

1 **Explaining the political gridlock behind international Circular Economy:**

2 **Chinese and European perspectives on the Waste Ban**

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10 **Abstract**

11 China and the EU recently established an agreement to develop a Circular Economy (CE), a  
12 (re)emerging socio-economic framework to address growing challenges of global environmental  
13 change. Up to now, there is limited research addressing the implications of a joint CE framework  
14 following the China-EU agreement. Based on 72 expert interviews, 52 documents and participant  
15 observation, we study political narratives around the Chinese Waste Ban (WB) to understand China  
16 and EU's visions for a global CE. Our results reveal a political gridlock in China-EU coordination  
17 regarding the WB as the two political actors are not yet synchronized regarding their waste  
18 management visions and are mentally unprepared to cooperate on international CE development.  
19 Both rely on old development and trade discourses, have diverging CE visions and conflicting  
20 perceptions of their respective waste governance roles, as well as prioritize differing scales for  
21 international CE development. Based on these results, we suggest CE stakeholders to reevaluate the  
22 EU and China's mutual narratives and related agencies. Most importantly, we argue that decision-  
23 makers need to reimagine their roles beyond a linear development model, and to focus on waste  
24 prevention instead of waste diversion.

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26 **Keywords:** China, circular economy, development, European Union, Waste Ban, waste trade

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28

29 **1. Introduction**

30 Many stakeholders in academic, political and economic sectors view the circular economy (CE) as a  
31 political concept that will move us towards sustainability through a disruptive economic  
32 transformation. A core idea the CE suggests to achieve this, is to turn waste from a problem (i.e.  
33 unwanted material) into a solution (i.e. a resource). Presently, CE definitions that focus on keeping  
34 materials at their highest value through a range of resource recovery methods, turning useless waste  
35 into useful scrap, have significant traction within academia and practice (Ellen MacArthur Foundation  
36 2015; European Commission 2015; O'Neill 2019). As these CE definitions gained prominence, efforts  
37 to turn waste from an economic externality into an economic input turned the practice of global 'waste  
38 trading' into a CE practice (Gregson et al. 2015; Romero-Hernández and Romero 2018; O'Neill 2019).

39 With these developments, the global waste regime has become conceptualized as part of a CE. This  
40 regime was deeply shaken in July 2017, when China announced that it would stop importing 24 kinds  
41 of solid wastes including plastic, paper, and other types of low-grade scrap, devastating municipal  
42 recycling programs in so-called 'developed' countries around the world (Qu et al. 2019). The 'Waste  
43 Ban' (WB), as it is commonly called, revealed that despite significant improvements in resource  
44 efficiency, global waste production has not subsided and waste has emerged as an increasingly visible  
45 global environmental challenge. It exposed the inadequacies of the main modes of waste governance  
46 regimes, mainly the Basel Convention and the WTO, the irresiliency of the global waste trade as well  
47 as "the extent to which the high-consuming nations ['developed nations'] had become dependent on  
48 the high-growth nations ['developing nations'] for their waste disposal" (O'Neill 2019, p.150). This  
49 sparked considerable debate and disturbance in the global waste regime, particularly between the EU  
50 and China, who are pursuing a CE cooperation.

51 Given the WB's impact on the fragmented global waste regime and the fact that changing the global  
52 waste regime would be one of the first steps towards a CE, we take the WB to evaluate the political  
53 prospects of building an international CE globally or regionally. Investigating the WB will help us better  
54 understand the existing visions for a global CE and their prospects of these being translated into

55 political action. Existing literature offers divergent and fragmented conceptualizations of a global CE.  
56 Various works imagine the global CE as key in achieving a sustainable future through improved  
57 resource recovery from wastes at a global scale and address the global challenges and opportunities  
58 of doing so (How et al. 2019; Budzianowski 2017; Velenturf et al.; Wiebe et al. 2019). (Kate Raworth  
59 2017) argues that striving for a global CE means that all countries are now ‘developing countries’, as  
60 no country, industrialized or industrializing, operates within biophysical boundaries while fulfilling the  
61 social needs of its citizens. Literature that conceive the CE as connected to or a means of achieving  
62 sustainable development complement this view (Millar et al. 2019; Ghisellini et al. 2016; Geissdoerfer  
63 et al. 2017).

64 These optimistic visions for a global CE stand in contrast to the literature that link it to the WB. In these  
65 works scholarship suggest the global CE to be the current global recycling and secondary materials  
66 economy that circulates materials in an insufficient, unsustainable and unethical fashion (Liu et al.  
67 2018; Haas et al. 2015; Tisserant et al. 2017; Chen et al. 2020; Hsu et al. 2019; Velis 2015). However,  
68 scholars have also argued that the global recycling economy is essential for building and maintaining a  
69 global CE so long as plastics are produced (O'Neill 2019; Gregson et al. 2015). Despite the importance  
70 of the Chinese WB for understanding different visions for a global CE as well as the pathways forward  
71 for global waste challenges, literature on the topic thus far focus on rationales, impacts and responses  
72 to the ban from perspectives of the global waste trade or material flows (Qu et al. 2019; Brooks et al.  
73 2018; Tan et al. 2018; Wang et al. 2020; Wang et al. 2019). Few studies on the consequences of the  
74 WB for international CE cooperation exist.

