



~~DOUBLE~~ ~~STANDARD~~ 이중기준

A DEADLY DOUBLE STANDARD

South Korea's Financing of Highly
Polluting Overseas Coal Plants
Endangers Public Health

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Executive summary

South Korea is the third biggest public investor in overseas coal-fired power plant projects among the G20 countries through its public finance agencies (PFAs); Korea Trade Insurance Corporation (K-SURE), Export-Import Bank of Korea (KEXIM) and Korea Development Bank (KDB). Coal is the single worst contributor to global climate change, responsible for almost half the world's carbon dioxide emissions.^{1,2} In addition, burning coal releases high amounts of dangerous air pollutants that are known to be responsible for premature deaths by causing and worsening a range of severe diseases.^{3,4} Most overseas coal power projects financed by South Korea employ air pollution emission control technologies far inferior to those required at home. In effect, South Korea is operating a deadly double standard: Financing coal-fired power plants overseas that create air pollution at levels that would not be legal in South Korea. **This study evaluated ten such plants, estimating that 1,600 to 5,000 premature deaths will be caused each year, amounting to between 47,000 to 151,000 total premature deaths over the typical 30-year operation period of such power plants.**

The double standard in emission limits for dangerous air pollutants allows South Korean-financed coal power plants overseas to emit up to 18.6 times more nitrogen oxides (NO_x), 11.5 times more sulfur dioxide (SO₂) and 33 times more dust pollution than those built in South Korea. This report reveals the deadly consequences of that double standard, in terms of premature deaths projected to be caused by air pollution based on modeling, and evaluates how many of those anticipated premature deaths could be avoided if the projects funded

(either fully or jointly) by South Korea overseas applied the same emission limits as the new coal power plants in South Korea.

The impact of South Korea's double standard in emission limits is evaluated by comparing the number of premature deaths caused in two different scenarios:

- **Scenario 1:** Predicted coal-fired power plant emissions based on the application of current local emission limits and actual or projected plant utilization.
- **Scenario 2:** Predicted coal-fired power plant emissions if South Korean emission standards for new coal power plants (installed since January 2015) were applied.

In South Korea, public concern about air pollution and strong demands for clean air mean that the emission standards set in South Korea's Clean Air Conservation Act (2019) for new power plant projects are strict.⁵ We carried out detailed atmospheric modeling and health impact assessments for 10 coal power plants that are located near populated areas and were financed by South Korean PFAs overseas during the period of January 2013 to August 2019. These coal power plants are located in Bangladesh, Indonesia and Vietnam.

