

## Original article

## Black gold and green BRI—A grounded analysis of Chinese investment in coal-fired power plants in Indonesia

Bowen Gu<sup>1</sup>*Institute of Environmental Science and Technology, Autonomous University of Barcelona (ICTA-UAB), Spain*

## ARTICLE INFO

## Keywords:

Coal  
Indonesia  
Belt and Road Initiative  
Socio-environmental conflict  
EJAtlas  
Energy transition

## ABSTRACT

From the “Going Out” strategy in the 2000s to the Belt and Road Initiative (BRI) launched in 2013, China has increased its overseas investment and extended the coal value chain beyond its border. Despite China’s commitment of greening the BRI and phasing out overseas coal investment, the socio-environmental impacts of the projects that are already planned, under construction, or in operation are expected to remain. This has led to resistances from local communities and civil society in BRI countries such as Indonesia, the top recipient of Chinese coal financing. Based on a systematic mapping of 25 socio-environmental conflicts over coal-fired power plants (CFPPs), this paper presents a grounded comparative political ecology analysis of Chinese engagement in three types of CFPP projects in Indonesia. The paper addresses the lasting environmental, health and socio-economic impacts of CFPPs that are inextricably intertwined with extractive industries, including coal and nickel. It also discusses the power relations that have shaped socio-environmental conflict dynamics. The paper sheds light on policy recommendations for BRI governance from an environmental justice perspective. It reinforces the call for a research agenda on the BRI that considers not only the China-side perspective, but also the local socio-political dynamics, including the politics from below, that shapes the vision and frictions of a “Green Belt and Road”.

## 1. Introduction

From the “Going out” strategy in the 2000s to the Belt and Road Initiative (BRI) launched in 2013, China has been increasing its overseas investment and extending its domestic coal value chain (primarily mining, transport, and power plant) and carbon footprint beyond its border (Gallagher, 2018, 2016; Gallagher and Qi, 2021). Existing studies and narratives have presented divided perceptions, or “two realities” of Chinese overseas infrastructure investment: one where the contribution to the development of the host country economy is celebrated, and the other, where local people are negatively affected by this development and contest the environmental and social impacts of these projects (Apostolopoulou and Pant, 2022). In recent years, a third reality, rising carbon emissions and pressures on climate change, especially from coal-fired power infrastructures, has also led to questions regarding China’s role in host countries’ energy transition (Ascensao, 2022; Gallagher, 2016; Wu et al., 2021; Zhang et al., 2017).

Against these backgrounds, there have been increasing calls for grounded, project-based approaches towards the effects of the BRI, also

referred to as the “new Silk Road” (Hofman and Ho, 2012; Klinger and Muldavin, 2019; Oakes, 2021; Oliveira et al., 2020; Sidaway et al., 2020). This includes a closer examination of the environmental and social impacts of the BRI and the local legal and political dynamics that challenge and complicate the top-down vision of building a “Green Belt and Road” (Rogelja, 2020; Tritto, 2021a). Scholars have increasingly recognized the role of host state actors and local politics in engaging with “Global China” and international capital (Lim, 2022; Lu, 2020). More specifically related to China’s overseas energy infrastructure investment, the “pull” factors from host countries and the interplay between Chinese investors and domestic actors have been studied (Li et al., 2022; Mori, 2020). However, there is still limited analysis of grassroots contestation in relation to BRI energy infrastructure projects (Barter and Sar, 2023; Bouille, 2019; Gong, 2018; Siciliano et al., 2019), pointing to a gap in existing literature on the role of local communities and civil society organizations among different stakeholders in host states.

This paper aims to bridge this gap by presenting insights from Indonesia, the top recipient of Chinese coal financing (Gallagher et al., 2021). Between 2000 and 2019, Indonesia received US\$9.3 billion of

E-mail address: [bowen.gu@uab.cat](mailto:bowen.gu@uab.cat).

<sup>1</sup> Present address: ICTA-UAB, Campus de la UAB, 08193, Cerdanyola del Vallès, Barcelona, Spain.

financing from China that supported the development of more than 25 GW of coal-fired power plants (CFPPs) (Liu et al., 2022a). Despite China's overseas coal finance exit announcement in September 2021 (Ministry of Foreign Affairs of the PRC, 2021), the projects that had already been planned and under construction, especially those as part of large-scale nickel industrial parks, continue to be built and completed.

This paper is based on a comprehensive mapping and comparative political ecology analysis of 25 cases in the Global Atlas of Environmental Justice (EJAtlas) related to CFPPs in Indonesia with Chinese involvement, including lending, contracting and equity investment. All these projects have encountered opposition to some extent by local community and/or civil society organizations, contesting their negative socio-environmental impacts. Building upon these 25 cases as well as 28 in-depth interviews with Indonesian and international stakeholders, this paper makes visible the bottom-up perceptions of Chinese overseas coal-fired infrastructure investment, the grievances, claims and repertoires of contention, and the outcomes of the conflicts.

Based on the comparative analysis, this paper aims to address three key questions: How does the unequal distribution of socio-environmental impacts manifest in the Chinese-sponsored CFPP projects in Indonesia? To what extent and how are the unequally distributed socio-environmental impacts contested from the bottom up? How do bottom-up initiatives influence both the sustainable energy future of the host country and the “green BRI” agenda?

The contribution of this paper is twofold. It extends the literature on coal dissent, including environmental justice movements at coal frontiers in Indonesia, which has been mostly on coal mining (Brown and Spiegel, 2017; Fünfgeld, 2016; Großmann et al., 2017). It also contributes to the evolving “Global China” debate (Blanchard, 2021; Franceschini and Loubere, 2022; Lee, 2022) and complements the predominantly quantitative studies on Chinese overseas energy investment (e.g., Gallagher, 2018; Kong and Gallagher, 2021; Li et al., 2022; Liu et al., 2022a). By addressing the grounded, project-based approaches, this study contributes to a growing body of literature on the role of grassroots contestations in BRI projects across broader industries and geographies (Barter and Sar, 2023; Dave, 2022; Gong, 2018; He and Tritto, 2022; Oliveira et al., 2020; Sternberg, 2020; Tritto and Camba, 2022).

The paper is organized as follows. The next section provides an overview of the socio-economic and political background of Chinese investment in coal-fired power infrastructure in Indonesia. Section 3 describes the materials and methods. Sections 4 and 5 present the results of analysis and discussions. Section 6 offers a conclusion.

## 2. Contextualizing Chinese investment in CFPPs and coal dissent in Indonesia

### 2.1. Chinese investment in CFPPs in Indonesia and beyond

From the “Going out” strategy to the BRI, China has been increasing its overseas energy infrastructure investment over the past two decades. This is evident in Indonesia and coincides with Indonesia's domestic energy infrastructure boom (see Fig. 1), including three large-scale electricity infrastructure programs predominantly based on coal-fired power (Ministry of Foreign Affairs of the PRC, 2021; Ordonez et al., 2021; PT PLN, 2021; Tritto, 2021a).

Coal has been an important source for both domestic electricity access and export in Indonesia, fueling the country's growth into the largest economy in Southeast Asia with an average of 5% annual GDP growth rate over the past decade until the Covid-19 pandemic in 2020 (World Bank, 2023). Coal still accounts for more than 60% of the country's electricity mix, with Indonesian state-owned utility company PT Perusahaan Listrik Negara (PLN) dominating the ownership of CFPPs (BP, 2021; Ohlendorf et al., 2022; Ordonez et al., 2021). Through signing Power Purchase Agreement (PPA) with PLN, private companies, including those from China, could participate in power generation, transmission, and distribution as independent power producers (IPPs). PLN publishes an Electricity General Plan (Rencana Umum Penyediaan Tenaga Listrik, or RUPTL) annually, which is Indonesia's 10-year power project development plan that includes projects to be developed by PLN and IPPs respectively. The RUPTL also provides the targeted commercial operation dates for projects planned or under development. According to the most recent 2021–2030 RUPTL, 13.8 GW of CFPPs are still to be added (PT PLN, 2021).

Chinese participation in Indonesia's coal-fired power infrastructure development started in the 2000s, when Chinese companies followed the “Going Out” strategy to go abroad as engineering, procurement and construction (EPC) contractors. The “EPC + Finance” model, in which financing is dominated by Chinese policy bank loans, has evolved over the years, with Chinese companies taking up more ownership of projects in the form of equity investment and joint ventures (Liu et al., 2022a). This aligns with China's promotion of integrated investment, construction and operation, and Indonesian government's preference towards independent power producers over foreign borrowing (Ren et al., 2017). On the other hand, this increase in ownership also points to more potential responsibilities in Indonesia's coal transition (Cui et al., 2023; Springer, 2022).

Studies on Chinese overseas energy investment have mainly focused on the macro level using quantitative methods (Ascensao, 2022; Chen et al., 2020; Gallagher, 2018; Kong and Gallagher, 2021; Li et al., 2020). Some studies have taken a multi-/single-country or regional comparative approach (Gallagher et al., 2021; Liu et al., 2022b; Rogelja, 2020; Tritto, 2021a), with very few focusing on project-level case studies

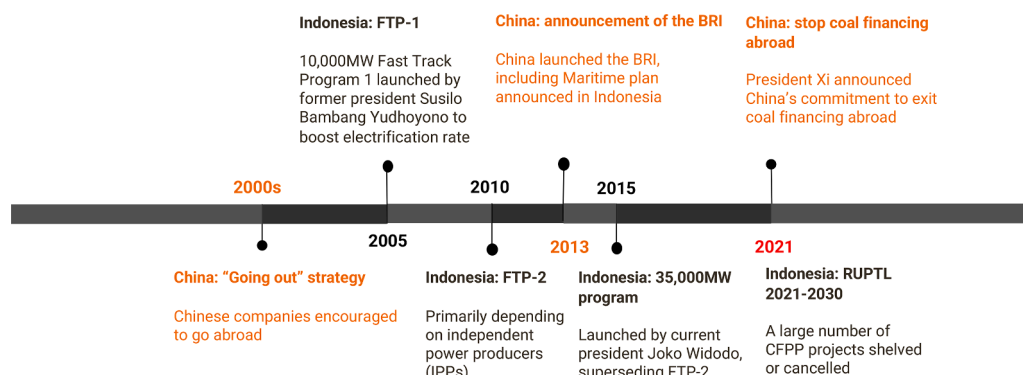


Fig. 1. Timeline of important policies regarding Indonesia's energy infrastructure and Chinese overseas investment. Prepared by author.

(Boulle, 2019). Several studies show that despite being a latecomer compared to Japan and Korea, China has secured a major role in Indonesia's energy infrastructure boom (Lim, 2022; Springer and Shi, 2020). This is explained by studies that looked into the drivers of Indonesia's reliance on Chinese CFPP investments, which discussed the country's developmental attitude, the preference of small-size (100–200 MW) CFPPs, and its tolerance towards subcritical power plants as the key reasons (Edianto et al., 2022; Gallagher et al., 2021; Tritto, 2021a).

While some of the positive socio-economic impacts brought by Chinese investment in energy infrastructure through the BRI have been recognized (Ma and Gallagher, 2021), the environmental, social, health, and climate implications of these projects have also been researched and challenged (Coenen et al., 2020; Pramono et al., 2021). Some recent attempts include an empirical analysis of the environmental performance of China's overseas coal plants (Springer et al., 2021) and the climate change exposure of Chinese foreign direct investment (Li and Gallagher, 2022). An empirical study on the carbon dioxide emissions intensity of CFPPs suggested that Chinese CFPPs tend to have significantly lower emissions intensity than similar non-Chinese CFPPs in Asia (Springer et al., 2021). However, it was also estimated that the proportion of emissions from CFPPs with Chinese investment as part of total emissions from CFPPs in Asia will continue to grow (Springer et al., 2021). More specifically related to Indonesia, scholars have analyzed the social-ecological risks, including land use/land cover change, pollution and carbon emissions, threatened species, and socioeconomic risks of China's overseas investment (Pramono et al., 2021) and the investment and operational risks of CFPP projects for corporates and investors (Kang et al., 2021). Scholars also warned about the lock-in effect of CFPP projects for countries that participate in the BRI, including Indonesia, as many of these countries are entering a stage of development characterized by intense energy demand growth, which can be locked into a high carbon trajectory unless early retirement plans for CFPPs are rolled out (Ma and Zadek, 2019).