75 Our study addresses this research gap by exploring the EU and China’s mutual perceptions and  
76 reactions towards the WB in the context of China-EU CE cooperation and by evaluating their political  
77 implications. We aim to understand existing visions for a CE in a global context and infer potential  
78 pathways for EU-China cooperation on this matter. To meet this objective, we adopt a discourse  
79 analytical lens and explore the discursive struggle around the WB, asking:

80 How do EU and Chinese actors perceive the WB in the context of China-EU CE cooperation and  
81 what can we learn from this for global CE aspirations?

82 To answer this question, the paper will first introduce institutions, discourses, agents and practices  
83 relevant to the WB prior to 2018. Subsequently, an in-depth analysis of current changes, perceptions  
84 of these changes, and agents' strategies to deal with them is presented. Based on the findings, we  
85 discuss possible pathways for China-EU CE cooperation.

86 The results of this analysis provide critical knowledge not only for scholars of CE but, more importantly,  
87 for scholars interested in identifying suitable and politically feasible socio-economic frameworks to  
88 address the growing challenges posed by global environmental change. Reactions and perceptions of  
89 the WB in China-EU relations serves as a rare opportunity to gain insights into how two major  
90 international political actors conceptualize a global CE and wider global environmental challenges of  
91 waste (McDowall et al. 2017; European Commission, Chinese Development and Reform Commission  
92 July 2018). Until the WB, China was the world's leading importer of waste plastics while the EU was its  
93 leading exporter (Wang et al. 2019). As 'CE frontrunners' and CE partners through their Memorandum  
94 of Understanding (MoU) (European Commission, Chinese Development and Reform Commission July  
95 2018), China and the EU's mutual perceptions and reactions towards the WB provide a chance to shed  
96 light on CE pathways towards restructuring the rules that guide the global waste regime. Examining  
97 the relationship between an established and an emerging power such as the EU and China is of  
98 particular interest for CE scholarship as scholars and practitioners call for a CE that engages more with  
99 countries beyond the early industrialized centers of the global economy (Schröder et al. 2019;  
100 Valenzuela and Böhm 2017; Preston et al. 2019). While China is no longer considered a 'developing  
101 country' by many actors (European Commission 2019), its transition is recent and its actions and  
102 development has profound consequences on environmental and economic pathways in the developing  
103 world (So 2014; Bell 2016). As the CE seeks to transform prevailing economic pathways and a global  
104 CE would require them to operate in countries with very different models of economic governance,  
105 which are also undergoing different processes and stages of economic transformation, the choice to

106 study China-EU interaction provides important insights into the concept's political and practical  
107 prospects.

## 108 **2. Theoretical Approach**

109 Terminology is important for discussing the WB. Following (O'Neill 2019), we use the term 'waste' to  
110 refer to non-reusable materials and 'scrap' to refer to reusable materials for easy comprehension.  
111 Furthermore, we acknowledge that 'developed' and 'developing' are contested words for describing  
112 nations. Yet, we use them to be consistent with the terminology used by stakeholders but address the  
113 implications of the words in our discussion.

114 To analyze how the WB affected EU-China relations in the global waste regime and what this means  
115 for global CE aspirations, this paper draws upon the discursive tradition of interpretive policy analysis,  
116 which has gained prominence in global environmental politics since the 1990s (Hajer 1995; Bäckstrand  
117 and Lövbrand 2006; Litfin 1994). Rather than focusing on national interests or cost-benefits, our  
118 analysis focuses on self and mutual perceptions regarding the WB in the context of China-EU relations,  
119 and what the qualities of these relationship mean for the conceptualizations of a global circular  
120 economy. We believe that much can be learned from this regarding the political prospects of a  
121 relatively new concept in international relations because discourses and narratives illuminate the  
122 underlying meaning structures shaping political discussions (Dryzek 2013) and the resulting actions  
123 (Sharp and Richardson 2001). These meaning structures are critical for explaining current policy  
124 processes and anticipating how they might develop in the future because they determine how people  
125 convert human difficulties into policy problems, constitute policy instruments, and create coalitions of  
126 support or opposition (Fischer and Forester 1993; Fischer and Miller 2017; Roe 1994; Yanow 2000).