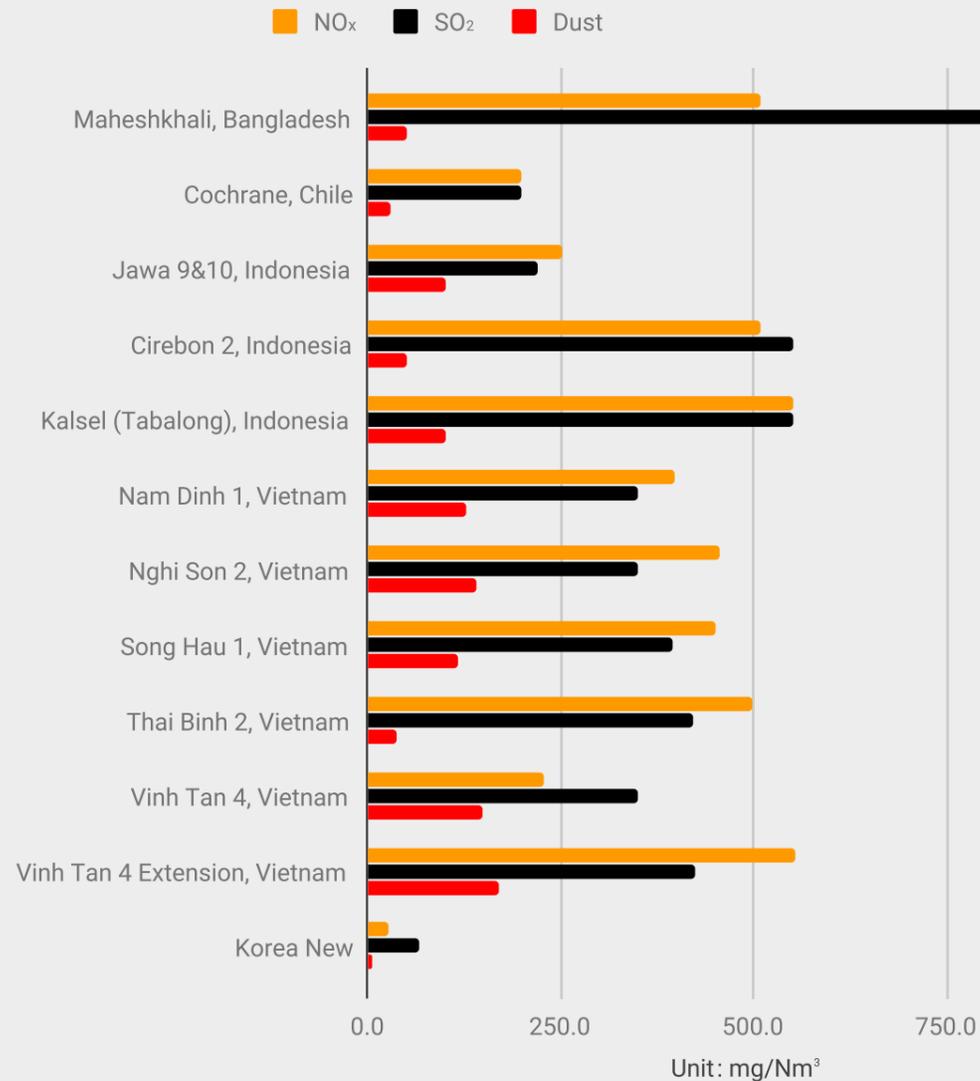
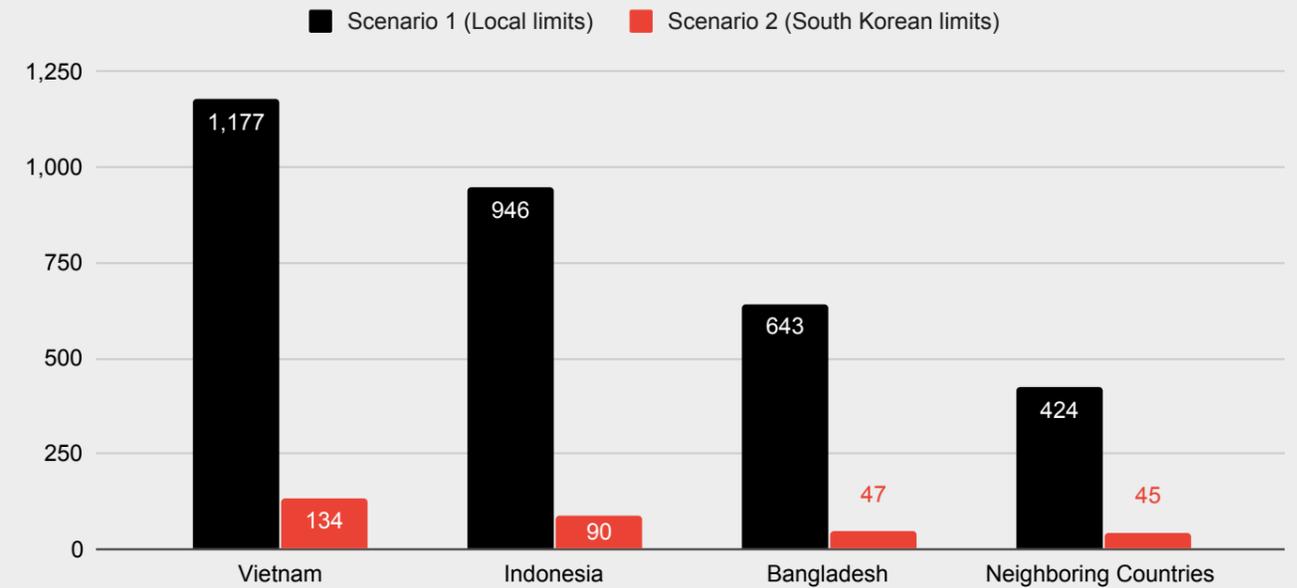