Against such a backdrop, Chinese President Xi Jinping announced at the UN General Assembly in September 2021 that China will no longer build overseas CFPPs (Ministry of Foreign Affairs of the PRC, 2021). However, the projects that are already planned, under construction or in operation are expected to remain. Therefore, concern and scrutiny of local and international stakeholders will continue as they examine the realities on the ground against the top-down vision (Suarez and Wang, 2022).

## 2.2. The contested coal commodity chain in Indonesia and beyond

Energy infrastructure projects are a product of social relations. It has been seen from existing studies across regions (Sovacool et al., 2022; Temper et al., 2020) that energy transition is not only technoeconomic, but also deeply social and political, which calls for a multidisciplinary political ecology perspective to investigate and understand the social movements active in the energy transition process.

Previous studies have suggested that ecological distribution conflicts (EDC, used interchangeably with terms such as ecological, environmental, or socio-environmental conflicts), defined as “social conflicts born from the unfair access to natural resources and the unjust burdens of socio-environmental costs from pollution” (Martinez-Alier and O'Connor, 1996), could form an important force for sustainability transition (Gobby et al., 2021; Scheidel et al., 2018; Temper et al., 2020, 2018). On one hand, these socio-environmental conflicts manifest the political demands and concerns of marginalized communities, as well as the non-monetized values that are often neglected in decision-making (Temper et al., 2020). On the other hand, these conflicts are also creating new norms through various strategies and channels that influence climate policies and investment flows of local and international financial institutions (Hansen and Pollin, 2020; Piggot, 2018; Thiri et al., 2022).

The Global Atlas of Environmental Justice (EJAtlas) was created to

document and catalogue ecological distribution conflicts around the world (Temper et al., 2015), covering a wide range of commodity chains, including coal. As illustrated in numerous examples in the EJAtlas, the socio-environmental and health impacts of CFPPs have led to the opposition and mobilization of many local communities, which request the suspension or reparation of the damages caused by CFPPs to the environment and communities. Bottom-up anti-coal movements are considered part of the “leave fossil-fuel underground (LFFU)” movements (Martinez-Alier, 2021a, 2023). Literature on anti-coal movement shows various forms of coal dissent in the Global North such as Germany, the US, and the UK (Brown and Spiegel, 2017; Nace, 2010; Selje, 2022) and coal-rich countries such as Colombia and India (Cardoso and Turhan, 2018; Roy, 2021; Roy and Schaffartzik, 2020). Dissent on coal can yield various forms of outcomes and generate “local, yet collective and strong” impacts, including the delay or even cancellation of projects (Delina, 2022, 2021; Thiri et al., 2022). It was estimated that stopping 50 CFPPs of 1,000 MW would be equivalent to avoiding the emissions of a country similar to the size of France or Italy, assuming that no leakage would occur (Martinez-Alier, 2021a; Pellegrini et al., 2021). In the BRI context, the 1,050 MW Lamu coal-fired power plant in Kenya, originally proposed with Chinese financial support, is one of the few documented examples where local civil society groups, allied with a transnational campaign, managed to stop the project from being funded and constructed (Boulle, 2019; EJAtlas, 2021).

Dissent on coal is especially important for sustainable energy futures in the Global South (Cardoso and Turhan, 2018; Delina, 2022). This is echoed by a global meta-analysis (Thiri et al., 2022) that highlighted the research gap on social movements concerning fossil fuels in certain regions and high-emitting countries. Considering that ecological distribution conflicts and social metabolism are the two sides of the same coin (Martinez-Alier, 2002; Tetreault, 2022), the research on CFPPs in Indonesia serves as an under-studied example, providing an important perspective for understanding the energy dimension of social metabolism in Indonesia and the impact of Chinese investment on it.

Several studies have looked into the contested development of the coal sector in Indonesia, mostly focusing on coal mining, especially in Kalimantan, which is home to 83 % of the country's coal reserves (Brown and Spiegel, 2017; Fünfgeld, 2016; Großmann et al., 2017; Toumbourou et al., 2020). Many conflicts between the local communities and coal mining activities have taken place since much of Indonesia's coal reserves are in areas of rich biodiversity or within Indigenous territories. Besides, the influx of workers and the rivalry over employment, as well as land-rights competition, pose considerable threats to local communities.

In recent years, the anti-coal movements have spread beyond Kalimantan, and increasingly target planned and constructed CFPPs. Studies on the political economy of coal in Indonesia have suggested that grassroots organizations and international NGOs tend to have a negligible influence in Indonesia's energy policy (Jakob et al., 2020; Ohlendorf et al., 2022; Tritto, 2021a). This contradicts to some extent the findings from the above-mentioned studies on coal dissent and climate actions. Building upon empirical evidence from the EJAtlas, this article aims to provide a nuanced understanding of these “counter-movements from below” (Lee, 2017).

As recognized in existing studies (Cheon et al., 2021; Sovacool et al., 2022), it is important to understand the drivers behind social mobilizations and different forms of opposition to inform policies and corporates that might address such opposition with repression, but also with changes of design, remediation, or even cancellation. For Indonesia, a country with one of the largest stocks of existing and planned CFPPs, understanding and addressing socio-environmental conflicts is also important for exploring a pathway towards its energy transition with multi-stakeholder support.

### 3. Materials and methods

#### 3.1. Research design

This study applies a mixed-method approach including interviews and a multiple-case study design (Yin, 2014). Conceptually, the paper applies a political ecology lens to investigate socio-environmental conflicts related to CFPPs in Indonesia that have involved the participation of Chinese stakeholders, especially financiers and contractors. The comparative analysis of these cases is conducted using data from the EJAtlas (further explained in Section 3.2.1) to understand how the impacts of Chinese-backed CFPP projects are distributed among diverse social actors, how local and international actors respond to them through social mobilizations, and the outcomes of these socio-environmental conflicts.

By going beyond a single-case study approach, the comparative political ecology approach based on the EJAtlas framework (Martinez-Alier, 2021b; Temper et al., 2015) offers a wider systematic evidence-based enquiry into the power relations and socio-metabolic processes surrounding environmental justice struggles. This is especially helpful in interpreting the CFPP projects with Chinese stakeholders' involvement in Indonesia and situating local communities' struggles in the cross-cultural and political context. This comparative political ecology approach has been used in several research outputs based on the EJAtlas, which entail analysis on different commodities and themes at local, national and global levels, as well as comparative studies across regions (Avila, 2018; Hanaček et al., 2022; Navas et al., 2022; Scheidel et al., 2023, 2020; Tran and Hanaček, 2023).

Interviews were conducted to complement the secondary data collected for the case studies and shed light on the Indonesian socio-political context relevant to the coal commodity chain, the impact of these socio-environmental conflicts and grassroots perspectives on Chinese overseas CFPP investment.

#### 3.2. Data collection

##### 3.2.1. EJAtlas database

The case data analyzed in this paper were collected from the Global Atlas of Environmental Justice (EJAtlas, [www.EJAtlas.org](http://www.EJAtlas.org)), an online inventory of ecological distribution conflicts based on scholarly and activist knowledge, which follows a pre-established coding system with over 200 data fields, including spatial, quantitative, and qualitative data (for more details regarding the methodology of the EJAtlas, see Temper et al., 2015, 2018, 2020). This also enables comparative analyses on issues such as the social actors involved in the conflicts, their forms of mobilization, and specific conflict outcomes (Martinez-Alier, 2021b; Scheidel et al., 2020).

The EJAtlas project started in 2012 and has nearly 4000 ecological distribution conflict cases registered as of January 2024, many of which have led to the interruption, delay or suspension of energy infrastructure projects, including CFPP projects around the world (Castán Broto and Baker, 2018; EJAtlas, 2021, 2020, 2017). The EJAtlas database is based on secondary sources, such as newspapers, NGO reports, legal proceedings, and academic studies. One limitation of the EJAtlas is its uneven geographical coverage, which is partly due to the varied link with local networks and limited access to information in some regions. To address this limitation, a preliminary criterion sampling of cases was conducted based on multiple databases, keyword search and semi-structured interviews as illustrated in the next sections. The author has also added new cases ( $n = 20$ ) in the EJAtlas in collaboration with other scholars and activists when cases identified in the screening process and mentioned in the interviews had not yet been included in the EJAtlas.

##### 3.2.2. Sample selection

The cases for the comparative analysis were selected based on a

mixed-methods purposive sampling technique known as complete collection (or criterion sampling) (Teddle and Yu, 2007). The sampling was conducted based on cases that met two criteria: (1) CFPP projects in Indonesia that has Chinese financing and/or contractor involvement, and (2) CFPP projects involving socio-environmental conflicts with publicly available documentation and/or insights from the local communities and civil society organizations.

There has been increasing availability of data on energy infrastructure projects, including ownership, contractor and geographical data, with some focusing on Chinese overseas investment. The databases curated by Global Energy Monitor (GEM), including the Global Coal Plant Tracker (GCPT) and Global Coal Project Finance Tracker (Global Energy Monitor, 2023a, 2023b), are the most comprehensive databases providing the relevant data for this research. To identify cases based on the first criteria, the author has mainly referred to GEM's databases and cross-checked with Boston University's China's Global Energy Finance (CGEF) Database and China's Global Power (CGP) Database (Boston University Global Development Policy Center, 2022a, 2022b). The database of "Coal Power Plants in Indonesia: Ownership, Investments, and Impacts" (Tritto, 2021b) was also used to cross-check the screening results.

For the further sampling based on the second criteria, a search-engine based keyword search in both English and Indonesian language was conducted to come up with a list of CFPPs that have faced or are still facing resistance by local communities and civil society organizations. This list was further refined by the information collected during the interviews. This process resulted in a shortlist of 25 CFPP projects that have involved various levels of socio-environmental conflicts.

Both secondary and primary data was collected for the case studies under analysis following the EJAtlas framework as discussed in Section 3.2.1. Secondary data was collected through desktop research and content analysis of a variety of data sources to contrast and enhance the completeness of information in the description of the context, process, and outcome of the socio-environmental conflicts. Selected sources include media reports and interviews, reports from NGOs and environmental justice organizations, posts on social media, video documentaries, evidence from impacted communities, government authority documents, legal proceedings and academic papers. Primary data collection was conducted through semi-structured interviews as illustrated in the following section.

The list of 25 cases under analysis within the scope of this study and the links of these cases in the EJAtlas are provided in Appendix A. The cases, when referred to in this paper, would be mentioned in the format of a combination of alphabetical and numeric ID. The alphabetical ID represents the type of the corresponding CFPP(s), including G for general, M for mine-mouth and C for captive.

##### 3.2.3. Remote semi-structured interviews

The arrival of the COVID-19 pandemic has made it impossible to travel to Indonesia for fieldwork within the timeframe of this research. As an alternative, semi-structured interviews were conducted remotely. Interviews were adopted as part of the data collection method because they yield rich, in-depth qualitative data (O'Leary, 2017), which helps to enrich and verify the secondary data. These interviews were conducted with an objective to understand the conflict dynamics linked to coal in Indonesia, specifically, the driver and outcomes of local resistance towards CFPPs, as well as the bottom-up perspectives on Chinese overseas energy investment in Indonesia.

