

The Dirty Truth About “Clean” Gas

Global Energy Monitor

Warda Ajaz, Project Manager, Asia Gas Tracker

The realities of the climate crisis are undeniable in Bangladesh. In June, the northeastern part of the country experienced its most severe monsoon rains in 122 years. Looking ahead, the country is predicted to lose 11% of its land mass to flooding by the middle of this century.

What can be done to accelerate the global transition to clean energy, and limit some of the worst impacts of climate change? In Bangladesh and other Asian countries, the gas industry has generated support for new gas plants, gas pipelines, and LNG terminals as solutions to the climate crisis by claiming that gas is somehow “clean.” In Bangladesh, there is over US \$16 billion of new gas infrastructure in development, including power plants (US \$12.3 billion), pipelines (US \$2.2 billion), and LNG terminals (US \$2.1 billion).¹ This is despite the fact that the country is already suffering due to overcapacity in the power system and the existing thermal power plants operated at only 40 percent of their capacity during 2019-20.² But consider the facts. Gas is just as bad and in some ways worse than other fossil fuels.

¹ Global Energy Monitor, Asia’s Gas Lock-in, 2021: https://globalenergymonitor.org/wp-content/uploads/2021/10/GEM_AsiaGas2021_FINAL.pdf

² IEEFA: Bangladesh’s power system overcapacity problem is getting worse. Published January 20, 2021: <https://ieefa.org/articles/ieefa-bangladeshs-power-system-overcapacity-problem-getting-worse>

Fact one: methane emissions from burning gas are much worse for the climate than was understood ten or fifteen years ago, when the industry’s “clean” myth was taking hold. Gas is composed of 70-90 percent methane (CH₄)³, a greenhouse gas which we now know is 28 times more potent than CO₂ over a 100-year period.⁴

Fact two: greenhouse gas emissions from burning liquefied natural gas (LNG) for power make up only 55 to 66 percent of the total life-cycle emissions of LNG. The remainder are produced by leakage and inefficiencies that occur during exploration and mining (16-34 percent), refinement and liquefaction (6-10 percent), transportation (2-11 percent), and storage and regasification (1-3 percent). Unlike solid (e.g. coal) or liquid (e.g. oil) fuel, gaseous fuels are hard to fully capture during the production process, leading to fugitive emissions. Additionally, methane leaks from pipelines have been underestimated and occur regularly.

³ Should it be called “natural gas” or “methane”?, National Energy Technology Laboratory (NETL) (2020): <https://climatecommunication.yale.edu/publications/should-it-be-called-natural-gas-or-methane/#:~:text=Natural%20gas%20is%20composed%20of,major%20contributor%20to%20global%20warming>.

⁴ Fueling the Climate Crisis: South Korea’s Financing of Oil and Gas, Solutions For Our Climate (2021): https://21220177.fs1.hubspotusercontent-na1.net/hubfs/21220177/%5BENG%5DFueling%20the%20Climate%20Crisis_South%20Korea_s%20Public%20Financing%20for%20Oil%20and%20Gas.pdf

Fact three: the very notion that gas is a transition fuel, a narrative pushed by industry, further causes indirect harm in the long run, as it locks countries into long term contracts and impedes the adoption of renewable energy technologies, even in cases where they have become economically competitive.⁵ For example, in Asia, there is over 300 GW of gas fired capacity in development.⁶ These additional plants will also require additional LNG contracts, which will lock Asian countries into buying LNG for the long term, leaving fewer resources to invest in renewables, despite the fact that renewables may be cheaper. Moreover, many of these planned gas power plants are coal-to-gas conversions, which are often described as climate-friendly improvements. However, research from the National Energy Technology Laboratory (NETL) illustrates that coal to LNG plants do not show considerable reduction in greenhouse gasses. A gas fired power plant running on LNG produced in the United States and transported to Asia produces 78 percent of the greenhouse gasses that would be emitted by a coal power plant.⁷ In fact, while coal-to-gas switching reduces CO2 emissions, a study by Environmental Defense Fund (EDF)

