Background

Science has demonstrated the detrimental effects arising from burning coal to produce energy. Unquestionably, coal-fired power plants (PLTU) activities produce carbon emissions that trigger global warming and lead to climate change. Coal burning is responsible for 46% of carbon dioxide emissions worldwide and accounts for 72% of total greenhouse gas (GHG) emissions from the electricity sector (Endcoal.org, 2022). Therefore, numerous PLTUs are opposed and abandoned.

The PLTU construction has often been criticized for producing carbon emissions and particulate matter. However, the detrimental consequences of environmental and social changes around the PLTU project sites are rarely spotlighted. PLTU project sites are frequently built on cultivated land and productive marine space managed by the community. As a result, many residents, particularly those who rely on agricultural and marine products, have lost their livelihoods and suffered losses.

With its large coal reserves, Indonesia aims to maximize the PLTU operation sourcing from coal to meet its energy needs. The Government of Indonesia believes that it is necessary to build more PLTUs by involving the private sector. The construction of more PLTUs becomes a chance for domestic and international banking institutions to provide funding and investment.

Several PLTUs built in Indonesia by the private sector include PLTU Cirebon Phase 1 (1x660 MW) and PLTU Cirebon Phase 2 (1x1000 MW) in West Java. PLTU Cirebon Phase 2 is an expansion of the existing power plant and is operated by PT Cirebon Energi Prasarana. From the aspect of project funding, the two PLTUs have received loans from several foreign banks. One of them is ING Bank from the Netherlands. ING Bank has declared its commitment to no longer finance coal-related projects[1], but in practice, it indicates otherwise. Other foreign banks from Japan and South Korea have also financed the project, such as BIC Japan; Export-Import Bank of Korea (KEXIM); The Bank of Tokyo Mitsubishi UFJ, Ltd; Mizuho; and Sumitomo Mitsui Banking Cooperation. These banks have violated international norms, such as the Equator Principles, IFC Performance Standards, the UN Global Compact, and the OECD Guidelines for Multinational Enterprises.

Figure 1. Before and after the construction of PLTU Cirebon Phase 2

	
Photo taken in 2017	Photo taken in 2021

[1] https://www.banktrack.org/article/ing_becomes_latest_bank_to_stop_finance_for_new_coal

The PLTU Cirebon 2 construction, which adjoins PLTU Cirebon 1 (the existing power plant), has confiscated productive land managed by residents. Moreover, PLTU Cirebon 2 has also confiscated marine space handled by fishers. As a result, the sovereignty of fishing areas turns out to be more limited and contributes a great potential to increase environmental and social adverse impacts.

The PLTU Cirebon 2 project has contributed a detrimental impact since the pre-construction stage, that is, during land acquisition. Many parties desired to take advantage of land acquisition unilaterally, resulting in social issues. Problems increased as the construction process progressed. The compensation costs for the construction impacts provided by the project contractor to the residents were taken unilaterally by the irresponsible parties. Thus, this situation led to a horizontal conflict among residents. Adverse environmental and social impacts have been expected to occur when PLTU Cirebon 2 operates. This fact will exacerbate the environmental and social conditions of those around the power plant.

This factsheet summarizes and describes the environmental, social, and economic impacts of PLTU Cirebon Phase 2 (1x1000 MW). The impacts encountered by the community are described in this factsheet, starting from the pre-construction phase to the finalization phase.

The decreased income of salt farmers and fishers

Figure 2. Green Mussel Farmers

The construction of PLTU Cirebon 2, which has converted an area of 195 hectares, has threatened the livelihoods of fish and salt farmers located in the Kandawaru block, Kanci Wetan Village. In fact, the villagers' only jobs and abilities are salt production and fish farming. The residents usually produce salt during the dry season, while fish farming is generally carried out during the rainy season. Accordingly, around 237 fish farm workers and 222 laborers have lost their jobs. Farmers had the same impact since their income dropped dramatically as a result of the land conversion. However, until this factsheet was compiled, residents did not receive any compensation or recovery program from the PLTU.

Furthermore, the construction of PLTU Cirebon 2 resulted in a narrower fishing area and increased operational costs for fishers. This fact was due to a jetty construction that juts out into the sea for up to 3 km, obstructing

fishers' access. Thus, fishers had to cover longer distances by passing the end of the jetty. Before the jetty was built, fishers only spent 3-4 liters of fuel for small boats. However, after the jetty construction, the amount of fuel required had increased to 5 to 6 liters, and even 10 liters when the waves were considered huge. The sale of the marine fisheries catches frequently falls short of covering the operational costs of fishing.