The interviews were conducted in an open-end semi-structured format, with a set of pre-determined interview questions, while specific questions were adapted for each interviewee regarding their expertise area and the CFPP projects that they are related to (see Appendix B for the list of interview questions). The remote interviews with local stakeholders in Indonesia were carried out using a snowball sampling technique and followed a saturation principle, where interviews stop when additional information obtained from interviews becomes



redundant or do not add to previously collected data. With a snowball sampling approach, the interviews also allowed identifying other relevant interviewees.

A total of 28 interviews were conducted between June 2021 and February 2023 with 37 interviewees involved. Interviewees covered different types of stakeholders, including local and international NGOs, government officials, company representatives, activists, and local residents. Consent was obtained from interviewees prior to the interviews, and they were informed that the interviews would be recorded anonymously. The interviews, when referred to in this paper, would be mentioned in the format of numeric ID e.g., “Interview 1” and the type of interviewee e.g., “NGO representative” (see [Appendix C](#) for more details of the interviews and corresponding numeric IDs).

## 4. Results

### 4.1. Mapping out CFPPs with Chinese participation

A total of 25 cases have been identified that involve socio-environmental conflicts of varying intensity against CFPP projects with Chinese financing (loan and/or equity investment) and/or contracting (see [Fig. 2](#) and [Appendix A](#) for more details). These include three major types of CFPP projects: general CFPPs (16 cases), mine-mouth CFPPs (5 cases), and captive CFPPs (4 cases) as part of an industrial complex, such as nickel smelting. The cases, when referred to in [Fig. 2](#) and the rest of the paper, are represented by corresponding case IDs listed in [Appendix A](#). The letter “G”, “M” and “C” in the case IDs stand for the corresponding type of the CFPP(s), with “G” for general, “M” for mine-mouth, and “C” for captive.

The cases under analysis are in rural or semi-urban areas across 14

provinces of Indonesia. As one interviewee (Interview 9, NGO representative) indicated, “the lack of publicly known conflicts does not mean that there is a lack of environmental and social issues”. The list of cases curated in this study may still not represent the full picture of local resistance. Nonetheless it provides the most comprehensive overview to date of socio-environmental conflicts related to CFPPs with Chinese stakeholder involvement in Indonesia.

The interviews revealed that the three types of CFPP projects have varied levels of environmental and social impacts and faced varied levels of resistance. General CFPPs (G1-G16) are mostly located on the coast, making use of sea water for cooling, as well as Indonesia’s sea transportation advantage to enable the transport of coal between coal producing regions such as Sumatra and Kalimantan and the CFPPs. Mine-mouth CFPPs (M1-M5) make use of the coal, mostly lignite with lower calorific value, from mining sites near the plant to reduce the transportation cost, which has also been promoted to increase domestic consumption of coal. Mine-mouth CFPPs are mostly located remotely, which makes it more difficult to monitor and expose their socio-environmental impacts. The mine-mouth CFPPs have also faced corruption controversies due to lack of transparency in PLN’s developer appointment system ([Hamdi, 2019](#)). In recent years, captive CFPPs (C1-C4) linked to industrial facilities have emerged especially since Indonesia introduced the export ban of unprocessed ores in 2014 ([Camba et al., 2020](#)). These captive CFPPs support the energy-intensive smelting of minerals such as nickel, which is essential for the manufacturing of “low-carbon” technologies ([Tritto, 2023](#)). Privately-owned Chinese companies have contributed significantly to the boom of nickel smelters and industrial parks constructed with large-scale captive CFPPs.

The 25 cases include CFPP projects with different statuses. The



**Fig. 2.** Map of socio-environmental conflicts against CFPPs involving Chinese finance and contracting in Indonesia. Data compiled by author based on the EJAtlas data, map created by Arielle Landau.

projects in operation were completed between 2009 and 2022. Eight cases include units that are still under construction, amounting to 12,130 MW. Among the 25 cases, 13 involve units announced post the launch of the BRI in September 2013, while 14 involve units announced before the BRI. Two cases, Cilacap Sumber (G6) and Nagan Raya (G9), include units that were announced both before and after the BRI.

The scale of the non-captive CFPP projects ranges from 130 MW (Tanjung Kasam CFPP, G16) to 2000 MW (Jawa-7 CFPP, G8). The captive CFPP complex has a much larger scale, ranging from 2200 MW to 5440 MW. Since these captive CFPPs are not connected to the grid and not included in the RUPTL, the information on the ownership, technology and financier of these CFPPs is limited. As one interviewee (Interview 26, company representative) indicated, “No one knows how much on earth CFPP capacity is within these nickel industrial parks...a large amount has already received pre-permit (before President Xi’s 2021 announcement of no more overseas coal power)”. At least 3.58 GW of CFPP capacity had been planned to be added to the existing 3.16 GW CFPPs used for nickel refining in Indonesia as of 2021 (CREA and GEM, 2021).

Local resistance takes place at different stages of the projects and does not always directly target the Chinese financier or contractor. For example, some conflicts have taken place after the project was transferred to PLN or its subsidiary. In some other cases, a CFPP complex involves multiple units and a range of international financiers and contractors. For example, Chinese companies are involved in the 660 MW Paiton Baru power plant (G13), while the entire 4710 MW Paiton investment CFPP complex involves ownership by PLN and its subsidiary, as well as a joint venture between French and Japanese companies. Another example is the 4025 MW Banten Suralaya complex (G3), where Chinese financier and contractor supported the 625 MW unit 8 and Bank of China is known as part of the lending consortium that supported the 2000 MW unit 9–10 (also known as Jawa 9–10). A similar example is the Indramayu power plant (G7), where the first three units were built with Chinese financing, while unit 4 and 5 received financing support from Japanese investors. The protest and lawsuit against unit 4 and 5 was targeting the Japanese financier, which led to the revoking of the project’s environmental permit. However, since the opposition by local residents was built upon their perceptions of the pollution from the first three units with Chinese investment, the Indramayu power plant has been included in this study.

Studies have shown that Chinese investment involves a significantly higher number of subcritical power plants in Indonesia than other foreign investors, especially under FTP-1 and FTP-2 (Liu et al., 2022a; Tritto, 2021a). While this may potentially make Chinese investment more susceptible to socio-environmental conflicts, the projects under analysis indicate that contestations continued despite the upgrade to supercritical or ultra-supercritical technology (e.g. in G1, G6, G8, M1), showing a similar pattern to Japanese CFPP investments (Tritto, 2021a). An interviewee (Interview 1, NGO representative) explained that the majority of Indonesia’s CFPPs lack air pollutant control technologies for SO<sub>2</sub> and NO<sub>x</sub> due to the country’s lax air pollutant emissions standards and the upgrade to supercritical or ultra-supercritical technology without stricter air pollutant control measures does not necessarily alleviate communities’ concerns.

## 4.2. Grassroots perceptions manifested through conflicts

The cases under analysis demonstrate the unequal distribution of environmental, social, and health impacts of CFPPs. These impacts have been reflected in the complaints and petitions of local residents and public campaigns. Table 1 provides an overview of the most frequently reported impacts of these projects based on the 25 conflict cases and the interviews. The reported impacts complement the existing scholarship and grey literature on the macro-level environmental and social impacts of Chinese overseas coal-fired energy infrastructure investment and exemplify nuanced and uneven distribution of such impacts.

**Table 1**

Major environmental, social and health impacts based on the data of 25 socio-environmental conflict cases in the EJAtlas and interviews.

Environmental	Social	Health
- Air pollution, Floods, Food insecurity (crop damage), Groundwater pollution or depletion, Noise pollution, Soil contamination and erosion, Surface water pollution/Decreasing water quality, Waste overflow	- Displacement, Unemployment, Increase in corruption/co-optation of different actors, Increase in violence and crime, Lack of work security/ Unemployment, Land dispossession, Loss of livelihood, Militarization and increased police presence	- Accidents, Death, Occupational disease and accidents
- Biodiversity loss, Climate change, Deforestation and loss of vegetation cover, Desertification/Drought, Reduced ecological/hydrological connectivity	- Loss of traditional knowledge/practices/cultures, Loss of sense of place	- Mental problems
- Loss of landscape/aesthetic degradation		- Exposure to unknown or uncertain complex risks

As shown in many cases, the burden of resisting extractive and polluting energy infrastructure projects has been overwhelmingly shouldered by local communities, especially fishing and farming communities, women and Indigenous Peoples. The result complements the quantitative analysis of the risks posed by China’s overseas investment to marine socio-ecological systems (Simmons et al., 2022) and resonates with the call for “blue justice” in view of the struggles faced by fisherfolk around the world (Blythe et al., 2023; Ertör, 2021).

It is worth differentiating the claims raised by local communities, local NGOs, and international NGOs. Local communities tend to take livelihood concerns, i.e. the pollution of the CFPPs and the impact on their day-to-day life as the starting point of their complaints, whereas the intervention of national and international NGOs have brought in more connection to climate change and climate justice issues. The convergence of the two approaches has been seen in Banten Suralaya (G3) and Celukan Bawang (G5).

In addition to visible and measurable impacts, the loss of incommensurable values has been conveyed in cases where CFPPs have affected traditional forms of fishing (e.g. in C1, G1, G3-G13) and Indigenous communities’ living (e.g. in C3, M1). Besides, the CFPPs’ impact extends beyond the infrastructure site and its immediate neighborhood. It travels to communities where coal is mined, to the sea where coal is transported, and to the rivers that have been intercepted, although they used to be the source for communities’ livelihood, demonstrating “embodied injustice” in the coal value chain (Healy et al., 2019).

## 4.3. Social responses to CFPPs - resistance and outcomes

### 4.3.1. Mobilizing groups

A variety of mobilizing groups are involved in the 25 socio-environmental conflict cases (see Fig. 3-a). Local environmental justice organizations (EJOs) are involved in 21 out of 25 cases, showcasing their essential role in the anti-CFPP movements across the country. The most active NGO is WALHI, the Indonesian branch of Friends of Earth, and its regional branches across Indonesia. However, there is no case where WALHI acts alone. It is a common strategy that WALHI collaborates with local NGOs and legal aid organizations, or works as part of a broader alliance, such as the Bersihkan Indonesia network (meaning “clean up Indonesia”).

Compared to domestic NGOs, international NGOs such as Greenpeace are involved in a smaller number of “high-profile” cases such as

Category	Mobilizing group	Category	Repertoires of contention	Category	Major outcome	Number of occurrences
High frequency (>10)	Farmers	High frequency (>10)	Involvement of national and international NGOs	Legal	Court decision (victory for environmental justice)	1
	Fisherfolk		Official complaint letters and petitions		Court decision (failure for environmental justice)	6
	Local NGOs		Street protest/marches	Economic	Compensation	4
	Neighbors/citizens/communities		Development of a network/collective action		Project cancelled/Withdrawal of investment	3
Medium frequency (4-10)	Industrial workers	Medium frequency (6-10)	Development of alternative proposals	Socio-political	Repression, Violent targeting of activists, Criminalization of activists	2
	International NGOs		Lawsuits, court cases, judicial activism		Migration/displacement	1
	Student		Public campaigns			
	Women		Artistic and creative actions			
Low frequency (1-3)	Children	Low frequency (1-5)	Blockades			
	Ethnically/racially discriminated groups		Community-based participative research			
	Indigenous groups		Creation of alternative reports/knowledge			
	Informal workers		Land occupation			
	Landless peasants		Media based activism/alternative media			
	Local scientists/professionals		Objections to the EIA			
	Migrant workers		Occupation of buildings/public spaces			
	Musicians/Artist		Strikes			
	Trade unions					

**Fig. 3.** Social responses to CFPPs ( $n = 25$ ). 3-a (left): Mobilizing group; 3-b (middle): Repertoires of contention; 3-c (right): Outcome. Compiled by author based on EJAtlas data.

