlined in the Paris Agreement. Diverging economic and political interests still exist, but there is also much common interest and ample room for collaboration. We review the progress and problems in EU-China cooperation on climate change and identify plausible future directions in the light of current international political and economic conditions.

Key words: China-EU cooperation; climate governance; Paris Agreement

1 Introduction

As a global public good, climate change mitigation cannot be addressed without global cooperation and action. As such, climate change will remain one of the world's most pressing challenges. Over the past two decades, the international community has consistently invested a great deal of effort and resources in establishing a more realistic and effective regime of cooperation, although the levels of willingness of different countries have differed, sometimes significantly. Nonetheless, these efforts, in December 2015, led to the epoch-making Paris Agreement, which transformed international climate governance from a distributional conflict over legally binding targets into a bottom-up process of voluntary mitigation pledges (Hilton and Kerr, 2017). So far, with the official ratification of 147 countries, the agreement has led to significant progress in global climate change cooperation.

However, the Paris Agreement is merely a starting point for globally efforts to mitigate climate change, not the permanent solution. Above all, whether and how the

world will reach its 1.5-degree target – i.e., the exact mechanisms – remain intangible and have even been viewed with skepticism (Walsh et al., 2017). Worse still, the US, the second largest greenhouse gas (GHG) emitter and widely considered to be an indispensable leader in global climate governance, announced its intention to quit the Paris Agreement less than a year after it came into effect. Furthermore, the sluggish global economy may diminish the interests and abilities of countries to invest and take action in mitigating GHG emissions. In this case, to prevent the potential negative effects of the US withdrawal and promote a global low-carbon transition, a more robust and consolidated global climate regime with effective leadership needs to be advanced.

In sharp contrast to the US, and for the first time, China has proposed a cap-based emissions reduction target, i.e., peaking emissions by 2030, which indicated high national ambitions for a low-carbon transition – as a policy action it is unprecedented for a developing country. The emissions peak goal is not a blind target, but based on a range of scenario-based studies and past efforts by China to reduce the carbon intensity of its economy (Hilton and Kerr, 2017). Indeed, since the 12th Five-Year Plan (FYP) Period (2011-2015), China has entered a “New Normal” era of development, which features increasing alignment between China’s economic and environmental agendas. A low-carbon transition, previously viewed as a burden for China’s development, has become a strategic opportunity to address the growing domestic environmental crisis (e.g., severe urban air pollution and related social and political risk), mitigate the detrimental impact on its international image caused by ever-increasing emissions, and occupy a strong position in the world market for low carbon technologies (Hilton and Kerr, 2017).

The EU, the earliest and most long-standing pioneer and leader of low-carbon development, has set up an international standard for climate action. A look at the EU and China’s efforts to tackle climate change indicates a large swathe of common interests: both believe that measures need to be taken to reduce GHG emissions, and both set impressive objectives to be realized (Men, 2014). Representing two of the most influential geopolitical entities in the world, as well as the two largest economies measured in purchasing power parity, continued EU-China cooperation will make significant contributions to the advancement of an effective global climate regime.

Firstly, the EU and China account for approximately one-third of global GHG emissions. Thus, the partnership can make a decisive contribution to emissions mitigation (De Matteis, 2010). Secondly, after years of gridlock and tough negotiations, the Paris Agreement was finally achieved. With the retreat of the US, EU-China cooperation is necessary to safeguard global confidence in multilateralism and the authority of the United Nations. Thirdly, as two of the most powerful parties in the global economy and in geopolitics, the EU-China cooperation could be a role model for other economies and a testing ground for bold strategies of combatting climate change. If this cooperation is able to set new international standards without harming domestic economic and social interests, it might well be able to maintain collaborative momentum internationally, catalyze new global initiatives, and pull the US back from its increasing isolationism (Holzer and Zhang, 2008). Finally, as the largest group of industrialized countries and the largest developing country, cooperation between EU and China can bridge the traditional gap between the “Global North” and the “Global South”, in climate change and potentially in other fields of common interest.

This paper aims to review the progress and challenges of EU-China cooperation in fighting climate change over the last several decades, and to identify new directions for deepening cooperation.

2 The history of EU-China cooperation on climate change

In recent years, the EU and China have deepened and broadened their engagement on trade and investment, as well as in diplomatic and political relations (Christiansen and Maher, 2017). EU-China cooperation on climate issues started from a sectoral energy dialogue in 1994 (Men, 2014), which included issues such as renewable energy, energy efficiency, clean coal technology (near zero emissions) and other new technologies in the energy sector (Snyder, 2009). The first outcome of the dialogue was the establishment of a bi-annual Energy Cooperation Conference with the aim of gathering all interested parties in energy-related issues, including scholars, enterprises and universities (De Matteis, 2010). The dialogue on environmental issues, including biodiversity, climate change, water and air pollution was launched in 1996 and then upgraded to a ministerial-level activity in 2003 (Men, 2014).¹ At the 8th EU-China summit meeting in September 2005, the “EU-China Joint Declaration on Climate Change” was issued to confirm the establishment of the EU-China Partnership on Climate Change. Since then, the dialogue on climate change has been institutionalized in bilateral summits, and climate change has been at the very heart of the bilateral relationship (De Matteis, 2010). More importantly, the “Bilateral Consultation Mechanism” brought together not only the European Commission (EC), but also the Presidency and the Member States (De Matteis, 2010). Table 1 lists some key documents and programs of EU-China cooperation on climate change in recent years.