127 Specifically, we employ the Discursive Agency Approach (DAA; for a detailed discussion see (Leipold  
128 and Winkel 2017) together with Argumentative Discourse Approach (ADA) (Hajer 1995) as heuristics  
129 for our analysis. This means we consider policy making to be a continuous struggle over establishing  
130 political truths and corresponding policies and institutions, which takes form through policy discourses  
131 (Leipold and Winkel 2017). We conceive of such discourses as a sum of (topically related)

132 communicative interactions between people (Keller 2013) and the definition of “narratives” (or  
133 “storylines”) as a subset of overarching discourses (Hajer 1995). ‘Narrative’ is defined as a story  
134 ascribing meaning to social or physical phenomena by connecting a sequence of events and actions in  
135 a plot, including, excluding, and emphasizing problems, actors, and events and, thus providing an  
136 interpretation of who or what is significant (Hajer 1995; Feldman et al. 2004; Kaplan 1993). ‘Discursive  
137 agency’ is defined as “an actor’s ability to make him/herself a relevant agent in a particular discourse  
138 by constantly making choices about whether, where, when, and how to identify with a particular  
139 subject position in specific story lines within this discourse” (Leipold and Winkel 2017, p.15).  
140 Stakeholders take over speaker roles that instruct but do not entirely determine their behavior. The  
141 DAA assumes a dialectically constituted agency. On the one hand, discursive structures produce the  
142 preconditions for agency by influencing not only what stakeholders do but also who they are. On the  
143 other hand, it is the actors who (re)produce and thus do discourses and shape institutions.

144 By combining the ADA and the DAA, we focus on the ways discursive practices, expressions of  
145 intersubjective relations, produce particular kinds of narratives and agencies, truth claims and  
146 corresponding policies and institutions. They, thus, shed light on how stakeholders conceptualize a  
147 policy field, their own agencies within it, and its future development.

### 148 **3. Materials and Methods**

149 To map and analyze the WB institutions, discourses and agencies in EU-China relations, this study  
150 collected data from key stakeholders who work in relevant fields close to the WB, contribute to EU-  
151 China CE discourse or who have worked on EU-China projects related to waste management and  
152 circular economy. The data set is comprised of:

- 153 • 20 explorative interviews that helped to map the stakeholder field
- 154 • 49 semi-structured interviews with a focus on the WB (between 30 and 120 minutes in length,  
155 recorded and transcribed)

- 156 • 23 semi-structured interviews with a broader focus on EU-China CE (between 30 and 120  
157 minutes in length, of which 12 were recorded and transcribed; 11 could not be recorded  
158 because interviewees did not give consent, these have been documented using on-site notes  
159 as well as follow-up memory protocol)
- 160 • 12 documents related to WB (e.g. WTO notifications and filings, Basel Convention documents,  
161 Chinese official documents, press releases, media articles, trade association documents)
- 162 • 40 documents related to EU-China CE (e.g. MoU, environmental dialogues, joint declarations  
163 and event programs, press releases, speeches, media articles, publications)
- 164 • Participant observation at the International Circular Economy Conference and Exhibition in  
165 Beijing (November 2017), 2019 Circular Economy Stakeholder Conference in Brussels (March  
166 2019), and the World Circular Economy Forum in Helsinki (June 2019)

167 The data was gathered between October 2017 and August 2019. In a first step, interview guides were  
168 drafted based on our research questions and DAA and ADA's analytical elements (Hajer 1995, Leipold  
169 and Winkel 2016). Explorative interviews were conducted in autumn 2017 and early 2019 with experts  
170 knowledgeable on different aspects of the field or with an overview of the topic but who were not  
171 directly involved. These interviews provided important background and context information for the  
172 WB and CE in China and the EU, guidance for setting our case boundaries as well as insights for the  
173 formulation of the interview questionnaires. Next, we gathered relevant communication and policy  
174 documents through desk research, which together with information gathered from the helicopter  
175 interviews, suggested potentially relevant interviewees. Finally, the in-depth interviews were  
176 conducted between January and August 2019. Based on the initial search, a list of 50 individuals or  
177 organizations was compiled. The individuals or organizations were then contacted and a set of five  
178 interviews was conducted. The interview list was refined and, where necessary, expanded using a  
179 snowballing method according to information gathered in the initial interviews. This process was  
180 repeated until the remaining individuals could not be reached for an interview (after five attempts) or

181 refused the interview. In the end, 72 interviews could be secured in English and Mandarin Chinese and  
182 were transcribed according to the recordings without translation.

183 The interview data was analyzed deductively, based on categories deduced from DAA and ADA as well  
184 as from our interview guide, and inductively, inspired by grounded-theory techniques using the coding  
185 software MAXQDA (Saldaña 2015). Further documents and participant observation data from relevant  
186 stakeholder events were analyzed to contextualize and complement the interview results. In the  
187 results section, direct quotations from Mandarin Chinese interviews are translated into English for  
188 comprehension purposes.

189 To assure the protection of interviewees' personal data, aggregated stakeholder categories (e.g. A =  
190 academic institutions) have been developed for the purpose of referencing interviews in this article  
191 (see Appendix 1). The interviews in each category were numbered according to the interview date (e.g.  
192 A1 = first interviewee from this category, P7 = seventh interviewee from this category). The codes do  
193 not represent the order of interviewees' affiliations presented in Appendix 1.