Celukan Bawang CFPP (G5) in Bali. An international NGO interviewee (Interview 3) indicated that they would focus on specific cases with prior consideration on the potential outcome. In areas where NGOs are not intervening, investigative journalism plays an important role in uncovering local issues, with Java 7 (G8) as an example. As a journalist interviewee (Interview 24) noted, “There are movements from the local people over there. But there is limited local NGO support”.

Fisherfolk and their networks are the most active local community groups in these mobilizations, which corresponds to the fact that the majority of the CFPPs, especially general CFPPs (G1–16), are located on the coast. The construction of CFPPs at coastal locations have directly affected the livelihood of fisherfolk. Women, students, farmers and artists are also important participants. In the cases of captive CFPPs, labor organizations and Indigenous community members were also involved. Despite the different nature of their grievance from environmental NGOs, the conflicts manifest the unequal distribution of social injustices that was not adequately addressed.

Women play an important role in a number of cases (such as G6, G8, G11, G15 and C1). On one hand, they suffer directly and indirectly from the pollution caused by CFPPs. As one interviewee (interview 26, NGO representative) noted, “when coal ashes come to their house, the women are responsible for cleaning up the ashes...also the coal ashes affected lots of children and women are responsible for taking care of the children”. On the other hand, women, especially mothers, have formed coalitions to protest against the CFPP projects such as in the Nagan Raya CFPP case (G9).

In some cases, local stakeholders also form alliances with international NGOs and networks, which as multiple interviewees indicated, “expanded the influence and impact of the campaigns”. Local and international NGOs have served as intermediaries to bridge local communities’ demands most immediately related to their livelihood with the global climate justice movements. In some cases with overseas investment from countries other than China (not included in the sample), Indonesian NGOs collaborated with financing country NGOs in Japan and Korea to file lawsuits or initiate cross-country campaigns (e.g. Batang CFPP and Cirebon CFPP (EJAtlas, 2019a, 2019b)). However, such collaboration was not taken up in China.

#### 4.3.2. Repertoires of contention

Fig. 3-b provides an overview of the repertoires of contention. The cases demonstrate some common approaches, including official complaints such as filing letters and petitions and street protest. NGOs’ intervention in the approval of environmental permit and environmental impact assessment, which involves lawsuits and legal procedures, is one of the most widely used tactics at local or national level. This

corresponds to the results from a global level assessment of strategies used by environmental defenders (Scheidel et al., 2020). Blockades were used in a smaller number of cases as an approach to directly confront with the CFPP companies.

Artistic forms of mobilization were used in Celukan Bawang (G5) and Pangkalan Susu (G11). In the former case, Greenpeace Indonesia organized a music festival against the backdrop of the Celukan Bawang CFPP in Bali. In the latter case, the fishing community used poems in their demonstration against the Pangkalan Susu CFPP. Banners with local characteristics were also displayed in various protests (e.g. G4, G5, G11). Several interviewees (Interview 2, 3, 28, NGO representative) indicated the importance of culture in such place-based contestations. Complementing direct confrontation and legal approaches, art played the role to convey incommensurable values such as communities’ traditions and emotional connections to “the land that give them food and the sea that give them fish” (Interview 28, NGO representative). This also resonates with the findings of a study on anti-coal movement in California, which highlighted the role of artistic activism in transforming the socio-spatial dynamics that contributed to sustainable transformation (Sanz and Rodriguez-Labajos, 2021).

Interviewees also indicated the impact of the Covid-19 pandemic on their activities, including the restriction of in-person demonstrations and protests. The Omnibus Law and the revision of the Mining Law were passed in 2020, which were heavily contested before the pandemic. The political and legal environment has also led to changes in grassroots strategies over the years. As one interviewee (Interview 8, NGO representative) noted, “5–6 years ago, legal battle in court was one of our best strategies...We almost won every case. But after that, the reverse is the case. They changed the regulation about the environmental impact assessment. We can no longer file lawsuits for environmental permit (with the participatory process limited to those directly impacted)...It’s more difficult for us in the legal battle”.

#### 4.3.3. Outcome and impact

Fig. 3-c provides an overview of the major outcomes from legal, economic, operational and socio-political categories. Three out of the 25 projects have been cancelled or shelved, namely the expansion of Celukan Bawang CFPP (G4), and two proposed projects, Riau-1 (M3) and Tanjung Jati A (G14). The cancellation of the expansion phase of the Indramayu CFPP project (G7) was not taken into consideration, as the suspended expansion project was financed by a Japanese financier, while the initial unit 1–3 financed and constructed by Chinese companies are still in operation.

Even though it is difficult to attribute the project cancellation solely to grassroots intervention, they do form an important part of the

struggles that lead to the final cancellation. Litigation strategies and the coalition between local and international campaigns have been applied in the cases where projects or expansion projects have been suspended. This corresponds to the results of studies that analyzed mechanisms that could lead to effective social mobilizations against coal related infrastructures across various locations (Delina, 2022; Fünfgeld, 2019; Nace, 2010).

The Celukan Bawang CFPP case (G5) is most frequently referred to by interviewees as a “success”, while one interviewee (Interview 7, NGO representative) considered it as a “trade-off”. Despite the communities’ loss in court, the local government in Bali decided to cancel the expansion plan. However, it is still unclear whether the expansion will be replaced by a gas-fired power plant. The cancellation of Tanjung Jati A (G15), also known as Jawa-3, has been considered the first climate litigation in Indonesia (EJAtlas, 2022). In June 2022, WALHI appealed against the plant’s environmental permit on grounds of climate and financial impacts. The Regional State Administrative Court of Bandung granted WALHI’s claim in full and revoked the plant’s environmental permit.

Several interviewees (Interview 1, 2, 5, 7, 10, NGO representatives) highlighted the importance of anti-corruption movements in Indonesia, and even considered their impact overshadowing that from environmental movements. Especially with the closed procurement system for mine-mouth CFPPs, the risks of bribery and corruption often compound the socio-environmental risks of the projects. The cancellation of Riau-1 (M3) to some extent followed anti-corruption inspections that involved high-level officials in the government.

Interviewees have provided multi-dimensional definitions of “success” in addition to the cancellation of projects, such as the temporary delay of projects during the litigation process and the increase of public awareness and media attention. As one interviewee (Interview 8, NGO representative) noted, the point is not simply to highlight the projects that are stopped, “these are ongoing struggles part of many local communities’ daily life and have been ongoing over the years, with diverse actors and outcomes involved”. The same interviewee added: “If we expose the project together with the community and raise our voice against unjust projects, it can also mean winning... it means that we put a seat of resistance for the next generation as well.” It is important to note that even in such broad terms, the “success” examples are still rare due to lack of capacity and of national and international NGO support in most cases.

Despite the frequent adoption of legal approaches, the results of most of the litigations, appeals and judicial review requests have not served environmental justice. Even in the “successful” case of Celukan Bawang (G5), the local court dismissed the lawsuit filed by local community members and Greenpeace Indonesia against the plant’s environmental permit. This dismissal decision was subsequently upheld by the Court of Appeal and the Supreme Court. In addition, a number of interviews (Interview 3, 6, 7, 8, 10, NGO representatives) mentioned how the revision of law, including the Omnibus Law (also known as the Job Creation Law), the Mining Law, and the Corruption Eradication Law (known as the “KPK law”), has systematically weakened NGOs’ participation in the decision-making process.

Some of the conflicts have led to repressions or violent targeting of activists. For example, in Indramayu (G6), three residents were arrested and accused of having insulted the Indonesian flag by raising it upside down. On the other hand, non-violent forms of repression have also been reported during interviews. As one interviewee (Interview 8, NGO representative) said: “the form of repression to the activists and communities are not always in the harsh way or violent way... They can use also, with their money, with the corporate social responsibility, provide you with clean water source, with compensation, relocation, etc.”

Most interviewees from civil society organizations indicated that the local anti-coal activism does not target China or the BRI as a stand-alone stakeholder. The local communities and civil society take the impact on their livelihood as the starting point and takes initiative despite of the

nationality of the investors. In some cases, the Chinese stakeholders did not directly respond to their letter or request, but indirectly addressed their concerns. As one interviewee (Interview 26, NGO representative) noted, “they may make efforts silently”, indicating that the Chinese stakeholders also care about their reputation but tend to make changes without public communication.

## 5. Discussion

In the book *Friction* that draws upon extensive fieldwork in South Kalimantan, Indonesia, Anna Tsing briefly touched upon her encounter with a business manager from a coal trading company that imported coal from Kalimantan to India in 2000. She portrayed the coal commodity chain as “an arena of cultural production” (Tsing, 2005). In the two decades following that encounter, the coal commodity chain and the frictions in this chain have evolved into a more diverse and complex cross-cultural arena in Indonesia. How do bottom-up initiatives in opposition to the CFPPs with Chinese stakeholder involvement potentially influence the “green BRI” agenda and the sustainable energy future of the host country?

Social mobilizations exist with the “hope” for a future that could be changed or transformed. The findings of this study resonate with scholars that have argued that Chinese investment abroad is significantly shaped by local socio-political contexts, which can constrain the change and transformation brought about by local resistance against CFPPs (Oliveira et al., 2020; Pavličević and Talmacs, 2022; Rogelja, 2020; Tritto and Camba, 2022). The weak environmental governance system and the lack of redress mechanisms in the host country, in this case Indonesia, contributes to the gap between the “green BRI” vision and realities on the ground. In absence of “green BRI” governance on the ground, the socio-environmental conflicts under analysis serve as an example of “resistance as governance” (Gobby et al., 2021) and demonstrate the valuation languages of local communities and civil society, which incorporate traditional forms of knowledge and livelihoods as well as incommensurable values that have not been considered in economic compensation and corporate social responsibility. All these take place in a context where the consumption of coal continues to increase in China, Indonesia and at the global level (IEA, 2023).

While China committed to no more overseas coal financing since 2021, the legacy of built and planned CFPPs will persist. Resonating with Rogelja’s (2020) analysis in the Balkan context, the inertia from CFPP projects remains long after they are built and paid off. While studies have started to look at post-mining landscapes in Indonesia, the socio-environmental injustice legacies of CFPPs, some of which are still under construction, tend to become silenced and invisible behind the so-called “just transition” agendas. The socio-environmental conflicts analyzed in this study have made such legacies of environmental pollution and dispossession visible.

In addition, the smelting of nickel, an essential metal for energy transition, of which Indonesia is the world’s top producer, has become a reason to increase the number and scale of CFPPs. The captive CFPPs under analysis demonstrate the embodied socio-environmental injustices in the energy transition supply chain and exemplify fossil-fueled “conflicted transitions” (Healy et al., 2019; Sovacool et al., 2022). The four cases on nickel-based industrial parks powered by large-scale coal-fired facilities reveal that the unequal distribution of socio-environmental impacts is embedded in the emerging “sustainable” transition. This is compounded by Indonesia’s vague definition of “renewable” or “new” energy in the draft New Energy and Renewable Energy Bill (EBET), where coal chemical projects such as coal-to-gas and coal-to-oil projects have the potential to be considered as “new energy” (Interview 3, 7 and 8, NGO representative; Sulaiman and Widianto, 2022).

With regard to the conflictivity of CFPPs, the cases analyzed do not point to a “Chinese exception”. In fact, a previous study observed similarities between China and the other two top CFPP financiers in



Indonesia, Japan and Korea, in terms of how their CFPP investments have led to contestations, and pointed out that Japanese investments in CFPPs were even associated with a larger number of environmental and community-related issues (Tritto, 2021a). It corresponds to “Global China” scholars moving away from “China as exception” to understand “China’s mutual constitution with contemporary global neoliberalism” (Klinger, 2018).