Table 1 Documents and programs of EU-China cooperation on climate change

Year	Documents
2005	EU-China Joint Declaration on Climate Change
2006	The rolling work plan of China-EU Partnership on Climate Change
2010	Joint Statement on Dialogue and Cooperation on Climate Change
2010	EU-China Environmental Governance Program
2012	EU-China Environmental Sustainability Program
2013	EU-China 2020 Strategic Agenda for Cooperation
2015	EU-China Joint Statement on Climate Change

More specifically, EU-China cooperation on climate change has been carried out in several key fields.

(1) Clean Development Mechanism (CDM) Project

In 2007, the EC invested 2.3 million euros and launched the “EU-China CDM Facilitation Project” to strengthen and improve the CDM framework in the two countries. Under the Kyoto Protocol, the EU was the main investor in CDM projects and buyer of certified emissions reduction, while China was the main supplier. In 2013, 50.59% of the CDM projects were registered in China (Jin, 2015). The facilitation project played an important role in China’s GHG emissions reduction. For example, in China’s CDM projects, equipment from the EU accounts for 47% of the total (Jin, 2015). In 2009, 53% of carbon credits in China were bought by EU companies (Jin, 2015).

¹ General co-operation with China: <http://ec.europa.eu/environment/internationalissues/relationchinaen.htm>

More importantly, although CDM is profit-oriented and is likely to be replaced by the emerging program of Chinese Certified Emission Reduction for Chinese companies, the material incentives provided by the EU through the CDM have had a discernible effect on the inculcation of many climate protection norms in China (Belis and Kerremans, 2016; De Matteis, 2012).

(2) Carbon Capture and Storage (CCS) Project

At the 6th China-EU Energy Conference in Shanghai in February 2006, the China-EU Near Zero Emission Coal (NZEC) project was initiated. With the aim of capturing and storing CO₂ emissions from coal-fired power plants by 2020, the project was expected to develop and demonstrate CCS technology in the EU and China. In June 2009, the EC adopted a Communication on Demonstrating Carbon Capture and Geological Storage in emerging economies and developing countries. This provided financing for the NZEC, pledging €57 million for the demonstration and evaluation of CCS in cooperation with China. The EU and China have also signed a MOU of cooperation on NZEC Power Generation Technology through CCS to launch the second phase of the project. Nonetheless, the project is still in an initial, experimental phase. Formal commercialization still faces uncertainty in costs, technology and environmental risk. In addition, the ability of China to obtain the necessary equipment has also been a concern (Romano, 2010).

(3) Clean Energy

The Europe-China Clean Energy Centre (EC2) was launched in 2010 and aimed to promote clean energy development in China through technology cooperation, institutional advisory services, capacity building and dissemination. With China becoming the world leader in solar panel and wind turbine production, the EU-China economic relationship has become increasingly defined by clean energy-related trade. China mainly imports raw materials and relevant equipment from the EU, and exports photovoltaic panels back. The EU is the major market for solar and wind components made by China. In 2012, 75% of solar component and 40% of wind power component imports by EU member states came from China.²

China and the EU have already become interdependent in the photovoltaic industry. Therefore, when trade frictions over photovoltaic panels between China and the EU occurred in 2013, 18 member states of the European Union opposed taking trade measures against China, and over 1,000 photovoltaic companies submitted a collective petition to the EC opposing punitive tariffs on Chinese companies (Jin, 2015). In February 2017, the EC decided to phase out anti-dumping duties on Chinese solar panel imports within 18 months.³

(4) Low-Carbon Cities

To flesh out bilateral cooperation in administrative terms, and aside from the national level, a number of Chinese cities have partnered with cities of EU member states to promote exchange on policies, planning and good practices for low-carbon development and climate resilience. For example, in 2008, the EC, together with the United Nations Development Program (UNDP) and Norway, launched “Provincial Programs for Climate Change Mitigation & Adaptation in China”, which involved 14 Chinese provinces and aimed at translating China's National Climate Change Program

² Renewables: Energy and Equipment Trade Developments in the EU:
<http://ec.europa.eu/economyfinance/publications/europeaneconomy/2014/pdf/ee13en.pdf>

³ EU scales back tariffs on Chinese solar panels:
<https://www.ft.com/content/ac91fa36-1835-331d-8b63-3cde54c65790>

into local action, and to improve the capacity of local governments to adapt to climate change”.⁴ More widely reported, European involvement has been substantial in China’s eco- and low-carbon city projects, such as in Qingdao (German partners), Tangshan-Caofeidian and Wuxi (Swedish partners), Shanghai-Chongming-Dongtan (British partners), Beijing-Mentougou (Finnish partners), Shenzhen-Longgang-Pingdi (Dutch partners) and Wuhan-Caidian (French partners) (De Jong et al., 2017).