#### 194 **4. Results**

##### 195 **The past: the global waste trade and the leadup to the WB**

196 While waste trade began between OECD/EU countries in the mid-1980s, China's entry into the trade  
197 as a major importer after its ascension to the World Trade Organization (WTO) in 2001 turned the  
198 trade global (O'Neill 2019). At the time, 'foreign' waste was considered valuable as it contained high  
199 quality materials, especially plastics, which can be processed through simple technologies to use as  
200 direct inputs into the expanding Chinese manufacturing and export business model. It served as an  
201 important material base to build China's export-oriented economic growth model and to enhance its  
202 industrial development (Qu et al. 2019). The EU and other western countries supplied this demand as  
203 it was more cost-effective to export their waste to China than to process the waste at home. As  
204 developed countries imported more and more manufactured goods from China, containers arrived at  
205 their ports with goods and returned to China with 'wastes'. While some of the 'wastes' shipped could

206 be used as ‘scrap’, others were contaminated or were not high grade enough to be recycled. These  
207 wastes either ended up in landfills, incinerators or open land dumps, causing pollution of soil, water  
208 and air (O’Neill 2019).

209 The WB is premised on both domestic and international institutions. Within China, the Reform Plan on  
210 Solid Waste Import Management prohibiting the imports of foreign garbage came from China’s Central  
211 Leading Group for Comprehensively Deepening Reforms, headed by President Xi Jinping (Tan et al.  
212 2018). Internationally, the WB refers to the 1992 Basel Convention, which governs the transboundary  
213 movements of hazardous wastes and their disposal. It sought to govern toxic waste trade and control  
214 the trade of illegal wastes.

215 According to (Brooks et al. 2018) and numerous interviewees, China has been revising, updating and  
216 tightening its solid waste import regulations since the 2000s (EU\_I15, CH\_R3). In 2013, Chinese  
217 authorities launched a temporary campaign called Operation Green Fence, which stepped up  
218 enforcement of earlier waste import regulations, cracked down on contaminated waste imports, and  
219 aimed to increase the quality of waste imports. Between 2015 and 2017, campaigns to increase  
220 inspection to track illegal waste imports as well as general enforcement of prior regulations took place,  
221 culminating with the National Sword Campaign and China’s filing of a notice with the WTO that  
222 essentially banned solid waste imports ranging from plastic to paper (Wang et al. 2020; O’Neill 2019;  
223 Qu et al. 2019; Tan et al. 2018; World Trade Organization 2017). The notice included the phasing out  
224 of the import of solid wastes that could be replaced by Chinese domestic supply (CH\_NGO1, EU\_I7).

### 225 **The present: perceptions and reactions to the WB**

226 This section explains the European and the Chinese perspectives that structure the discourse of  
227 perceptions and reactions in EU-China relations. Each perspective is a storyline that is referred to by  
228 agents from Chinese, European and international organizations. For example, the Chinese perspective  
229 is cited by many European embassy stakeholders working in China, while the European perspective is  
230 cited by many international organizations as well as some Chinese academics and industry  
231 stakeholders.

232 *European perspective: WB as disruption to global CE/waste trade*

233 This European perspective problematizes the WB as a disabling practice that creates hard barriers  
234 against the global waste trade, which is a prominent characterization of a global CE in EU-China CE  
235 narratives, creating two major problems for European and global CE development (Luo et al. 2020).  
236 First, the WB refers to the WTO notification prohibiting the import of 24 kinds of solid wastes (World  
237 Trade Organization 2017), which China implemented very suddenly with little prior warning, resulting  
238 in major losses to the European waste management industry and caused waste to pile up in European  
239 ports instead of reentering the value chain. Second, it led to waste streams being shifted from China  
240 to Southeast Asia, where recycling capacity is still immature and technological capability is not yet  
241 best-in-practice, resulting in waste leakage and environmental pollution. While the narrative  
242 acknowledges that some contaminated wastes were likely mixed in with the scrap, the ratio is small  
243 and does not justify a universal ban, a protectionist measure that goes against the free-trade spirit of  
244 the WTO regime. Two potential solutions are presented in this storyline. First, EU-China cooperation  
245 through bilateral and plurilateral talks, including but not limited to dialogues under the CE MoU, could  
246 result in joint redefinings of trade rules governing what is 'waste' and what is 'scrap' to enable a more  
247 environmentally and socially sustainable free trade of secondary raw materials, as this generates global  
248 economic gains (eg. EU\_I10, EU\_I11, IO\_1). Future cooperations with China should be co-funded and  
249 mutually beneficial as the EU no longer considers China as a developing country (European Commission  
250 2019). A second solution is an effort to repeal the WB altogether through the WTO dispute resolution  
251 channel. The EU has filed complaints against the WB at the WTO together with other waste exporting  
252 nations with hopes to re-stabilize the WTO regulatory environment (eg. EU\_I10, IO\_8).