What differentiates Chinese actors and those of other countries is their response and engagement with the grassroots and their redress mechanism. This has also led to different reactions from the grassroots, which in turn, led to different outcomes. For example, compared to Japan and Korea, there is less direct engagement of Chinese companies with local Indonesian NGOs and rare intervention of domestic Chinese NGOs in socio-environmental conflicts abroad. This to some extent concurs with studies that indicate that international NGOs are playing an intermediary role in China’s “Going Out” and BRI strategy, compared to domestic NGOs that can be constrained in their knowledge of host countries’ socio-political context (Farid and Li, 2021; Hsu et al., 2016). In addition, Indonesian NGOs also contribute to the intermediary role in the absence of Chinese and international NGOs as in most of the cases in this study.

As discussed in studies on other forms of energy infrastructure investment by Chinese stakeholders, the lack of communication and engagement with local communities and the lack of recognition of their values could exacerbate conflicts and lead to loss of traditional culture and identity (Dave, 2022; Gong, 2018; Hensengerth, 2017; Siciliano et al., 2019). This study echoes these observations and reaffirms the call for understanding and respecting different views and norms of local people in host countries (Chen and Liu, 2019; He and Tritto, 2022; Shi and Yao, 2019).

## 6. Conclusion

The 25 cases in this study exemplify the frictions in broader global connections where Chinese energy infrastructure financing and contracting has been playing an increasing role. Frictions are sometimes unavoidable when planning and constructing energy infrastructure projects. In Indonesia, projects financed and supported by other countries such as Japan and Korea also received various forms of opposition. However, Chinese stakeholders have been less communicative and responsive when confronted with such frictions. This calls for more transparent communication and engagement with local communities to resolve such conflicts and retain the reputation of project financiers as well as engineering companies. Public participation and feedback from bottom-up mobilizations could potentially provide risk warning signals for Chinese companies that conduct overseas CFPP investment and reduce operational risks, while also preventing and alleviating socio-environmental conflicts.

The year 2023 marked the 10-year anniversary of the announcement of the BRI. While the research on the BRI and Global China has been advancing over the years, more studies are still needed to understand the environmental justice and climate change implications from the bottom-up perspective, including the “blue justice” dimension. This study proposes an alternative approach to make visible the grounded perspectives of the BRI, by looking at socio-environmental conflicts with the

participation of communities and civil society based on the EJAtlas database. Through a systematic mapping and analysis of 25 cases in the EJAtlas, this study points to the need to examine the social and political reality on the ground and reinforces the call for a research agenda on BRI that not only takes into consideration the China-side perspective, but also situates in the local socio-political dynamics, including the politics from below, that shapes the vision and frictions of a “Green Belt and Road”.

The connection with international networks and broader alliances that bridge the local livelihood and environmental concerns with the global climate crisis helps to support local struggles amidst domestic political constraints and global capital influence. However, local communities in Indonesia, especially fisherfolk, have been shouldering a large proportion of the resistance against injustices brought out by CFPPs. This calls for more studies on the impact of Chinese investment on marine socio-ecological systems and coastal livelihoods in addition to terrestrial and more visible effects.

The development of “sustainable” energy transition also requires huge amount of fossil-fueled mining and processing that could be important for both BRI governance and Indonesia’s just transition. It might lead again to unequal distribution of social, environmental and health impacts as coal-fired energy infrastructures have done. Revealing the grassroots perceptions and resistances helps to understand why and how grassroots opposition to energy infrastructures empowers marginalized voices. It also calls for research and policy efforts that take such perspectives into consideration, instead of perceiving them as passive recipients of an energy infrastructure boom intertwined in the influence of Global China.

## CRedit authorship contribution statement

**Bowen Gu:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing – original draft, Writing – review & editing.

## Acknowledgements

This work was supported by the Ministerio de Economía y Competitividad (MINECO) grant from the Spanish government for predoctoral researchers and the ICTA-UAB “Maria de Maeztu” Programme for Units of Excellence of the Spanish Ministry of Science and Innovation (CEX2019-000940-M). The author would like to thank Arnim Scheidel, Joan Martinez-Alier, Juan Liu, Elia Apostolopoulou, and colleagues at the NMBU Political Ecology of Scarcity, Limits and Degrowth summer course for their feedback on earlier versions of the paper. The author acknowledges the support of those that have contributed to some of the cases analyzed in this paper, including but not limited to Emmy Iwarsson, Aart Kerremans, Sara Mingorria Martinez, Irene Iniesta Arandia, Marcel Llaverro Pasquina and EJAtlas moderators. The author would also like to thank Arielle Landau for the support with map creation and Nicky Rehnberg for the help with proofreading, as well as the anonymous reviewers for their insightful comments and feedback. Last but not the least, special thanks go to civil society and community members that accepted my interview requests, shared their knowledge without reservation and inspired this research.

## Appendix A – List of CFPPs and EJAtlas cases

Case ID	Name of case in EJAtlas	Name of related CFPP	Type
G1	Adipala coal-fired power plant, Bunton, Central Java, Indonesia	Adipala power station	General
G2	Banten Labuan coal-fired power plant, Banten, Indonesia	Banten Labuan power station	General
G3	Banten Suralaya Coal-fired Power Complex, Banten, Indonesia	Banten Suralaya power station	General

(continued on next page)

(continued)

Case ID	Name of case in EJAtlas	Name of related CFPP	Type
G4	Bengkulu Coal-fired Power Plant, Indonesia	Bengkulu power station	General
G5	Celukan Bawang Coal Power Station, North Bali, Indonesia	Celukan Bawang power station	General
G6	Protest against pollution from coal power plant, Cilacap, Central Java, Indonesia	Cilacap Sumber power station	General
G7	Indramayu Coal Power Plant, West Java, Indonesia	Indramayu power station	General
G8	Java 7 Coal-fired Power Plant, Indonesia	Jawa-7 power station	General
G9	Nagan Raya Coal-fired Power Plant, Aceh Province, Indonesia	Nagan Raya power station	General
G10	Coal fired power plant near conservation areas in Pacitan, East Java, Indonesia	Pacitan power station	General
G11	Pangkalan Susu Coal-fired Power Plant, North Sumatra, Indonesia	Pangkalan Susu power station	General
G12	Coal spill near Pelabuhan Ratu Coal-fired Power Plant, West Java, Indonesia	Pelabuhan Ratu power station	General
G13	Paiton Baru power plant, East Java, Indonesia	PLN Paiton Baru power station	General
G14	Tanjung Awar-Awar power plant, East Java, Indonesia	Tanjung Awar-Awar power station	General
G15	Tanjung Jati A coal-fired power plant, Indonesia	Tanjung Jati A power station	General
G16	Tanjung Kasam power plant, Riau, Indonesia	Tanjung Kasam power station	General
M1	Sumsel-8 coal-fired power plant, South Sumatra, Indonesia	Bangko Tengah power station	Mine-mouth
M2	Proposed Jambi-2 coal-fired power plant, Jambi, Indonesia	Jambi-2 power station	Mine-mouth
M3	Proposed Riau-1 coal-fired power plant shelved after corruption investigation in Indonesia	Riau-1 power station	Mine-mouth
M4	Simpang Belimbing power plant, South Sumatra, Indonesia	Shenhua Guohua power station	Mine-mouth
M5	Sumsel-1 coal-fired power plant, South Sumatra, Indonesia	Sumsel-1 power station	Mine-mouth
C1	Nickel rush threatens the health and environment of Obi Island's people, Indonesia	Halmahera Persada Lygend Nickel Smelter power station, MSP Pulau Obi Power Station	Captive
C2	Indonesia Morowali Industrial Park (IMIP), Central Sulawesi, Indonesia	Sulawesi Mining power station	Captive
C3	Indonesia Weda Bay Industrial Park (IWIP), North Maluku, Indonesia	Weda Bay power station, Youshan Nickel power station, Weda Bay Nickel Mines Ltd. power station	Captive
C4	Delong Nickel Industrial Area, South Sulawesi, Indonesia	Delong Nickel Phase I, Delong Nickel Phase II	Captive

## Appendix B – List of interview questions

### Introduction

- Self-introduction and introduction about your organization
- How does your organization work on coal and energy issues?

### The political economy context of coal in Indonesia

- The political and legal context in Indonesia: What are the most important agencies, policies and regulations affecting the coal sector, and how does it impact the local resistance towards coal?
- The 35 GW plan and the two phases of fast track program (FTP): What is the impact on energy access and the environment? Is energy security and cost a justified rationale for developing coal-fired power plants (CFPPs) in Indonesia?
- International stakeholder and China's involvement: What do you think of the involvement of international investors and companies in Indonesia's coal sector? Is there any difference by country? How do you consider China's role with the BRI?

### The driver, outcome and impact of local resistance towards coal (power plant)

- What is your organization's coal-related research and campaign focused on? Which local resistance movements against CFPP has your organization supported?
- Who are the key stakeholders behind the resistance? Any connection/collaboration with international stakeholders and global climate justice campaigns?
- What are the main reasons of local resistance towards CFPP? Is there a difference by location, nature of specific power plants, or other factors?
- How is the impact of local resistance towards coal? What are the most successful examples?
- How do you think of the coverage of environmental justice movements in the EJAtlas? Would you suggest any additional cases?
- What are the key strategies? Which are the most successful ones?
- Some of the protests included artistic form. What kind of role does art play in local mobilizations in Indonesia?
- Underlying factors that enable local resistance to have an impact/positive outcome?

### Forward-looking alternative solutions

- What are the key expectations from the local community and NGOs? (short-term and long-term expectations)
- What is the outlook of the coal (mining and power plant) sector in Indonesia? What are the key factors affecting such, both domestic and international?

- What is your view on Indonesia's development of the coal chemical industry e.g. coal-to-gas projects?

### Appendix C – List of interviewees (anonymized)

Interview ID	Interviewee ID	Type	Interview method	Interview date
1	1	NGO (International)	Zoom call	21/05/2021
2	2	NGO (Indonesia)	Zoom call	24/05/2021
3	3a	NGO (International)	Zoom call	25/05/2021
3	3b	NGO (International)	Zoom call	25/05/2021
4	4	NGO (Indonesia)	Zoom call	27/05/2021
5	5	NGO (Indonesia)	Zoom call	01/06/2021
6	6a	NGO (Indonesia)	Zoom call	28/05/2021
6	6b	NGO (Indonesia)	Zoom call	29/05/2021
6	6c	NGO (Indonesia)	Zoom call	30/05/2021
7	7	NGO (Indonesia)	Zoom call	31/05/2021
8	8a	NGO (Indonesia)	Zoom call	03/06/2021
8	8b	NGO (Indonesia)	Zoom call	03/06/2021
8	8c	NGO (Indonesia)	Zoom call	03/06/2021
8	8d	NGO (Indonesia)	Zoom call	03/06/2021
9	9	NGO (Indonesia)	Zoom call	04/06/2021
10	10	NGO (Indonesia)	Zoom call	04/06/2021
11	11	NGO (Indonesia)	Zoom call	04/06/2021
12	12	NGO (Indonesia)	Zoom call	09/06/2021
13	13	NGO (International)	Zoom call	09/06/2021
14	14	NGO (International)	Zoom call	09/06/2021
15	15	Government official	Zoom call	16/06/2021
16	16	NGO (Indonesia)	Zoom call	24/06/2021
17	17	Corporate staff	Zoom call	24/06/2021
18	18a	NGO (Indonesia)	Zoom call	30/06/2021
18	18b	NGO (Indonesia)	Zoom call	30/06/2021
19	19	NGO (Indonesia)	Zoom call	28/07/2021
20	20	NGO (International)	In-person meeting	30/07/2021
21	21	NGO (Indonesia)	Zoom call	22/02/2022
22	22	NGO (Indonesia)	Zoom call	01/03/2022
23	23	Community member	Facebook message	17/05/2022
24	24a	Journalist	Zoom call	12/07/2022
24	24b	Journalist	Zoom call	12/07/2022
25	25	Journalist/Community member	Email	15/07/2022
26	26	Corporate staff	In-person meeting	16/08/2022
27	27a	Youth	In-person meeting	04/09/2022
27	27b	Youth	In-person meeting	04/09/2022
28	28	NGO (International)	Zoom call	10/02/2023