In addition, various forms and levels of bilateral cooperation have been achieved at the ministerial level. For example, in 2005, the EC established direct contacts with the National Development and Reform Commission (NDRC), the energy administration in China, and set up annual ministerial-level dialogues, which have started delivering concrete results by developing projects and fostering the transfer of technological know-how. Since 2006, the EC has established cooperation with the legislative office of the State Council, which allows European stakeholders to directly share their concerns and proposals with the heart of the Chinese bureaucracy on policy-making, such as with the Energy Law of China. Similarly, the cooperation of the EU and China’s National Institute for Standardization directly influenced the efficiency labeling system applied to Chinese electrical appliances, which strictly followed the European Eco-Design directive (Chatham House, 2007). China has sought inspiration from the EU in developing other energy-related policies and requirements such as the emissions standards for car exhaust, the use of the EU system for registration, evaluation and authorization of chemicals and the introduction of the “Circular Economy Promotion Law” in 2008 (Davis and Hall, 2006). In 2009, the EC signed a Memorandum with the Ministry of Housing and Urban-Rural Development to explore the issue of energy efficiency in Chinese buildings. In 2014, China and the EU launched the carbon emissions trading cooperation project to support China in the construction of a national emissions trading system. In 2017, the project was further strengthened with a €10 million contribution from the EU.

Furthermore, China has had the opportunity to use part of the funding provided by the 6th and 7th EU Framework Research Programs (FPs), where China participated in over 200 science and technology projects, receiving €46 million over five years (Gill and Murphy, 2008). The FPs have also become a foreign policy tool for the EU, in order to push cooperation in specific fields, particularly those related to the environment, energy and development. Also, the EC’s work on climate change is supported by two other major EU-China environmental cooperation programs: the River-Basin Management Program, with an EU contribution of €25 million, and the EU-China Biodiversity Program, with an EU contribution of €30 million (Romano, 2010).

In a nutshell, these bilateral initiatives and institutional frameworks are important for facilitating exchange and understanding, to reduce misperceptions and to work towards constructive cooperation (Men, 2014). The fight against climate change could thus transform environmental protection and energy security from challenges to opportunities for furthering China-EU relations (De Matteis, 2010).

3 The necessity and challenge of EU-China cooperation

3.1 Necessity

Chinese authorities have strong incentives to learn from the expertise and attract investment from advanced economies (De Jong et al., 2017). Due to rapid

⁴ "Provincial Programmes for Climate Change Mitigation & Adaptation in China" Project Launched: <http://en.ccchina.gov.cn/Detail.aspx?newsId=32084&Tid=96>

urbanization and industrialization, China has been confronted with daunting environmental pollution, which has prompted widespread domestic public complaints and frequent protests (Liu and Jong, 2017), as well as international political pressure. But given the fact that China's GDP per-capita is still less than 1/3 of US' level (even in purchasing-power parity terms), China is reluctant to sacrifice economic growth for environmental improvement and has been searching for a more balanced development pattern, namely minimizing environmental impact while maximizing economic gains. In this respect, as shown in Figure 1, the EU is naturally a role model for China, especially compared to the US: emissions in the EU were reduced by 22% between 1990 and 2015 while the economy grew by 50% over the same period.⁵ In addition, during the past 15 years, as shown in Figure 2, GHG emissions per GDP, energy use per GDP and emissions per energy use in China have been much higher than in the EU. Despite its best efforts, China still does not possess the full capabilities, know-how and technology to draft and implement all the appropriate policies to prepare itself for climate challenges (Men, 2014). Therefore, China has been keen to learn from the EU and obtain the latter's assistance in low-carbon technological development to meet its high demands for clean energy and to facilitate its transition from a labor-intensive economy to a technology-driven one (De Matteis, 2010).

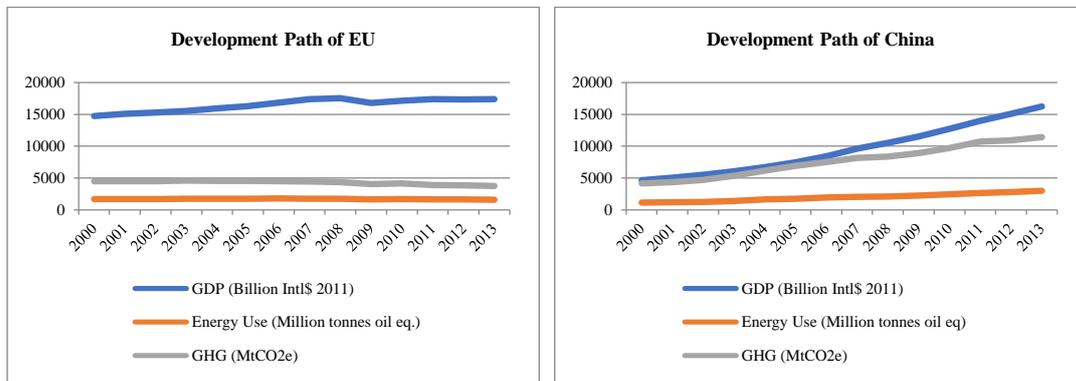


Figure 1 The development paths of the EU and China
Data source: CAIT Climate Data Explorer (<http://cait.wri.org/>)