253 The European perspective is institutionalized in the WTO filings against the WB and structures the  
254 narratives of primarily European actors from the Commission as well as recycling industry  
255 representatives, but also include international actors and is acknowledged by Chinese actors. It  
256 characterizes a general skepticism towards Chinese authoritarianism and intransparency. The WB is

257 considered an example of both because of perceptions that it was implemented very quickly by  
 258 Chinese authorities without forewarning or consultation rounds with other stakeholders.

259

260 **Table 1: European and Chinese perceptions and reactions to the WB**

Narrative	<b>European perspective: WB as disruption to global waste trade</b>	<b>Chinese perspective: WB as national development strategy and international waste management regime changer</b>
Problem	Sudden implementation of WB by China	The global waste trade
Cause	Chinese governmental protectionism, authoritarianism and intransparency	EU and 'West''s poor domestic waste processing capacities & irresponsible waste exporters, China's resource scarcity in the past
Consequence	Disruption to the global waste trade Countries without recycling capacity flooded with waste Waste importers and exporters are hurt in EU and China	Environmental damage to China and other importing countries Socio-environmental unsustainability (pollution, wastepickers' poor working conditions) Unfair global waste transfer, burden shifting especially problematic as hazardous and illegal wastes are mixed in
Solution	EU-CH CE cooperation to redefine 'waste' and 'scrap'  Repeal the WB through WTO	WB
Benefit	Re-enable global free trade of secondary raw materials	WB boosts urban mining, helps build Chinese national waste collection and sorting regime, Enables regional/national CEs globally, inspires other importing countries to also issue WBs

261

262 *Chinese perspective: WB as national development strategy and international waste management*  
 263 *regime changer*

264 The Chinese perspective problematizes the global waste trade as a kind of environmentally and socially  
 265 unsustainable CE, the unintentional result of poor waste processing capacities and irresponsible  
 266 exporters in EU/Western countries and China's early industrial resource scarcity. The WB is presented  
 267 as a solution in this storyline, accompanied by visions of a national CE, where waste recovery and  
 268 waste-to-value processes occur within China's borders through comprehensive waste management

269 infrastructures and institutions for waste collection, sorting, recycling, and incineration. It perceives  
270 the WB as a practice that raises China's waste import standards, providing a solution to three related  
271 industrial and sustainable development problems. First, the WB is the natural endpoint of a series of  
272 domestic efforts against hazardous waste pollution caused by foreign exporters' dumping practices  
273 that result in contaminated, non-recyclable materials and their associated socio-economic costs.  
274 Second, the WB cuts off foreign scrap to the Chinese recycling industry, which incentivizes national  
275 and local waste management initiatives (e.g. Zero-Waste Cities). Third, the WB enables formalizing and  
276 centralizing China's domestic recycling systems, ending widespread informal systems of wastepickers,  
277 their precarious working conditions and the related negative images of China as the world's waste  
278 dump. The WB is therefore a signpost for China's successful industrial upgrading, national sustainable  
279 development and effective 'catch-up'.

280 As the WB changes the global narrative that China is the world's waste dump and biggest polluter by  
281 showcasing that Europe and other western nations' environmental records rely on externalizing  
282 practices, this storyline envisions an alternative international CE where the WB incentivizes different  
283 countries/regions to invest in their own waste management regimes and where the global waste trade  
284 is transformed into a limited secondary raw material regime (eg. CH\_S18). In this vision, China, through  
285 its Belt and Road initiative and other cooperation mechanisms such as the EU-China CE MoU, exports  
286 its cost-effective waste management technology know-how to the EU as its member countries seek to  
287 increase their own recovery capabilities, collaborate on research into new (bio)materials, as well as  
288 partner with the EU to 'help' other developing countries, for example in Africa, with environmental  
289 technology and policy development.

290 The Chinese perspective is institutionalized in the WB itself and in China's WTO responses to  
291 complaints against the WB. It structures the narratives of many Chinese actors but also numerous  
292 international and European actors working in close proximity with Chinese actors or advocating for  
293 more regionalized and local CEs. It characterizes a general admiration for the speed with which China

294 meets economic and environmental targets to catch up in industrial development and the WB is  
295 considered an example of such efficiency.

296 *The conflicting agencies of China and the EU*

297 The WB storylines present numerous subjects including European and Chinese governments and  
298 recyclers, as well as Chinese wastepickers but perhaps due to its international nature, it promotes the  
299 EU and China as the two central agents. These agents are ascribed contrasting agencies, or roles, in  
300 the WB discourse, which prevent reevaluation of the current waste regime.

301 A key reason that the European WB storyline perceives the WB as a disruptive force to European and  
302 global CE stems from the market roles it ascribes to the EU and China. In this storyline, the EU and  
303 China are market competitors in the global waste trade regime. The EU, as a regional organization and  
304 economic area, is the rule-abiding player who is open with its intentions and its markets, while China,  
305 as a nation, is delegitimized as a cheater who pretends it is for an open trade environment while using  
306 every opportunity to employ protectionist policies through sudden and intransparent implementations,  
307 such as the WB, to serve its own sectors and interests instead of global ones. The market agency China  
308 possesses creates unfair disadvantages to EU recycling businesses and threatens the EU's  
309 competitiveness and global economic standing. The solution is therefore a market response by  
310 engaging with the WTO institutions, together in coalition with other western waste exporting countries,  
311 especially the United States. This storyline assumes a market logic that recycling has been carried out  
312 in China in the last decades due to cost efficiency and not due to a lack of EU recycling capacity.