### References

- Apostolopoulou, E., Pant, H., 2022. "Silk Road here we come": infrastructural myths, post-disaster politics, and the shifting urban geographies of Nepal. *Polit. Geogr.* 98, 102704 <https://doi.org/10.1016/J.POLGEO.2022.102704>.
- Ascensao, F., 2022. Energy crossroads under Chinas belt and road initiative. In: Jakob, M. (Ed.), *Handbook On Trade Policy and Climate Change*. Edward Elgar Publishing, pp. 43–57. <https://doi.org/10.4337/9781839103247>.
- Avila, S., 2018. Environmental justice and the expanding geography of wind power conflicts. *Sustain. Sci.* 13, 599–616. <https://doi.org/10.1007/s11625-018-0547-4>.
- Barter, D., Sar, M., 2023. Hydropower hegemony: examining civil society opposition to dams in Cambodia. *J. Develop. Stud.* 59, 961–979. <https://doi.org/10.1080/00220388.2023.2188110>.
- Blanchard, J.-M.F., 2021. Belt and road initiative (BRI) Blues: powering BRI research back on track to avoid choppy seas. *J. Chin. Polit. Sci.* <https://doi.org/10.1007/s11366-020-09717-0>.
- Blythe, J.L., Gill, D.A., Claudet, J., Bennett, N.J., Gurney, G.G., Baggio, J.A., Ban, N.C., Bernard, M.L., Brun, V., Darling, E.S., Di Franco, A., Epstein, G., Franks, P., Horan, R., Jupiter, S.D., Lau, J., Lazzari, N., Mahajan, S.L., Mangubhai, S., Naggea, J., Turner, R.A., Zafra-Calvo, N., 2023. Blue justice: a review of emerging scholarship and resistance movements. *Cambridge Prisms: Coastal Futures* 1, e15. <https://doi.org/10.1017/CFT.2023.4>.
- Boston University Global Development Policy Center, 2022a. China's Global Energy Finance Database. Boston University Global Development Policy Center. URL <http://www.bu.edu/cgef/> (accessed 7.7.23).
- Boston University Global Development Policy Center, 2022b. China's Global Power Database. Boston University Global Development Policy Center. URL <https://www.bu.edu/cgp/> (accessed 7.7.23).
- Boulle, M., 2019. The hazy rise of coal in Kenya: the actors, interests, and discursive contradictions shaping Kenya's electricity future. *Energy Res. Soc. Sci.* 56, 101205 <https://doi.org/10.1016/j.erss.2019.05.015>.
- BP, 2021. Statistical Review of World Energy 2021 [WWW Document]. URL <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2021-full-report.pdf> (accessed 6.26.23).
- Brown, B., Spiegel, S.J., 2017. Resisting coal: hydrocarbon politics and assemblages of protest in the UK and Indonesia. *Geoforum* 85, 101–111. <https://doi.org/10.1016/j.geoforum.2017.07.015>.
- Camba, A., Tritto, A., Silaban, M., 2020. From the postwar era to intensified Chinese intervention: variegated extractive regimes in the Philippines and Indonesia. *Extr. Ind. Soc.* 7, 1054–1065. <https://doi.org/10.1016/J.EXIS.2020.07.008>.
- Cardoso, A., Turhan, E., 2018. Examining new geographies of coal: dissenting energyscapes in Colombia and Turkey. *Appl. Energy* 224, 398–408. <https://doi.org/10.1016/J.APENERGY.2018.04.096>.
- Castán Broto, V., Baker, L., 2018. Spatial adventures in energy studies: an introduction to the special issue. *Energy Res. Soc. Sci.* 36, 1–10. <https://doi.org/10.1016/J.ERSS.2017.11.002>.
- Chen, J., Liu, W., 2019. The Belt and Road Strategy in International Business and Administration: corporate social responsibility. In: Liu, W., Zhang, Z., Chen, J.-X., Tsai, S.-B. (Eds.), *The Belt and Road Strategy in International Business and Administration*. IGI Global, Hershey, PA, pp. 28–51. <https://doi.org/10.4018/978-1-5225-8440-7.ch002>.
- Chen, X., Gallagher, K.P., Mauzerall, D.L., 2020. Chinese overseas development financing of electric power generation: a comparative analysis. *One Earth* 3, 491–503. <https://doi.org/10.1016/j.oneear.2020.09.015>.
- Cheon, A., Kang, S.-T., Ramachandran, S., Hopkins, J., 2021. Determinants of environmental conflict: when do communities mobilize against fossil fuel production? *J. Conflict Resol.* 1–29. <https://doi.org/10.1177/0022002721999778>.
- Coenen, J., Bager, S., Meyfroidt, P., Newig, J., Challies, E., 2020. Environmental governance of China's belt and road initiative. *environmental policy and governance* 30, 1–19. <https://doi.org/10.1002/eet.1901>.
- CREA and GEM, 2021. With China's withdrawal from overseas coal, the pipeline for new coal in Asia could drop to 22 GW — All of which will likely not be built [WWW Document]. URL [https://energyandcleanair.org/wp/wp-content/uploads/2021/11/Briefing\\_Chinas-withdrawal-from-overseas-coal-potential-drops-pipeline-to-22-GW\\_CREAGEM\\_Final.pdf](https://energyandcleanair.org/wp/wp-content/uploads/2021/11/Briefing_Chinas-withdrawal-from-overseas-coal-potential-drops-pipeline-to-22-GW_CREAGEM_Final.pdf) (accessed 2.6.23).
- Cui, R., Zhu, M., Cui, D., Tumiwa, F., Arinaldo, D., Li, D., Li, S., 2023. How an accelerated coal transition in Indonesia may affect Chinese developers [WWW Document]. URL [https://spp.umd.edu/sites/default/files/2023-03/report\\_Indonesiaoverseascoaldevlopers\\_3.20.pdf](https://spp.umd.edu/sites/default/files/2023-03/report_Indonesiaoverseascoaldevlopers_3.20.pdf) (accessed 2.6.23).