The increased burden of women fishers in supporting their family

On the outskirt of Kanci Kulon Village, women fishers who live between PLTU Cirebon 1 and 2 also encounter a similar problem. They are women fishers seeking marine products in shallow waters. They don't own a boat and only utilize old inner tubes or styrofoam boxes as aids. They fish with nets and collect shells in the sand by fingering with their hands. The coastal fishers' profession is mainly occupied by women. Most of them are elderly.

Women Coastal Fishers

The PLTUs existence clearly affects their livelihoods. There were many marine products in shallow sea waters at that site before the PLTU was constructed, and it was easily accessible since it was close to the fishers' residences. However, everything has changed since the PLTU was constructed. Marine catches have decreased drastically; sometimes, even zero catch. This condition forces women fishers to move to other sites far from their houses, incurring additional transportation costs. The incurred transportation costs have reduced their income from the fish sale. In fact, they occasionally lose money since they don't get the catch at all.

When PLTU Cirebon 2 was constructed, the coastal fishers have been no longer caught marine products near the Company's area. They believed that PLTU Cirebon 2 would have a detrimental impact as PLTU Cirebon 1. Therefore, they moved to another area with high marine products.

Marine pollution due to the potential of thermal waste

In addition to the conversion of limited fishing land and area, seawater pollution contributes to fishers' declining catches. The interview results suggested that several fishers testified that the liquid waste was discharged into the sea through pipes belonging to the coal-fired power plant. The coal-fired power plant intentionally dumped the thermal waste into the sea. Consequently, it worsened the quality of seawater and

reduced marine fisheries catches. In addition, the fishers also caught coal spilled from the barges of the coal-fired power plant in their nets. Green mussel farmers also conveyed the same concern.

Seawater pollution would potentially be exacerbated when PLTU Cirebon 2 starts operating. The following seawater quality parameters have identified this assumption:

Table 1 Water Pollution Parameters by PLTU Cirebon 2 and PLTU Cirebon 1

Parameters	The 2015 Environmental Impact Analysis (AMDAL) of PLTU Cirebon 2*	The 2021 PLTU Cirebon 1 Second Semester Report
pH	8.03	8.42
Total ammonia (N-NH3)	<0.02	0.217
PCB	<0.00001	<0.002
Mercury (Hg)	<0.00005	<0.001
Lead (Pb)	<0.001	<0.003
Zinc (Zn)	<0.005	0.014
Nickel (Ni)	<0.001	<0.003

* The Environmental Impact Analysis (AMDAL) of PLTU Cirebon 2 and the Second Semester Report of PLTU Cirebon 1

Air pollution due to the potential release of carbon emissions and particulate matters

Pollutant emissions and particulates matters produced by PLTU Cirebon 1 provide an overview of the potential impact of PLTU Cirebon 2 on decreasing air quality. According to the analysis results, the amount of CO_2 emissions produced by PLTU Cirebon 1 reached 2.6 Mt/year[2]. Besides, the exhaust gas produced by PLTU Cirebon 1 chimney contained several particulate matters, including SO2, NO2, PM 10, and PM 2.5. These particulate matters are formed from the coal burning process, immediately mixed with the air in the process, and can be potentially inhaled. Continuous inhalation of these particulate matters can result in severe health problems.

According to the analysis results, the quality standards of the exhaust emissions produced by PLTU Cirebon 1 had exceeded the quality standards set by WHO. The WHO quality standards were taken as a reference since they set higher standards than the current government regulations. While the Indonesian Government currently applies the Air Pollutant Standard Index (*Indeks Standar Pencemar Udara* or ISPU), WHO employs a different pollutant standards index. The unit of measurement involved at PLTU Cirebon 1 is Mg/Nm³, as stipulated in the weak regulatory system of the Government of Indonesia. Meanwhile, the measurement unit

[2] https://www.carbonbrief.org/mapped-worlds-coal-power-plants

applied by WHO is µg/m³. Furthermore, the Government of Indonesia regulations do not specifically regulate PM 10 and PM 2.5, yet it merely applies the term particulate matter.