313 This storyline also promotes the EU and China in teacher-student roles/relationship. In terms of policy  
314 and technology, Europe continues to see China as its own 'student', keen to learn what it can from  
315 Europe's advanced economies. While China's increasing agency is recognized, Europe sees itself as so  
316 far ahead in development that it is the natural environmental leader and standard setter. While many  
317 stakeholders agreed with the WB in principle, the WB's validity as a new set of standards for the waste  
318 regime is often delegitimized by claims of protectionism. A representative of the Commission argued  
319 that China put the ban into place "without providing justifying evidence for their choices but putting

320 artificial purity levels on recycling streams that they are not justified by research, but they smell more  
321 like protectionism..." (EU\_P7).

322 A key reason that the Chinese WB narrative perceives the WB as an enabling force to Chinese and  
323 global CE stems from the regulatory roles it ascribes to the EU and China. In this storyline, China is the  
324 righteous rule-setter raising import standards in the global waste regime to protect its environment  
325 while the EU and other western countries are delegitimized as rule-breakers and hypocrites who  
326 prioritize the environment at home but engage in bad trade practices that harm China's environment.  
327 The perceived agency of China's environmental leadership extends beyond China's borders to the  
328 international arena where China's ban on 'foreign garbage' inspires other developing countries to  
329 follow suit and thus the entire global waste regime will change. This storyline highlights China's self-  
330 perceived change in development agency. Importing waste from the world was something China had  
331 to do in the past due to resource and technology scarcity, and it beared undesirable burdens such as  
332 environmental pollution to embark on its industrialization journey to catch up with western nations.  
333 Now that it is further along its development path, "the 'cooperation point' with western countries  
334 naturally shifts from 'low-grade' waste treatment to 'high-grade' technological innovation" (EU\_P13,  
335 IO\_5).

336 While this storyline also promotes EU and China in teacher-student roles/relationship, primarily by  
337 emphasizing that China's standard-setting practices is an emulation of European regulatory regimes  
338 for chemicals (REACH) and for electronic wastes (WEEE), it also suggests an emergent agency for China  
339 in the role of the teacher in realms such as cost-effective waste management technologies, which the  
340 EU and other western countries have not invested in due to exporting waste in the last decades. This  
341 new agency underlines the Chinese WB narrative as it enables the WB narrative to align with the trade-  
342 oriented CE narrative: China is not protectionist or anti-free trade: it is just exchanging 'low-grade'  
343 waste trade for 'high-grade' technological trade through the Belt and Road Initiative. At the same time  
344 that China "closes off waste cooperations" with the world, it hopes to open "technology cooperations"  
345 through the Belt and Road Initiative (IO\_5, CH\_I2, CH\_R3).

346 **5. Discussion**

347 The analysis of Chinese and EU perspectives on the WB reveals bleak political prospects of building a  
348 CE globally or regionally through China-EU cooperation. It shows a political gridlock and inaction  
349 towards international CE coordination and four distinct narratives and agency-related explanations for  
350 this situation:

351 (1) The WB narratives from the EU and China perpetuate wider development discourses of  
352 'catchup' and 'leapfrog' as well as free trade and global economic competition.

353 (2) These narratives reveal a discursive struggle over what a socio-environmentally fair global  
354 waste regime and CE looks like.

355 (3) The involved stakeholders perceive themselves in conflicting roles/agencies in the governance  
356 of such a regime.

357 (4) Chinese and EU narratives have differing scales of priority for building such a regime.

358 These explanations show that both China and the EU are not mentally prepared to cooperate on a CE.  
359 Instead, they foster individual goals and roles in the global arena that are incompatible with developing  
360 common CE goals and complementary agencies. While the WB opens up a new discursive space for  
361 stakeholders to renegotiate the rules that govern global waste management and trade, the  
362 opportunity has, up until now, not been taken up. Most importantly, the mutual focus on waste  
363 diversion over waste prevention – critical for the development of any CE - has not yet been tackled.  
364 Each explanation is elaborated below.

365 The WB narratives from China and the EU perpetuate wider development and free trade discourses.  
366 The Chinese WB narrative is closely affiliated with its industrial development: it means stopping the  
367 global waste trade that its industrialization demand helped kick start because the environmental, social  
368 and reputational damages are too high. The WB helps China build up its domestic CE, with a particular  
369 focus on waste collection and sorting, and supports its own sustainable development and industrial  
370 catch up. Most Chinese actors perceive the WB as a natural progression in China's sustainable

371 development. In contrast, the European WB narrative is closely tied to free trade and global economic  
372 competitiveness. The WB disrupts this trade and is therefore a barrier to the EU's dominant perception  
373 of a global CE, which includes the global waste trade. Although considered a major event that  
374 influences global CE development, the WB has a distinct narrative from the CE in EU-China relations  
375 (Luo et al. 2020).