- Dave, B., 2022. Societal contestations and adaptations to the belt and road initiative in Kazakhstan. The China question: contestations and adaptations 113–136. [https://doi.org/10.1007/978-981-16-9105-8\\_6/COVER](https://doi.org/10.1007/978-981-16-9105-8_6/COVER).
- Delina, L.L., 2022. Coal development and its discontents: modes, strategies, and tactics of a localized, yet networked, anti-coal mobilisation in central Philippines. *Extr. Ind. Soc.* 9, 101043 <https://doi.org/10.1016/J.EXIS.2022.101043>.
- Delina, L.L., 2021. Topographies of coal mining dissent: power, politics, and protests in southern Philippines. *World Dev.* 137, 105194 <https://doi.org/10.1016/j.worlddev.2020.105194>.
- Edianto, A., Trencher, G., Matsubae, K., 2022. Why do some countries receive more international financing for coal-fired power plants than renewables? Influencing factors in 23 countries. *Energy Sustain. Develop.* 66, 177–188. <https://doi.org/10.1016/J.ESD.2021.12.004>.
- EJAtlas, 2022. Tanjung Jati A coal-fired power plant, Indonesia [WWW Document]. EJAtlas. URL <https://ejatlas.org/conflict/proposed-tanjung-jati-a-coal-fired-power-plant-indonesia/?translate=en> (accessed 2.8.23).
- EJAtlas, 2021. Coal power plant in Lamu, Kenya [WWW Document]. EJAtlas. URL <https://ejatlas.org/conflict/coal-power-plant-in-lamu-kenya> (accessed 6.16.23).
- EJAtlas, 2020. Tigyit coal mine and power plant, Shan State, Myanmar [WWW Document]. EJAtlas. URL <https://ejatlas.org/conflict/tigyit-coal-power-plant-shan-state-myanmar> (accessed 6.16.23).
- EJAtlas, 2019a. Cirebon I and II coal power plants, West Java, Indonesia [WWW Document]. EJAtlas. URL <https://ejatlas.org/conflict/cirebon-i-and-ii-coal-power-plants-west-java-indonesia> (accessed 7.7.23).
- EJAtlas, 2019b. Batang coal fired power plant, Central Java, Indonesia [WWW Document]. EJAtlas. URL <https://ejatlas.org/conflict/batang-coal-mining-central-java-indonesia> (accessed 7.7.23).
- EJAtlas, 2017. Banskhalhi coal power station, Chittagong, Bangladesh [WWW Document]. URL <https://www.ejatlas.org/conflict/banskhalhi-coal-power-station-chittagong-bangladesh> (accessed 6.8.23).
- Ertör, I., 2021. We are the oceans, we are the people!': fisher people's struggles for blue justice. *J. Peasant Stud.* <https://doi.org/10.1080/03066150.2021.1999932>.
- Farid, M., Li, H., 2021. International NGOs as intermediaries in China's "going out" strategy. *Int. Aff.* 97, 1945–1962. <https://doi.org/10.1093/ia/iab183>.
- Franceschini, I., Loubere, N., 2022. Global China as method. *Am. J. Sociol.* <https://doi.org/10.1086/231209>.
- Fünfeld, A., 2016. The state of coal mining in east Kalimantan: towards a political ecology of local stateness. *ASEAS - Austrian J. South-East Asian Stud.* 147–162. <https://doi.org/10.14764/10.ASEAS-2016.1-9>.
- Fünfeld, A., 2019. Hegemony and varieties of contestation: social movements and the struggle over coal-based energy production in Indonesia, in: Anderl, F., Daase, C., Deitelhoff, N., Kempf, V., Pfister, J., Wallmeier, P. (Eds.), *Rule and Resistance beyond the Nation State. Contestation, Escalation, Exit. Rowman and Littlefield International*, London, New York, pp. 89–114. URL [https://rowman.com/WebDocs/Rule\\_and\\_Resistance\\_Beyond\\_the\\_Nation\\_State\\_%20Anderl\\_OPEN\\_ACCESS.pdf](https://rowman.com/WebDocs/Rule_and_Resistance_Beyond_the_Nation_State_%20Anderl_OPEN_ACCESS.pdf).
- Gallagher, K.P., 2018. China's global energy finance: poised to lead. *Energy Res. Soc. Sci.* 35, 15–16. <https://doi.org/10.1016/j.erss.2018.01.001>.
- Gallagher, K.S., 2016. The carbon consequences of china's overseas investments in coal [WWW Document]. URL [https://sites.tufts.edu/cierp/files/2017/11/CIERPpb\\_ChinaCoal\\_HiRes.pdf](https://sites.tufts.edu/cierp/files/2017/11/CIERPpb_ChinaCoal_HiRes.pdf) (accessed 6.11.23).
- Gallagher, K.S., Bhandary, R., Narassimhan, E., Nguyen, Q.T., 2021. Banking on coal? Drivers of demand for Chinese overseas investments in coal in Bangladesh, India, Indonesia and Vietnam. *Energy Res. Soc. Sci.* 71, 101827 <https://doi.org/10.1016/j.erss.2020.101827>.
- Gallagher, K.S., Qi, Q., 2021. Chinese overseas investment policy: implications for climate change. *Glob. Policy* 12, 260–272. <https://doi.org/10.1111/1758-5899.12952>.
- Global Energy Monitor, 2023a. Global Coal Project Finance Tracker. URL <https://globalenergymonitor.org/projects/global-coal-project-finance-tracker/> (accessed 7.7.23).
- Global Energy Monitor, 2023b. Global coal plant tracker. *Glob. Energy Monitor*. URL <https://globalenergymonitor.org/projects/global-coal-plant-tracker/> (accessed 7.6.23).
- Gobby, J., Temper, L., Burke, M., von Ellenrieder, N., 2021. Resistance as governance: transformative strategies forged on the frontlines of extractivism in Canada. *Extr. Ind. Soc.* <https://doi.org/10.1016/j.exis.2021.100919>.
- Gong, X., 2018. China power investment corporation in Myanmar. Securing the Belt and Road Initiative: Risk Assessment, Private Security and Special Insurances Along the New Wave of Chinese Outbound Investments. Springer, Singapore, pp. 121–146. [https://doi.org/10.1007/978-981-10-7116-4\\_7](https://doi.org/10.1007/978-981-10-7116-4_7).
- Großmann, K., Padmanabhan, M., von Braun, K., 2017. Contested development in Indonesia: rethinking ethnicity and gender in mining. *Austrian J. South-East Asian Stud.* 10, 11–28. <https://doi.org/10.14764/10.ASEAS-2017.1-2>.
- Hamdi, E., 2019. The Case for System Transformation in Indonesia - Time For a Full Electricity System Audit [WWW Document]. Institute for Energy Economics and Financial Analysis. URL [https://ieefa.org/wp-content/uploads/2019/11/IEEFA\\_The-Case-for-System-Transformation-in-Indonesia\\_November-2019.pdf](https://ieefa.org/wp-content/uploads/2019/11/IEEFA_The-Case-for-System-Transformation-in-Indonesia_November-2019.pdf) (accessed 4.11.23).
- Hanaček, K., Kröger, M., Scheidel, A., Rojas, F., Martinez-Alier, J., 2022. On thin ice – The Arctic commodity extraction frontier and environmental conflicts. *Ecol. Econ.* 191, 107247 <https://doi.org/10.1016/J.ECOLECON.2021.107247>.
- Hansen, T., Pollin, R., 2020. Economics and climate justice activism: assessing the financial impact of the fossil fuel divestment movement. *Rev. Soc. Econ.* 1–38. <https://doi.org/10.1080/00346764.2020.1785539>.
- He, Y., Tritto, A., 2022. Urban utopia or pipe dream? Examining Chinese-invested smart city development in Southeast Asia. *Third World Q.* 43, 2244–2268. <https://doi.org/10.1080/01436597.2022.2089648>.
- Healy, N., Stephens, J.C., Malin, S.A., 2019. Embodied energy injustices: unveiling and politicizing the transboundary harms of fossil fuel extractivism and fossil fuel supply chains. *Energy Res. Soc. Sci.* 48, 219–234. <https://doi.org/10.1016/J.ERSS.2018.09.016>.
- Hensengerth, O., 2017. Regionalism, identity, and hydropower dams: the Chinese-built lower Sesan 2 dam in Cambodia. *J. Curr. Chin. Aff.* 46, 85–118. <https://doi.org/10.1177/186810261704600304>.
- Hofman, I., Ho, P., 2012. China's 'Developmental outsourcing': a critical examination of Chinese global 'land grabs' discourse. *J. Peasant Stud.* 39, 1–48. <https://doi.org/10.1080/03066150.2011.653109>.
- Hsu, J.Y.J., Hildebrandt, T., Hasmath, R., 2016. 'Going Out' or staying in? The expansion of Chinese NGOs in Africa. *Develop. Policy Rev.*
- IEA, 2023. Global coal demand set to remain at record levels in 2023. URL <https://www.iea.org/news/global-coal-demand-set-to-remain-at-record-levels-in-2023> (accessed 12.8.23).
- Jakob, M., Flachslund, C., Christoph Steckel, J., Urpelainen, J., 2020. Actors, objectives, context: a framework of the political economy of energy and climate policy applied to India, Indonesia, and Vietnam. *Energy Res. Soc. Sci.* 70, 101775 <https://doi.org/10.1016/j.erss.2020.101775>.
- Kang, X., Liu, Y., Gao, W., Zhang, J., Li, S., Ren, X., Li, D., Zhang, K., 2021. Research on the risk warning about the investment & Construction of China's overseas coal-fired power projects-country-specific research on Indonesia [WWW Document]. URL <https://www.greenpeace.org.cn/wp-content/uploads/2021/06/coei-country-research-indonesia-en.pdf> (accessed 6.23.23).
- Klinger, J.M., 2018. Welcome to the hometown of rare Earths": 1980–2010. *Rare Earth Frontiers: From Terrestrial Subsoils to Lunar Landscapes*. Cornell University Press, pp. 103–136. <https://doi.org/10.1353/book.63614>.
- Klinger, J.M., Muldavin, J.S.S., 2019. New geographies of development: grounding China's global integration. *Territ. Politic. Gov.* 7, 1–21. <https://doi.org/10.1080/21622671.2018.1559757>.
- Kong, B., Gallagher, K.P., 2021. The new coal champion of the world: the political economy of Chinese overseas development finance for coal-fired power plants. *Energy Policy* 155. <https://doi.org/10.1016/j.enpol.2021.112334>.
- Lee, C.K., 2022. What is global China? [WWW Document]. *Global China Pulse*. URL <https://thepeoplesmap.net/globalchinapulse/what-is-global-china/> (accessed 1.15.23).
- Lee, C.K., 2017. Eventful Global China, in: *The Spector of Global China: Politics, Labor and Foreign Investment in Africa*. The University of Chicago Press, pp. 152–186.
- Li, X., Gallagher, K.P., 2022. Assessing the climate change exposure of foreign direct investment. *Nat. Commun.* 13 (1 13), 1–9. <https://doi.org/10.1038/s41467-022-28975-5>.
- Li, Z., Gallagher, K., Chen, X., Yuan, J., Mauzerall, D.L., 2022. Pushing out or pulling in? The determinants of Chinese energy finance in developing countries. *Energy Res. Soc. Sci.* 86, 102441 <https://doi.org/10.1016/j.erss.2021.102441>.
- Li, Z., Gallagher, K.P., Mauzerall, D.L., 2020. China's global power: estimating Chinese foreign direct investment in the electric power sector. *Energy Policy* 136, 111056. <https://doi.org/10.1016/j.enpol.2019.111056>.
- Lim, G., 2022. China-Japan rivalry and southeast Asian renewable energy development: who is winning what in Indonesia? *Asian Perspect.* 46, 105–132. <https://doi.org/10.1353/apr.2022.0004>.
- Liu, C., Hale, T., Urpelainen, J., 2022a. Explaining the energy mix in China's electricity projects under the belt and road initiative. *Env. Polit.* 1–23. <https://doi.org/10.1080/09644016.2022.2087355>.
- Liu, C., Hale, T., Urpelainen, J., 2022b. Supply and demand for clean power in the belt and road: comparing the political economy of Pakistan and Indonesia [WWW Document]. URL [https://sais-isep.org/wp-content/uploads/2022/01/Supply-and-Demand-for-Clean-Power-in-the-Belt-and-Road\\_ISEP-Report\\_Jan-2022.pdf](https://sais-isep.org/wp-content/uploads/2022/01/Supply-and-Demand-for-Clean-Power-in-the-Belt-and-Road_ISEP-Report_Jan-2022.pdf) (accessed 6.28.23).
- Lu, J., 2020. Grounding Chinese investment: encounters between Chinese capital and local land politics in Laos. *Globalizations* 18, 422–440. <https://doi.org/10.1080/14747731.2020.1796159>.
- Ma, J., Zadek, S., 2019. Decarbonizing the belt and road: a green finance roadmap [WWW Document]. URL [www.vivideconomics.com/publications/decarbonizing-the-belt-and-road-](http://www.vivideconomics.com/publications/decarbonizing-the-belt-and-road-) (accessed 4.3.20).
- Ma, X., Gallagher, K.P., 2021. Who funds overseas coal plants? The need for transparency and accountability [WWW Document]. *Glob. Develop. Policy Center*. URL <https://www.bu.edu/gdp/2021/07/07/who-funds-overseas-coal-plants-the-need-for-transparency-and-accountability/>.
- Martinez-Alier, J., 2023. Introduction: comparative political ecology – the EJAtlas, geographical and thematic perspectives, in: *land, Water, Air and Freedom*. Edward Elgar Publ. 1–25. <https://doi.org/10.4337/9781035312771.00008>.
- Martinez-Alier, J., 2021a. Circularity, entropy, ecological conflicts and LFFU. *Local Environ.* 1–26. <https://doi.org/10.1080/13549839.2021.1983795>.
- Martinez-Alier, J., 2021b. Mapping ecological distribution conflicts: the EJAtlas. *Extr. Ind. Soc.* 8, 100883 <https://doi.org/10.1016/J.EXIS.2021.02.003>.
- Martinez-Alier, J., 2002. The environmentalism of the poor: a study of ecological conflicts and valuation. Edward Elgar.
- Martinez-Alier, J., O'Connor, M., 1996. *Economic and ecological distribution conflicts*. In: Costanza, R., Bonilla, O.S., Martinez-Alier, J. (Eds.), *Getting Down to Earth: Practical Applications of Ecological Economics*. Island Press, Washington, DC.
- Ministry of Foreign Affairs of the PRC, 2021. Xi Jinping attends the general debate of the 76th session of the United Nations general assembly and delivers an important speech [WWW Document]. Ministry of Foreign Affairs of the People's Republic of China. URL [https://www.fmprc.gov.cn/mfa\\_eng/wjb\\_663304/zjjg\\_663340/gjs\\_665170/gjsxw\\_665172/202109/t0210923\\_9580159.html](https://www.fmprc.gov.cn/mfa_eng/wjb_663304/zjjg_663340/gjs_665170/gjsxw_665172/202109/t0210923_9580159.html) (accessed 6.25.23).
- Mori, A., 2020. Foreign actors, faster transitions? Co-evolution of complementarities, perspectives and sociotechnical systems in the case of Indonesia's electricity supply