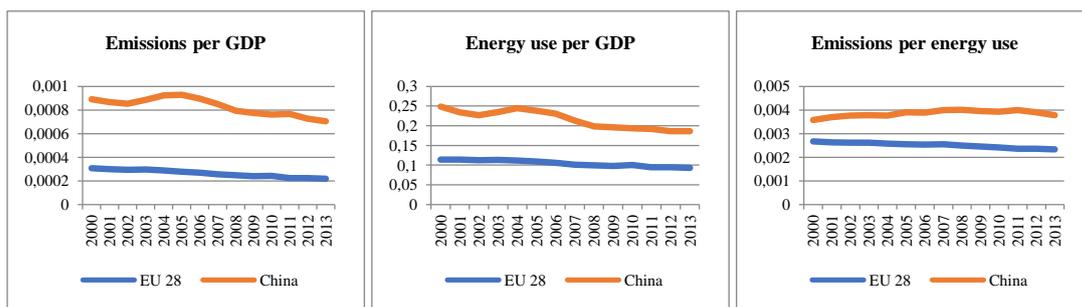


Figure 2 The energy use, emissions, and GDP levels of the EU and China
Note: GDP (Million Int\$ 2011), GHG emissions (MtCO₂e), Energy Use (Kilotons of oil eq.)
Data source: CAIT Climate Data Explorer (<http://cait.wri.org/>)

For the EU, as a technologically advanced economy, China is and will be a large, possibly the largest, export market for its clean technologies and services. The EU has been a forerunner in the renewable energy field: up to 2011, 44% of the world's clean

⁵ Progress made in cutting emissions: https://ec.europa.eu/clima/policies/strategies/progress_en

energy patents were filed by the member states of EU (Jin, 2015).⁶ By the end of 2009, China had imported about 30,000 technologies from the EU, among which clean energy technologies accounted for a significant share.⁷ Currently, the potential for such technology transfers is even higher as China's economic policy has begun to prioritize a transition away from fossil fuel-intensive growth based on heavy industry and mass exports, towards a more balanced economy characterized by slower growth and a focus on innovation and low-carbon technologies (Hilton and Kerr, 2017). In addition, the EU could to some extent avoid economic conflicts in the energy supply market by pushing China to diversify its energy demand and to improve its energy efficiency (De Matteis, 2010). Additionally, as Stern (2007) has estimated, trade and investment markets for low-carbon energy products are likely to be worth at least \$500 billion per year by 2050; the possible economic gains for the two parties are an attractive basis for further engagement.

Furthermore, it has been argued that the EU's margin for maneuver in international affairs is diminishing and its leading role in global climate change governance has weakened, particularly since the Copenhagen climate conference (De Matteis, 2010). A large-scale survey by Parker et al. (2017) verifies this: Figure 3 documents recognition of global climate governance leadership from 3557 interviewees from COP 14 in 2008 to COP 21 in 2015. Obviously, although the EU has been perceived as one of the top three most influential leaders, the EU's high self-conception of itself as a climate leader has not been matched by the respondents (Parker et al., 2017). Over the 8-year period, the recognition of the EU as a global climate governance leader dropped by 21%. In contrast, the recognition of China and the US as leaders increased by 7% and 32%, respectively (Parker et al., 2017). But given the fact that the US has indicated its intention to quit the Paris Agreement, its status is now in jeopardy, to say the least. In addition, the fact that no leader has been able to consistently register over 50% support shows that the world has lacked a single, obvious leader in the field of climate change; this condition can be described as a fragmented leadership landscape (Parker et al., 2017). Therefore, in current climate change governance, the EU and China are natural partners in leading global cooperation into the future.

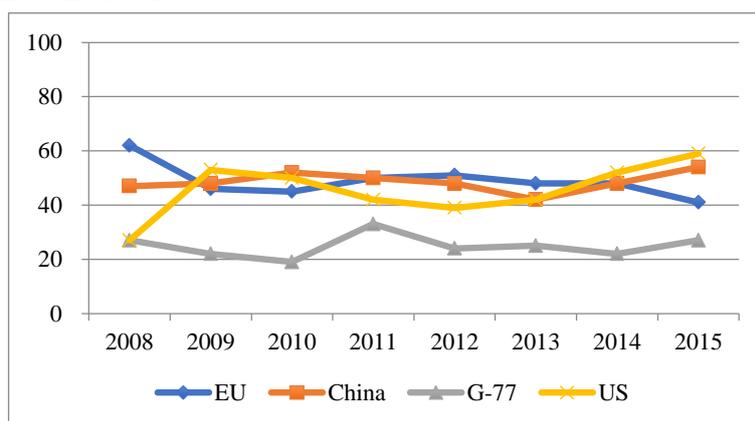


Figure 3 Global climate change governance leadership recognition (%)

Source: Parker et al. (2017)

⁶ Renewables: Energy and Equipment Trade Developments in the EU:

http://ec.europa.eu/economy_finance/publications/european_economy/2014/pdf/ee1_3_en.pdf

⁷ China-EU Clean Energy Center launch in Beijing: http://news.xinhuanet.com/2010-04/30/c_1266167.htm

Through bilateral cooperation in the global climate regime, both China and the EU can further their statuses and interests in the international arena (De Matteis, 2010). The EU can consolidate its leading role by demonstrating how it can help and influence China in the latter's difficult transition to low-carbon development. China could tackle its local challenges, offset conflicts of interest with other countries, and improve its international image. In addition, compared with other potential partners for China such as the US and Japan, its relationship with the EU is less fraught with diplomatic tensions. Furthermore, in contrast to the US, the EU has been keener to engage with China as a way of raising its own international standing (De Matteis, 2010).