376 These WB narratives reveal a discursive struggle over what a socio-environmentally fair global waste  
377 regime and CE looks like. Literature has suggested that globalizing regional environmental policy has  
378 been a way to preemptively defend against accusations of protectionism and to ultimately harness  
379 market power (Kelemen 2010). In a similar vein, the EU and China's struggle over what is a socio-  
380 environmentally fair CE can also be understood as a struggle over economic competitiveness. The  
381 tension between the European and Chinese WB narratives showcase the weak linkages between a  
382 global CE based on global trade and regional or local CEs. This highlights the need for CE scholars and  
383 practitioners to conceptualize a global CE that is not reliant on increasing global trade but rather  
384 inclusive of regionalized or local exchanges.

385 The involved stakeholders perceive themselves in conflicting roles/agencies in the governance of such  
386 a regime. The different narratives promote contrasting agencies for both the EU and China, which  
387 prevent reevaluation of the current waste regime. Most European stakeholders see China as a business  
388 competitor but also still the EU's policy 'student' and lagging behind in regulatory design and  
389 implementation as well as technology and innovation. However, stakeholders fear the EU's weakening  
390 market power and suggest it must increase both to maintain its global influence. Europeans perceive  
391 China as stepping up in the environmental sphere on the global stage and thus why it considers China  
392 a potential CE partner. However, these considerations are strongly rooted in business cooperation. As  
393 such, the WB is only perceived as a market threat, nothing more than a barrier to trade. Chinese  
394 stakeholders also continue to see Europe as an environmental standard setter, innovator and  
395 technology leader and sees itself as Europe's policy 'student'. At the same time, Chinese stakeholders  
396 see an opportunity for China to turn its agency from that of a student to become a teacher to the EU

397 and other western countries – in the waste realm, specifically related to recycling technology. However,  
398 the EU is stuck in market/trade discourses. Hence, it is unprepared and unable to adapt to the  
399 possibility of China taking over the teacher role. In either scenario, the simultaneous roles of  
400 teacher/student and competitor creates a discursive gridlock as it is difficult to be both simultaneously.  
401 While the former gives knowledge freely, the latter must safeguard its knowledge as competitive  
402 advantage.

403 Chinese and EU WB narratives prioritize different scales for building a global waste regime. While  
404 China's WB narratives promotes a national CE, ultimately this national CE must compete with  
405 industrialized nations for economic gains and global standing through trade. This means that although  
406 the Chinese WB narrative pushes for regional waste regimes, China pushes for a more globalized supply  
407 chain in other sectors, contradicting its regional CE ambitions. In this respect, the development  
408 narratives are problematic for a global CE as they view industrialization as linear (Rodrik 2018; Wade  
409 2016). The WB is an example of China going beyond policy learning and starting to practice its learnings  
410 from the EU and other developed countries – using environmental standard setting to benefit domestic  
411 firms and facilitate structural transformation in its industrial development. This is in line with the  
412 'leapfrogging' that scholars have argued the CE has the potential to accomplish for China (Geng and  
413 Doberstein 2010; Mathews et al. 2011). Yet, literature has little to say about who decides what  
414 happens after a country has 'caught up' or 'leapfrogged' and what kind of reactions should be  
415 anticipated from the countries it 'caught up to' or 'surpassed'. Some development scholars as well as  
416 CE scholars have begun to question these narratives and have called for new pathways of development  
417 (Horner 2020; Kate Raworth 2017). Considering the role that these concepts play in China-EU  
418 narratives related to a CE, our results strongly support research in that direction.

419 This study is limited to addressing WB perception narratives in the China-EU CE cooperation in a  
420 relatively short time period, does not analyze WB from the perspectives of international institutions  
421 (eg. WTO or the Basel Convention) or in other international relationships, and we did not include  
422 statistics such as trade data. We further acknowledge that the China-EU CE cooperation may yet evolve

423 differently than what we have portrayed as the cooperation is still young. Despite these limitations,  
424 our results nevertheless provide important lessons for the global waste regime and CE going forward.

425

## 426 **5. Conclusion**

427 Based on these lessons learned, we conclude by suggesting three possible pathways that could  
428 contribute to a reevaluation of the global waste regime to better address challenges between human  
429 activity and the environment. First, the EU and China need to reevaluate their mutual narratives and  
430 related agencies if they want to work together towards a more integrated WM regime and global CE.  
431 Second, if CE is to promote fundamental transformations to existing economic development models  
432 and not only serve as a business strategy, a reimagining of the EU and China's agencies beyond the  
433 linear development model that uses industrialization as a benchmark is necessary. Third, both China  
434 and EU's CE visions need to re-focus from waste diversion to waste prevention to avoid building a CE  
435 that requires increasing waste volumes to be sustained.