Figure: Emission standards for air pollutants NO_x, SO₂ and Dust for South Korean coal power plants⁶ compared to emission limits of South Korean PFA-financed coal power plants in other countries⁷.

Our results indicate that if the South Korean emission standards were applied – not just in South Korea but to all coal power plants financed by South Korean PFAs outside of South Korea – an estimated 1,400 to 4,500 premature deaths would be avoided each year. Over the typical 30-year operation period of such power plants, this amounts to between 42,000 and 136,000 avoidable premature deaths projected to result from the 10 coal power plants financed by South Korean PFAs and operating with poor emission limits.

Most of the premature deaths are projected to occur in the host countries themselves. These countries have existing dangerous air pollution problems separate to the pollution that would be caused by the modeled coal power plants. South Korean investments in coal power will only make it harder for these countries to reduce air pollution and meet public health standards.

Air pollution generated by the modeled power plants was shown to disperse across national borders. As a result, 13% of the projected premature deaths occur in seven neighboring countries which are otherwise uninvolved in the power plant projects.



Health impacts by South Korea funded coal plants in the hosting/neighboring countries

Figure: Projected number of premature deaths per year in the hosting and neighboring countries due to South Korean PFA-financed coal power plants operated under local emission limits (black) vs. operated in line with South Korean emission standards (red). Uncertainty range is about 50% (exact values are shown in the result section).

All countries need to shift immediately away from coal and toward renewable energy sources to avoid catastrophic climate change and prevent the health impacts of coal emissions, including premature death. Countries must work together towards a carbon-neutral economy, and South Korea should play a leadership role in doing so. In contrast to the unethical and deadly double standard that South Korea is applying now to coal power projects – which is linked to illnesses, premature deaths and climate change – South Korea’s PFAs should instead support renewable energy solutions. Renewable energy and energy efficiency are getting cheaper and competitive⁸ than building new coal-fired power plants, and rather than exacerbating air pollution and climate change, they provide a solution.

The South Korean Government has announced an energy transition plan with a target for 20% renewable energy by 2030, together with a nuclear phase out plan and an end to permits for new coal projects. In addition, the Government is renewing regulations on air pollution emissions of coal plants every year. Despite this, South Korea's public finance agencies (PFAs) still invest heavily in coal-fired power plants in other countries.

The South Korean Government must take urgent action to end this financing and ensure its PFAs move to fund renewable solutions rather than coal.

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Figure: Locations of South Korean PFA-financed coal power projects overseas, from January 2013 to August 2019.

Additionally, the South Korean Government must immediately stop its PFAs from investing in overseas projects in the power, industrial and other sectors if their emission limits do not meet the standards applied in South Korea. By ending this deadly double standard, hundreds of thousands of lives could be saved.

Additionally, the South Korean Government must immediately stop its PFAs from investing in overseas projects in the power, industrial and other sectors if their emission limits do not meet the standards applied in South Korea. By ending this deadly double standard, hundreds of thousands of lives could be saved. At the same time, the governments in the host countries of these coal projects should protect their citizens' right to a safe and healthy environment, by significantly strengthening their emission limits for existing coal power plants, while undertaking energy transition from coal to renewable energy in their countries. This change in policies and investments must be accelerated now, for human and environmental health, and to safeguard the future of our planet.



Children play by the beach near a coal power plant in Jepara, Central Java, oblivious to the possible threats to their health © Kemal Jufri / Greenpeace

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- 8) Bloomberg New Energy Finance (2019), New energy outlook 2019 <https://about.bnef.com/new-energy-outlook/#toc-download> (accessed 29 Oct 2019)