3.2 Challenges

Climate change mitigation is viewed by the Chinese and European governments as not only a matter of environmental policy but also of industrial policy and social policy. Therefore, despite increased bilateral cooperation on climate change, both the EU and China admit that there are differences in principles and policies (Men, 2014). Generally speaking, these conflicts can be summarized as having three aspects: political and cultural differences, economic conflicts and technology transfer issues.

(1) Political and cultural differences

Central ideas in Montesquieu's "The Spirit of Laws" regarding political liberty, checks and balances and separation of powers have deeply influenced European public morality and expectations on good governance. Other than being regarded as a Communist political system, China's administrative traditions are built on far more ancient and deeply ingrained Confucian and legalist foundations, which promote political values sometimes diametrically opposed to those of power fragmentation and individual autonomy (De Jong et al., 2017). Such East-West differences have led to certain misconceptions, even in climate governance.

For example, Chinese energy diplomacy carried out via its national oil companies or ad hoc international institutions, such as the Shanghai Cooperation Organization or the Association of South East Asian Nations (ASEAN), is thought to determine a more confrontational approach vis-a-vis other countries, unless China increases its awareness of other players' interest in various regions (De Matteis, 2010). Europeans think an emerging "Beijing Consensus" risks undermining the EU's efforts to boost good governance in large part because the latter pays close attention to their neighbors for energy reasons, as is the case of Central Asia and Russia, and, for historical reasons, as is the case of African countries (De Matteis, 2010). At lower levels, in a series of China-EU low-carbon city programs in China, De Jong et al. (2017) also found tensions resulting from cultural and political differences, such as the limited willingness and capability among European players to invest large sums of money, the limited willingness and capability among Chinese players to pay for consultancy services and knowledge rather than physical deliverables, misconceptions on both sides regarding the value of long-term personal relationships in doing business, and misguided European attitudes of superiority and lack of time and effort spent on understanding the complexities of the Chinese cultural context.

(2) Economic conflicts

China is moving away from a development model based on the export of labor-intensive manufactured goods and moving up the value-added chain, putting Chinese firms in direct competition with European businesses for the first time in modern history (Christiansen and Maher, 2017). Over the past few years, buoyed by

state subsidies and stimulus policies, China's industrial capacity and competitiveness in areas related to climate change, e.g., energy efficiency, clean energy and renewable energy, have grown dramatically, making China the largest producer of energy efficient light bulbs, the leader in wind energy and a major producer of solar panels (De Matteis, 2012). The rising competitiveness of Chinese manufacturers, over-capacity, and what is regarded by Western countries as "dumping" have led to frequent confrontations between the EU and China (Christiansen and Maher, 2017). In 2011, solar panels imported by EU member states from China were valued at more than 20 billion euro.⁸ In 2012, 75% of solar components and 40% of wind power components came from China.⁹

The reduced competitiveness on the EU side was a major source of discontent from similar industries. Prosun, the association for European solar manufacturers, thus organized a petition to call for targeted measures. Later on, the EC launched an anti-dumping and anti-subsidy investigation on solar panels imported from China. From August 2013, the duty on Chinese exports was increased from an initial 11.8% to 47.6%. In retaliation, China immediately decided to launch an anti-dumping and anti-subsidy probe into wine imports from the EU and threatened to conduct another probe against luxury cars.¹⁰ The probe is so far the EU's largest trade investigation and the solar panel case is also the largest EU-China trade dispute. According to a 2013 study by the Alliance for Affordable Solar Energy, the EU tariffs on solar panels from China could lead to 242,000 European job losses over the subsequent three years.¹¹ In the meantime, the dispute would also cause 400, 000 job losses in China.¹² Similarly, in 2012, the EU's unilateral carbon aviation tax, i.e., charging foreign carriers flying in EU airspace under the EU Emissions Trading System (ETS) ETS, infuriated Chinese authorities, which later suspended its orders from European manufacturer Airbus (Men, 2014).

The EU is concerned about the extent to which China is able and willing to protect European companies' intellectual property rights (IPRs) to establish a level playing field. This has increasingly influenced the extent to which the EU and its companies would be in the condition to deploy their technologies in China without fearing intellectual property theft and other commercially harmful practices (De Matteis, 2010). China's difficulties, or lack of zeal, in fulfilling its commitments in IPRs protection and market access have substantially reduced the benefits that the EU expected to gain from China's integration into the world economy, not least in areas such as energy-efficient and renewable energy technologies. For this reason, so far the EU has withheld from granting China "Market Economy Status" (De Matteis, 2012). Therefore, although the solar panel dispute was amicably settled in 2013 by the setting of a minimum price, limitation of the export volume, and duty-free allowances for Chinese companies' exports, and in February of 2017, the EC decided to completely phase out anti-dumping duties, disagreement on bilateral trade still exists, creating the risk that such disputes could bleed into and undermine climate change collaboration. At the last bilateral summit on June 2, 2017, due to the disagreement

⁸ EU and China settle trade fight over solar panels:
<https://www.ft.com/content/4e468c26-f6ab-11e2-8620-00144feabdc0>