436 First, as China's self-perceived agency evolves from that of a passive learning 'student' to more of an  
437 active global environmental leader and 'teacher', the EU needs to recognize this shift in order to adapt.  
438 Stepping into a new learning role could benefit the building of its own CE – which already has a robust  
439 collection and sorting regime but lacks recycling capacities (Qu et al. 2019). Alternatively, a new role  
440 could facilitate the EU's internal renegotiation of its socio-economic metabolism to decrease the waste  
441 generated. Such a reevaluation would enable better coordination efforts between the EU and China  
442 and give opportunity for discussion of a new waste management regime to emerge that sees each  
443 individual country's recycling capacities increased, making waste management more local and scrap  
444 circulation at shorter distances. China for its part should reevaluate its continued self-perception as a  
445 'student' to the EU's 'teacher' with regards to trading environmental technology as a way to reach  
446 further stages of industrialization. While the Chinese WB narrative is critical of the EU's waste  
447 exporting practices, it admires the EU's claim to environmental leadership through green technology  
448 exports and globalizing its environmental standard setting. The Chinese WB narrative suggests China's

449 determination to be the EU's 'student' in this regard leads to international regulatory competition  
450 instead of environmental cooperation.

451 A reevaluation of agencies would also give opportunity for collaborative redefining of what is 'waste'  
452 and what is 'scrap', enabling trade of some secondary raw materials where necessary but decreasing  
453 not only hazardous and illegal waste trades but also working together to find an answer to what  
454 materials should be traded at which scale. While the WB's implementation came as a shock to  
455 European countries, renegotiating a multipolar waste regime that is less dependent on any single  
456 country, especially China, would be much more stable (Velis 2014). If efforts to repeal the WB fail, the  
457 diverted waste from the WB will likely continue to find its way to third countries where there is  
458 insufficient capacity to treat the waste in socio-environmentally sustainable ways.

459 Second, a reimagining of the EU and China's agencies beyond the linear development model is critical  
460 because China's increasing agency questions conventional North-South narratives. Although China's  
461 position as a Global South country is debated, its development pathway and achievements are  
462 influential for many developing countries. The ripple effect of the WB on Southeast Asian countries as  
463 many also followed suit in putting up bans demonstrates this agency. However, the question remains  
464 as to how Northern countries will react and what kind of bilateral relationships unfold after a country  
465 transitions through development stages from 'developing' to 'developed'.

466 Third, despite the EU's focus on the global scale and China's focus on the national scale, both European  
467 and Chinese WB narratives refer to CE visions of waste diversion instead of waste prevention, which is  
468 problematic because it does not address the extractive socio-environmental problems caused by  
469 industrialization and instead propels global waste markets which requires increasing waste volumes to  
470 be sustained (O'Neill 2019). End-of-life waste treatment remains a key focus for both narratives. This  
471 offers mutual learning opportunities if China and the EU find ways to adapt to its evolving teacher-  
472 student relationship, as China and the EU have complementary waste management expertise and  
473 experience. Yet, CE scholars have argued that recycling needs to be deprioritized in favour of other  
474 strategies such as reuse and repair (Kirchherr et al. 2017; Korhonen et al. 2018). CE policy scholarship

475 on China and the EU have also argued that end-of-life CE policies needs to be complemented with  
476 more stringent and consistent policies for input side flows and the entire production life cycle  
477 (Domenech and Bahn-Walkowiak 2019; Zhu et al. 2018). Our results provide further evidence for such  
478 policy recommendations.

479 To conclude, our analysis has shown that self and mutual perceptions are important for working  
480 relationships in international cooperations towards a CE. While the China-EU relationship is crucial for  
481 advancing an otherwise fragmented global waste regime, a global CE or regional CEs would both  
482 require a redefinition of the role of many countries in the current global waste regime, not just China  
483 and the EU. So-called 'developing' countries are considered circular for their material efficiency  
484 practices as they have low consumption rates and high reuse rates while so-called 'developed'  
485 countries are considered circular for their high resource efficiency in the manufacturing phase. They  
486 could be complementary. However, to achieve this complementarity, we would require new CE  
487 conceptualizations that rely less on trade and development narratives and showcase viable  
488 alternatives as well as enable new agencies to emerge for key stakeholders.

489 Further research and practice is needed to investigate and construct narratives that provide answers  
490 to questions such as: What kind of trade (materials and flows) should occur at which scales (global,  
491 regional, local) to achieve a sustainable and equitable global waste regime and CE(s)? What kind of  
492 regulatory frameworks would enable such a transition? How can nation-states co-exist if globalized  
493 trade decreases? What could happen to the WTO and other trade agreements if such developments  
494 were to materialize? Last but not least, more interlinkages are needed between CE and sustainability  
495 transition research with development scholarship as issues of development justice are crucial for the  
496 reevaluation of waste, trade and environmental governance.

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