- system. *Energy Res. Soc. Sci.* 69, 101594 <https://doi.org/10.1016/j.ERSS.2020.101594>.
- Nace, T., 2010. Climate hope on the front lines of the fight against coal. *Coalswarm*.
- Navas, G., D'alisa, G., Martínez-Alier, J., 2022. The role of working-class communities and the slow violence of toxic pollution in environmental health conflicts: a global perspective. *Glob. Environ. Change* 73. <https://doi.org/10.1016/j.gloenvcha.2022.102474>.
- Oakes, T., 2021. The Belt and Road as method: geopolitics, technopolitics and power through an infrastructure lens. *Asia Pac. Viewp.* 62, 281–285. <https://doi.org/10.1111/APV.12319>.
- Ohlendorf, N., Jakob, M., Steckel, J.C., 2022. The political economy of coal phase-out: exploring the actors, objectives, and contextual factors shaping policies in eight major coal countries. *Energy Res. Soc. Sci.* 90, 102590 <https://doi.org/10.1016/j.erss.2022.102590>.
- O'Leary, Z., 2017. *The Essential Guide to Doing Your Research Project*, Third edit. SAGE Publications Ltd, London.
- Oliveira, G., de, L.T., Murton, G., Rippa, A., Harlan, T., Yang, Y., 2020. China's Belt and Road Initiative: views from the ground. *Polit. Geogr.* 82, 102225 <https://doi.org/10.1016/j.polgeo.2020.102225>.
- Ordóñez, J.A., Jakob, M., Steckel, J.C., Fünfgeld, A., 2021. Coal, power and coal-powered politics in Indonesia. *Environ. Sci. Policy* 123, 1462–9011. <https://doi.org/10.1016/j.envsci.2021.05.007>.
- Pavličević, D., Talmacs, N., 2022. Answering the “China Question”: local responses to global China. In: Pavličević, D., Talmacs, N. (Eds.), *The China Question: Contestations and Adaptations*. Palgrave Macmillan, Singapore, pp. 1–20. [https://doi.org/10.1007/978-981-16-9105-8\\_1](https://doi.org/10.1007/978-981-16-9105-8_1).
- Pellegrini, L., Arsel, M., Orta-Martínez, M., Mena, C.F., Muñoz, G., 2021. Institutional mechanisms to keep unburnable fossil fuel reserves in the soil. *Energy Policy* 149. <https://doi.org/10.1016/j.enpol.2020.112029>.
- Piggot, G., 2018. The influence of social movements on policies that constrain fossil fuel supply. *Clim. Policy* 18, 942–954. <https://doi.org/10.1080/14693062.2017.1394255>.
- Pramono, A.H., Fuad, H.A.H., Haryanto, B., Indrawan, M., Khasanah, N., Manessa, M.D.M., Pratiwi, K., Sari, D.A., Siregar, R.S.E., Supriatna, J., Winarni, N.L., Gallagher, K.P., Ray, R., Simmons, B.A., 2021. Mitigating social-ecological risks from the surge in China's overseas investment: an Indonesian profile. *Discover Sustain.* 2 <https://doi.org/10.1007/s43621-021-00069-0>.
- PT PLN, 2021. RUPTL 2021–2030 [WWW Document]. URL <https://web.pln.co.id/static/uploads/2021/10/materi-diseminasi-2021-2030-publik.pdf>.
- Ren, P., Liu, C., Zhang, L., 2017. China's involvement in coal-fired power projects along the belt and road [WWW Document]. URL [http://www.geichina.org/\\_upload/file/report/China's\\_involvement\\_in\\_Coal-fired\\_Power\\_Projects\\_OBOR\\_EN.pdf](http://www.geichina.org/_upload/file/report/China's_involvement_in_Coal-fired_Power_Projects_OBOR_EN.pdf) (accessed 6.20.23).
- Rogelja, I., 2020. Concrete and coal: china's infrastructural assemblages in the Balkans. *Polit. Geogr.* 81, 102220 <https://doi.org/10.1016/j.polgeo.2020.102220>.
- Roy, B., 2021. Koyla Kahini. The political ecology of coal in India. ICTA-UAB.
- Roy, B., Schaffartzik, A., 2020. Talk renewables, walk coal: the paradox of India's energy transition. *Ecol. Econ.* 180 <https://doi.org/10.1016/j.ecolecon.2020.106871>.
- Sanz, T., Rodríguez-Labajos, B., 2021. Does artistic activism change anything? Strategic and transformative effects of arts in anti-coal struggles in Oakland. *CA. Geoforum* 122, 41–54. <https://doi.org/10.1016/j.geoforum.2021.03.010>.
- Scheidel, A., Del Bene, D., Liu, J., Navas, G., Mingorría, S., Demaria, F., Avila, S., Roy, B., Ertör, I., Temper, L., Martínez-Alier, J., 2020. Environmental conflicts and defenders: a global overview. *Glob. Environ. Change* 63, 102104. <https://doi.org/10.1016/j.gloenvcha.2020.102104>.
- Scheidel, A., Fernández-Llamazares, A., Bara, A.H., Del Bene, D., David-Chavez, D.M., Fanari, E., Garba, I., Hanaček, K., Liu, J., Martínez-Alier, J., Navas, G., Reyes-García, V., Roy, B., Temper, L., Thiri, M.A., Tran, D., Walter, M., Whyte, K.P., 2023. Global impacts of extractive and industrial development projects on Indigenous Peoples' lifeways, lands, and rights. *Sci. Adv.* 9 <https://doi.org/10.1126/sciadv.ade9557>.
- Scheidel, A., Temper, L., Demaria, F., Martínez-Alier, J., 2018. Ecological distribution conflicts as forces for sustainability: an overview and conceptual framework. *Sustain. Sci.* 13, 585–598. <https://doi.org/10.1007/s11625-017-0519-0>.
- Selje, T., 2022. Comparing the German exit of nuclear and coal: assessing historical pathways and energy phase-out dimensions. *Energy Res. Soc. Sci.* 94, 102883 <https://doi.org/10.1016/j.ERSS.2022.102883>.
- Shi, X., Yao, L., 2019. Prospect of China's energy investment in southeast Asia under the belt and road initiative: a sense of ownership perspective. *Energy Strat. Rev.* 25, 56–64. <https://doi.org/10.1016/j.esr.2019.100365>.
- Siciliano, G., Del Bene, D., Scheidel, A., Martínez-Alier, J., Liu, J., Urban, F., 2019. Environmental justice and Chinese dam-building in the global South. *Curr. Opin. Environ. Sustain.* 37, 20–27. <https://doi.org/10.1016/j.COSUST.2019.04.003>.
- Sidaway, J.D., Rowedder, S.C., Woon, C.Y., Lin, W., Pholsena, V., 2020. Politics and spaces of China's belt and road initiative - introduction: research agendas raised by the belt and road initiative. *Environ. Plann. C: Polit. Space* 38, 795–802. <https://doi.org/10.1177/2399654420911410>.
- Simmons, B.A., Butt, N., O'Hara, C.C., Ray, R., Ma, Y., Gallagher, K.P., 2022. China's global development finance poses heterogeneous risks to coastal and marine socio-ecological systems. *One Earth* 5, 1377–1393. <https://doi.org/10.1016/j.oneear.2022.11.002>.
- Sovacool, B.K., Hess, D.J., Cantoni, R., Lee, D., Claire Brisbois, M., Jakob Walnum, H., Freng Dale, R., Johnsen Rygg, B., Korsnes, M., Goswami, A., Kedia, S., Goel, S., 2022. Conflicted transitions: exploring the actors, tactics, and outcomes of social opposition against energy infrastructure. *Glob. Environ. Change* 73. <https://doi.org/10.1016/j.gloenvcha.2022.102473>.
- Springer, C.H., 2022. China's withdrawal from overseas coal in context. *World Dev. Perspect.* 25, 100397 <https://doi.org/10.1016/j.WDP.2022.100397>.
- Springer, C.H., Evans, S., Teng, F., 2021. An empirical analysis of the environmental performance of China's overseas coal plants. *Environ. Res. Lett.* 16, 054062 <https://doi.org/10.1088/1748-9326/ABF287>.
- Springer, C.H., Shi, D., 2020. China, Japan, and Korea: “Cleaner” than the worst coal plants, but nowhere near “Clean” energy [WWW Document]. *New Security Beat*. URL <https://www.newsecuritybeat.org/2020/12/china-japan-korea-cleaner-worst-coal-plants-clean-energy/> (accessed 6.11.23).
- Sternberg, T., 2020. Conflict and contestation in Kyrgyz mining infrastructure. *Extr. Ind. Soc.* 7, 1392–1400. <https://doi.org/10.1016/j.EXIS.2020.10.016>.
- Suarez, I., Wang, T.X., 2022. 1-Year later: china's ban on overseas coal power projects and its global climate impacts [WWW Document]. URL [https://energyandcleanair.org/wp/wp-content/uploads/2022/09/ChinaBan-Report-FINAL\\_22Sept22.pdf](https://energyandcleanair.org/wp/wp-content/uploads/2022/09/ChinaBan-Report-FINAL_22Sept22.pdf) (accessed 6.26.23).
- Sulaiman, S., Widiyanto, S., 2022. Draft Indonesia renewables bill proposes coal-based fuels as “new energy” [WWW Document]. *Reuters*. URL <https://www.reuters.com/business/energy/indonesia-lawmakers-propose-coal-based-fuels-new-energy-incen-tives-renewables-2022-06-08/> (accessed 12.12.23).
- Teddle, C., Yu, F., 2007. Mixed methods sampling: a typology with examples. *J. Mix Methods Res.* 1, 77–100. <https://doi.org/10.1177/2345678906292430>.
- Temper, L., Avila, S., Bene, D., Del, Gobby, J., Kosoy, N., Billon, P., Le, Martínez-Alier, J., Perkins, P., Roy, B., Scheidel, A., Walter, M., 2020. Movements shaping climate futures: a systematic mapping of protests against fossil fuel and low-carbon energy projects. *Environ. Res. Lett.* 15 <https://doi.org/10.1088/1748-9326/abc197>.
- Temper, L., del Bene, D., Martínez-Alier, J., 2015. Mapping the frontiers and front lines of global environmental justice: the EJAtlas. *J. Polit. Ecol.* 22 <https://doi.org/10.2458/v22i1.21108>.
- Temper, L., Federico, Demaria, Scheidel, A., del Bene, D., Martínez-Alier, J., 2018. The Global Environmental Justice Atlas (EJAtlas): ecological distribution conflicts as forces for sustainability. *Sustain. Sci.* 13, 573–584. <https://doi.org/10.1007/s11625-018-0563-4>.
- Tetreault, D., 2022. Two sides of the same coin: increasing material extraction rates and social environmental conflicts in Mexico. *Environ. Dev. Sustain.* 1–21. <https://doi.org/10.1007/S10668-021-02025-4/FIGURES/4>.
- Thiri, M.A., Villamayor-Tomás, S., Scheidel, A., Demaria, F., 2022. How social movements contribute to staying within the global carbon budget: evidence from a qualitative meta-analysis of case studies. *Ecol. Econ.* 195 <https://doi.org/10.1016/j.ecolecon.2022.107356>.
- Toumbourou, T., Muhdar, M., Werner, T., Bebbington, A., 2020. Political ecologies of the post-mining landscape: activism, resistance, and legal struggles over Kalimantan's coal mines. *Energy Res. Soc. Sci.* 65, 101476 <https://doi.org/10.1016/j.erss.2020.101476>.
- Tran, D., Hanaček, K., 2023. A global analysis of violence against women defenders in environmental conflicts. *Nat. Sustain.* 1–9. <https://doi.org/10.1038/s41893-023-01126-4>.
- Tritto, A., 2023. How Indonesia used chinese industrial investments to turn nickel into the new gold [WWW Document]. *Carnegie Endowment for International Peace*. URL [https://carnegieendowment.org/files/Tritto\\_Indonesia\\_Nickel.pdf](https://carnegieendowment.org/files/Tritto_Indonesia_Nickel.pdf) (accessed 5.9.23).
- Tritto, A., 2021a. China's belt and road initiative: from perceptions to realities in Indonesia's coal power sector. *Energy Strat. Rev.* 34 <https://doi.org/10.1016/j.esr.2021.100624>.
- Tritto, A., 2021b. Coal power plants in Indonesia: ownership, investments, and impacts. *Harvard Dataverse*. <https://doi.org/10.7910/DVN/ETNOQA>.
- Tritto, A., Camba, A., 2022. State-facilitated industrial parks in the belt and road initiative: towards a framework for understanding the localization of the Chinese development model. *World Dev. Perspect.* 28, 100465 <https://doi.org/10.1016/j.WDP.2022.100465>.
- Tsing, A.L., 2005. *They communicate only in sign language. Friction: An Ethnography of Global Connection*. Princeton University Press, Princeton and Oxford, p. 51.
- World Bank, 2023. GDP growth - Indonesia [WWW Document]. *World Bank*. URL <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=ID> (accessed 6.26.23).
- Wu, Y., Chen, C., Hu, C., 2021. Does the belt and Road initiative increase the carbon emission intensity of participating countries? *China World Econ.* 29, 1–25. <https://doi.org/10.1111/CWE.12374>.
- Yin, R.K., 2014. *Case Study research: Design and methods*, Fifth edit. SAGE Publications Inc., London.
- Zhang, N., Liu, Z., Zheng, X., Xue, J., 2017. Carbon footprint of China's belt and road. *Science* 357, 1107. <https://doi.org/10.1126/SCIENCE.AAO6621>, 1979.