⁹ Renewables: Energy and Equipment Trade Developments in the EU:
http://ec.europa.eu/economy_finance/publications/european_economy/2014/pdf/ee1_3_en.pdf

¹⁰ EU and China settle trade fight over solar panels:
<https://www.ft.com/content/4e468c26-f6ab-11e2-8620-00144feabdc0>

¹¹ Study Claims Solar Panel Tariffs Could Trigger 242000 Job Losses:
<https://www.euractiv.com/section/energy/news/study-claims-solar-panel-tariffs-could-trigger-242-000-job-losses/>

¹² China-EU photovoltaic products trade dispute: <http://finance.sina.com.cn/focus/umdhfq/>

over steel production and the refusal of the EU to officially recognize China as a market economy, China and the EU fell short of producing an expected joint statement on climate change.¹³

(3) Technology transfer

The political and policy differences, as well as the sometimes conflicting economic interests of the EU and China, convergence on a central issue in the bilateral partnership on climate change: technology transfers from the EU to China. On this issue, China would prefer a “centrally planned approach” within the framework of the UNFCCC, while the EU has opted for a more market-decentralized approach (Romano, 2010). However, Romano (2010) has argued that the EU may be excessively attached to free-market principles and does not constructively support European companies engaging in technology transfer. Indeed, one of the problems pinpointed by European companies in the EU-China CDM Facilitation Project reports has been the lack of economic incentives and of political support for technology transfers from the EU.¹⁴ If the EU and China remain incapable of setting up a clear framework for promoting technology transfers, their cooperation will be hard to advance.

4 Recent Developments and Trends

Different from conventional top-down and legally binding climate accords that cannot compromise the divergence between developed and developing countries, the Paris Agreement, as a voluntary framework, for the first time paved the way for China and the EU to constructively and substantially cooperate on low-carbon development. In the meantime, several recent events in the global climate regime have the potential to greatly affect EU-China cooperation.

4.1 The American Exit from the Paris Agreement

As was somewhat expected, President Donald Trump announced the US exit from the Paris Agreement in June 2017. Although the Federal Government is not the only regulatory authority in the country – 10 governors and 246 mayors have already vowed to adhere to the Paris Agreement¹⁵ – a growing consensus of observers appears to think that China will seize the opportunity to exercise greater leadership in the global climate governance and international affairs more generally (Lee and Wang, 2017).¹⁶ Yet the Chinese government still lacks the complete diplomatic toolbox to take over the leadership role vacated by the US (Dröge, 2016). As discussed above, a joint leadership with the EU would be more feasible, and thus more imperative.¹⁷ Indeed, the US exit also offers the EU an opportunity to consolidate its role in climate change diplomacy, which may yield benefits in terms of improved image and credibility for the EU, at a time when it is facing an escalation of its own economic

¹³ EU and China fail to issue statement on climate at summit:

<http://climateobserver.org/eu-china-fail-issue-statement-climate-summit/>

¹⁴ EU-China CDM Facilitation Project- Technology Transfer in CDM projects in China:

<http://neec.no/uploads/EU-China%20CDM-TT%20report.pdf>

¹⁵ 246 mayors adopt Paris climate accord after U.S. pulls out (updated):

<https://www.curbed.com/2017/6/1/15726376/paris-accord-climate-change-mayors-trump>; US mayors, governors vow to stick with Paris accord:

<http://edition.cnn.com/2017/06/01/us/trump-climate-deal-cities-states-defying/index.html>

¹⁶ U.S.-China Climate Relations: Beyond Trump, Real Clear World

http://www.realclearworld.com/articles/2017/04/27/us-china_climate_relations_beyond_trump.html

¹⁷ EU and China can outflank Trump on climate change:

<http://www.climatechangenews.com/2017/02/16/eu-and-china-should-join-forces-on-climate-change/>

and political difficulties. At the same time, the EU has the opportunity to strengthen its partnership with emerging powers such as China to obtain economic opportunities and long-term influence (De Matteis, 2012).

Indeed, before the formal exit of the US, at the COP 22 in November 2016, many participants declared that the most ambitious countries should not let the US elections get in their way, and that private investment will continue to seek out opportunities in renewable energies (Dröge, 2016). Moreover, it was pointed out that the newly established national and UN institutions for climate and development finance would be able to compensate for the lack of US support (Dröge, 2016).

4.2 Brexit

The UK was one of the first countries in the world to liberalize energy markets and has been a powerful voice in support of a fully integrated European energy market. The UK has also been a strong advocate of ambitious EU climate action, and has been central to driving collective efforts to set binding targets (Lock, 2014). Therefore, the UK has had a demonstrable impact in shaping EU climate and energy policy to date (Froggatt et al., 2016). For example, the EU ETS was in part modeled on the experience of the UK Emissions Trading Scheme (Bourn et al., 2004). The UK has also lent considerable support to the market-deepening energy policy of the EU (Froggatt et al., 2016).

In addition, the EU target of getting at least 27% of its energy from renewables by 2030 is binding on the EU as a whole. The UK, along with some other member states, argued for flexibility in meeting overall emissions reduction goals and objected strongly to specific targets for each member state, and binding energy efficiency targets for 2030. Thus, a number of member states, as well as environmental and industry groups, have been critical of the UK's energy policy (Froggatt et al., 2016). The UK's energy market is deeply integrated with that of its European neighbors and it was widely considered undesirable for it to "unplug" from Europe's energy networks (Froggatt et al., 2016).