Table 2 Measurement results of particulate matters produced by PLTU Cirebon 1 from June to December 2021

Month	Measurement Results for SO_2 Mg/Nm³	Measurement Results for NO_2 Mg/Nm³	Particulate Mg/Nm³	Mercury Mg/Nm³	Descriptions
June	463.0	371.2	45.8	-	● SO_2 Quality Standard (WHO) = 40 g/m³ ● NO_2 Quality Standard (WHO) = 25 g/m³
July	635.8	377.9	37.9	-	
August	265.9	380.3	37.2	-	
September	256.8	359.7	45.4	0.0055	
October	221.3	371.5	26.5	0.007	
November	249.8	355.3	34.4	0.015	
December	-	-		-	

* The 2021 Second Semester Report of PLTU Cirebon 1

Table 2 indicates that the total emission produced by PLTU Cirebon 1 had exceeded the quality standards set by WHO. It suggested that the exhaust emissions of PLTU Cirebon 1 had polluted air quality. The PLTU Cirebon 2 operation will potentially exacerbate this condition.

Threats to biodiversity

Changes to land conditions can reduce bird habitat in the area. According to the 2016 report results, approximately 55 bird species were observed to live in the area before PLTU Cirebon 2 was constructed. This number significantly decreased to approximately 25 to 28 species after the PLTU Cirebon 2 was constructed in 2017.[3]

Social conflicts and intimidation of freedom of expression

Social conflicts due to the construction of PLTU Cirebon 2 arose from the land acquisition stage. These conflicts occurred due to overlapping land ownership. For some local residents, the Cirebon 2 PLTU project brought benefits in the form of compensation for their acquired land. As a result, they set off mutual claims against each other as the rightful owners of the land.

In addition, the PLTU Cirebon 2 project also led to horizontal conflicts between residents. Conflicts ensued between those who refused and those who supported the project. According to their statement, they often encountered intimidation from thugs paid by the PLTU.

In 2016, five coastal fishers from Kanci Kulon Village sued PLTU Cirebon 2 environmental permit. The lawsuit was based on the potential negative impact the PLTU posed to the environment. The five coastal fishers represented other fishers who also refused the construction of PLTU Cirebon 2. Unfortunately, some of them received subtle threats in the process. They were persuaded to drop the lawsuit in exchange for a sum of money. Otherwise, they would be sued back. According to the testimony of some residents as the lawsuit

[3] The 2021 Second Semester Report of PLTU Cirebon 1

plaintiffs, the threats and persuasion perpetrators were the PLTU officers. The five former plaintiffs were no longer willing to testify or be questioned because they fear of being threatened again. In addition to the threats, a coastal fisher was also spied on.

In 2017, several Kanci Kulon Village residents finally sued PLTU Cirebon 2 for the second time. During the trial process, a resident was followed by a stranger trying to find out the whereabouts of the house of one of the residents. He knew this information from one of his neighbors, who felt suspicious because such action was considered unusual. Besides, he also found foreigners who often spied on him from outside his workplace.

Corruption in the PLTU Cirebon 2 project

Coal-fired power plants are considered to produce dirty energy due to posing negative impacts on the environment and society. This fact is exacerbated by the dirty game to expedite the construction project to allow sooner operation. The dirty practice in this discussion refers to corruption.

The dirty game of corruption occurred during the construction of the PLTU Cirebon 2 (1x1000 MW) project. In 2019, the Corruption Eradication Commission (KPK) revealed bribery allegations against the General Manager of Hyundai Engineering and Construction (HDEC) as the PLTU Cirebon 2 project contractor.[4] According to KPK, the bribes were given to the Cirebon Regent on duty.[5] In addition, KPK also revealed the involvement of the President Director and the Director of Corporate Affairs of PT Cirebon Energi Prasarana (PT CEPR) in the bribery case.[6] PT CEPR was the designated Company to operate PLTU Cirebon 2.

KPK continues to investigate the alleged bribery case of Hyundai Engineering & Construction executives involving those of PT Cirebon Energi Prasarana.

Based on the collected evidence, it is appropriate to conduct a review process and terminate the Cirebon 2 PLTU project. The PLTU Cirebon 2 project will exacerbate the negative consequences of PLTU Cirebon 1. The Company has not provided any constructive compensation or contribution to the surrounding community to this date. Various parties, including the Company's investors, should be involved in planning the recovery process for the negative impacts the Company poses to the community.

[4] https://en.tansajp.org/investigativejournal/1600/

[5] https://www.koreatimes.co.kr/www/tech/2019/05/693_268175.html

[6] https://voi.id/en/news/37934/the-corruption-eradication-commission-summons-former-corporate-affairs-of-pt-cirebon-energi-prasarana-regarding-cirebon-regent-s-bribery-case