Additionally, the UK has been the second largest GHG emitter in the EU (accounting for 13% of the EU total), and also one of the most aggressive countries in terms of commitment to GHG emissions reductions. In its 5th Carbon Budget in 2016, the UK increased its 2032 reduction target to 57% from the previous 50% target; while the EU as whole only seeks a 40% reduction by 2030 (Froggatt et al., 2016). Without the UK, the 27 member states will have to find a way to cut GHG emissions by an additional 7% in order to hit its 40% target by 2030 (Froggatt et al., 2016). The UK's participation in the EU ETS poses a further complication. Participation in the ETS as part of the single market will almost certainly conflict with the UK's refusal to accept the EU's freedom of movement stipulation.¹⁸ Therefore, with Brexit, another growing risk is that the EU's collective efforts towards ratification will devolve into fragmented, single-state commitments that undermine the EU's international climate leadership role (Froggatt et al., 2016).

5 Prospects

In light of its threat-multiplying capacity, climate change is transversally linked to a wide array of policy areas, ranging from economic growth to public health, from

¹⁸ Why Climate Change Could be Brexit's Biggest Loser:
http://www.huffingtonpost.com/j-jason-mitchell/why-climate-change-could-_b_11021204.html

development to social and political stability, from energy to environmental degradation. As such, the climate change regime has the capacity to dramatically reduce or reinforce the “strategic endowment” of international actors, including their policy discretion and capabilities. Therefore, the shape of the climate regime is likely to determine whether the international arena is transformed into a zero-sum game or whether a win-win balance is maintained (De Matteis, 2012).

Against this background, it is without doubt that a “green alliance” between the EU and China is the best option for both parties. Under the Paris Agreement, the primary currencies of international climate politics have been political leadership, financial assistance and moral suasion (Hilton and Kerr, 2017). This is exactly what China desires to demonstrate to the international community, i.e., to be recognized as a responsible global actor. While some doubt whether China can be fully incorporated into an open, rules-based international order (since, as a non-Western country, it was not party to the design and establishment of this order), the Chinese leadership has declared its strong commitment to economic globalization, multilateralism, and international regimes (Christiansen and Maher, 2017). In addition, international stability is indispensable for China’s development. As mentioned above, for a wide variety of practical geopolitical and economic reasons, the EU is an irreplaceable partner for China on climate change and global governance more generally. China’s ongoing New Silk Road (part of “Belt and Road” initiative) program is trying to connect China with Europe to create a large and interconnected “Eurasian” economic zone. When the global conditions for liberal trade are increasingly adverse, joint endeavors by the EU and China become critical for promoting confidence in globalization and multilateralism.

Additionally, current global climate governance constitutes for the EU an opportunity to strengthen its engagement with China and in the meantime maintain its competitive advantage vis-à-vis other developed nations. This type of opportunity was demonstrated in Durban, when the EU and the BASIC countries (represented by India) struck a deal that made it possible to break the negotiation deadlock (De Matteis, 2012). In January 2016, the EU and China reached an agreement on the scope of a Bilateral Investment Treaty (BIT), which will include rules on the environmental aspects of foreign investment. Whether and how to include environmental and other social standards in trade and investment agreements has long been a source of tension in EU-China relations, and also in North-South relations more generally (Gippner and Torney, 2017). The convergence of the climate change positions of the EU and China opens the door for expanding the scope for such rules, e.g., a clause committing participants to refrain from lowering environmental standards (Gippner and Torney, 2017). Specifically, future EU-China cooperation can be strengthened in the following aspects.

It should be clearer to China in which areas partnership with the EU can bolster and accelerate its domestic economic and market reforms (Lee et al., 2015). Enhanced transparency, reporting and review of GHG emissions reduction are indispensable to being recognized as a responsible and important global actor. IPRs protection of EU technology in China must be strengthened through an improved legal system that conforms to international standards. The failure of IPRs protection might bring short term corporate gains for China, but, in the long run, it will likely undermine efforts to find economic partners (De Matteis, 2010). For the EU, as Holzer and Zhang (2008) argue, in addition to political considerations in its cooperation with China, it might

also be necessary to take into greater account the interests of private actors by setting different incentives for companies to engage in technological research and distribution.

Cooperation between China and the EU should be deepened in a range of areas to make the EU-China economic relationship the de facto engine of global clean energy transformation, including strategic and long-term clean energy research, development and demonstration, joint standard-setting, and “green trade” (Lee et al., 2015). In addition, on energy security issues, the EU and China should reach greater consensus in regions of common interest, such as Central Asia (De Matteis, 2010).

The current lack of effective, stable and legitimate regimes and institutions on climate change is arguably the main cause of friction between the EU and China (De Matteis, 2010). Only a carefully balanced combination of incentives and rules can provide a mutually beneficial regime, underpinned by a sufficient level of legislation (De Matteis, 2012). Recent efforts from Beijing also seem to indicate a turn in the Chinese position towards strengthened institutional cooperation (Men, 2014). Therefore, an annual EU-China climate summit could be established to discuss a joint vision for global climate governance. On this basis, a series of bilateral legal frameworks could be built and subsequently improved to resolve the remaining conflicts in EU-China cooperation, e.g., a framework to promote technology transfers and their deployment (Men, 2014).

Although the US exit from the Paris Agreement and the UK exit from the EU will substantially affect the global climate regime, they also create an opportunity for more bottom-up climate action. Actually, “bottom-up” is the one of the primary achievements of the Paris Agreement because of the long-term gridlock and indecision at the international level in recent decades. In fact, the real progress in global action on climate change has been arrived at via fragmented and multispeed efforts all over the world, which can be defined as a “polycentric” or “Madisonian” system (Liu, 2010; Ostrom, 2009; Victor et al., 2005). In bottom-up climate governance, cities, responsible for about 70% of global GHG emissions while occupying only 2% of land, play an important role (UN Habitat, 2011). Therefore, city-level cooperation between China and Europe could be further strengthened. However, compared to European cities, foreign diplomacy from Chinese cities will require political, legal and policy assent and support Beijing. Also, a polycentric climate governance system opens up a channel for NGOs to take part in national climate governance as an important decentralized actor. Civil society in Europe has been at the forefront of fighting climate change. In recent years, Chinese NGOs have contributed to the democratization of climate change mitigation efforts in their own country. Chinese NGOs have also been actively engaged in civil diplomacy through various global networks since 2002, when a small NGO delegation participated in the Johannesburg Summit (Schröder, 2011). Robert Bosch Stiftung from Germany sponsored the EU-China NGO Twinning Exchange program, aimed at building partnerships and cooperation between non-governmental or non-profit organizations and think tanks from both regions; 10 NGOs from China and Europe became 2015 “Climate Change Twinners”. It is expected that EU and Chinese civil society actors will complement national-level collaboration in disseminating climate change information, monitoring industrial behavior, and support the creation of bilateral institutions through survey and research.

Similarly, for the EU and China, future engagement with the US could focus on

non-government actors and state-level (i.e., sub-national) governments. The combined climate mitigation efforts of some densely populated states may significantly alter America's emissions trajectory in spite of countervailing policies from the Federal government. The new rulebook for the Paris Agreement, scheduled for completion in 2018, could scale up the status of non-state actors to facilitate this. China and the EU need to ensure that communication channels are kept open and active with US states, non-governmental organizations, political foundations and private businesses by encouraging exchange at multiple levels, such as with the "Transatlantic Climate Bridge" established by the EU and the US (Dröge, 2016).

Finally, Chinese policy-makers are certainly interested in transforming their nation to become a more advanced and internationally respected country, and regard the EU as a source of guidance and support, particularly in climate change governance. But they adamantly reject any political and legal strictures from European and other countries, which by its nature can come off to both the Chinese government and the Chinese public as condescending (De Jong et al., 2017). In this sense, European advice is unlikely to fundamentally change China. Therefore, for Europeans, greater caution in judgment and preliminary awareness of cultural differences are needed if bilateral collaboration are to be translated from official documents into specific projects and agreements (De Jong et al., 2017).

6 Conclusions

In the evolution of the global climate regime, the EU and China have played pivotal roles. China initially took a rather defensive stance in international affairs, aimed at reducing foreign interference in its domestic discretionary power. By contrast, the EU has typically led the legalization process within the international forum, calling for more legal institutions (De Matteis, 2012). However, in recent years, and primarily in the field of climate change, China has assumed an increasingly proactive stance and benefited from socialization within the global climate regime (De Matteis, 2012). The increasing alignment between its domestic economic and environmental agendas has given China greater flexibility in its international climate policy, including more room for maneuver within international negotiations. Today, China's increasing assertiveness and competitiveness on climate change issues means the EU needs to rethink its engagement strategy with China.

It is clear that the EU and China have much more common than conflicting interests with respect to climate change. This provides an opportunity to create agreed frameworks for bilateral cooperation and to reach "win-win" outcomes (Gippner and Torney, 2017). By contrast, as evidenced in the solar panel trade dispute and the aviation carbon tax conflict, non-cooperation always leads to "lose-lose" outcomes. From this perspective, cooperation is a better choice for both two parties, even if it means splitting the difference and arriving at compromises short of optimality for both sides. Furthermore, with the impacts of the US exit from the Paris Agreement and Brexit, EU-China cooperation is imperative for creating and sustaining effective global climate governance.

Under this premise, the EU and China need to find an appropriate common approach to relaxing and eliminating tensions. For example, China should increase transparency in GHG emissions reduction and align IPRs protection with international standards. More local governments and NGOs in China should be encouraged to take part in bottom-up climate partnership with their counterparts in EU. The EU should provide

more political and economic incentives for their companies to engage in technology dissemination and distribution in China. More importantly, the EU and China should establish more legal and institutional frameworks to mediate controversial issues and formalize bilateral cooperation over the long term.

Finally, the success of EU-China cooperation on climate change is likely to be proportionate to the efforts that they make in not excessively challenging each other's interests, namely, to the extent that they are willing to view each other as equal partners (De Matteis, 2010). Instead of acting strategically in a zero-sum game – an approach that has apparently been adopted by the recent US administration in its relations to the world – the EU and China must be keen to coordinate their policies to share benefits, as well as costs, in the effort to address a common challenge.

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