⁵ Gürsan & Gooyert, The systemic impact of a transition fuel: Does natural gas help or hinder the energy transition?, Renewable and Sustainable Energy Reviews (2021):

<https://www.sciencedirect.com/science/article/pii/S1364032120308364>

⁶ Global Energy Monitor, Global Gas Plant Tracker, July 2022:

<https://globalenergymonitor.org/projects/global-gas-plant-tracker/>

⁷ Fueling the Climate Crisis: South Korea's Financing of Oil and Gas, Solutions For Our Climate (2021):

https://21220177.fs1.hubspotusercontent-na1.net/hubfs/21220177/%5BENG%5DFueling%20the%20Climate%20Crisis_South%20Korea_s%20Public%20Financing%20for%20Oil%20and%20Gas.pdf

determined that methane leaks negate much of that gain.⁸

Fact four: the environmental and health impacts faced by communities in the vicinity of gas power plants are also significant, as the combustion process releases hazardous pollutants, including ammonia (NH3), NOx and PM2.5. These pollutants are known to cause premature deaths and respiratory illnesses including lung cancer.⁹ Solutions for Our Climate (SFOC) estimated that, under the current policy scenario, gas power generation in South Korea will cause up to 859 premature deaths per year and 23,200 premature deaths until 2064.¹⁰

To put the case against gas another way, here is a riddle.

What kind of gas plant produces zero pollution?

Answer: a gas plant that hasn't been built.

This was the conclusion of the International Energy Agency (IEA) in May 2022 when it warned that, in order for the world to meet its 2050 climate goals, no new oil or gas projects can be

⁸ Methane Leaks Erase Some of the Climate Benefits of Natural Gas, Scientific American (2020):

<https://www.scientificamerican.com/article/methane-leaks-erase-some-of-the-climate-benefits-of-natural-gas/>

⁹ Negative impacts of burning natural gas and biomass have surpassed coal generation in many states".

C-CHANGE | Harvard T.H. Chan School of Public Health. 2021-05-05. Retrieved 2022-06-17:

<https://www.hsph.harvard.edu/c-change/news/gas-biomass/>

¹⁰ Bridge to Death: Air Quality And Health Impacts of Fossil Gas Power, Solutions for Our Climate (SFOC) (2021):

<https://energyandcleanair.org/publication/bridge-to-death-air-quality-and-health-impacts-of-fossil-gas-power/#:~:text=Under%20the%20Current%20Policy%20scenario,number%20of%205%2C360%20until%202035>

sanctioned. In scenarios limiting warming to 1.5 degrees Celsius with no or limited overshoot, gas usage must decline 21 percent to 61 percent from 2020 levels through 2050.¹¹ The good news is that the IEA expects the demand for gas to decrease year-on-year (y/y) in 2022, with 60 percent more reduction in demand growth through 2025 than in the preceding five-year period.¹² LNG imports in Asia have already dropped more than 6 percent in the first seven months of 2022.¹³ This decline is mainly due to escalating gas prices and tighter global gas supplies as a result of Europe's rush to secure LNG in an effort to reduce dependence on Russian pipeline imports.

This moment presents an excellent opportunity to explore alternative energy sources and direct investment toward renewable energy technologies that could lead to long term energy independence. Recently, the Government of Bangladesh canceled the planned 3,600 megawatt Payra power plant as well as an accompanying LNG import terminal, citing extraordinarily high global LNG prices.¹⁴ Further steps in this direction can lead to positive outcomes in terms of climate change mitigation. Instead of moving toward additional gas build-out and unnecessarily switching to a so-called

¹¹ IPCC, 2022: *Climate Change 2022: Mitigation of Climate Change*. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change:

https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_FinalDraft_FullReport.pdf

¹² The economic case for LNG in Asia is crumbling, IEEFA (2022):

<https://ieefa.org/resources/economic-case-lng-asia-crumbling>

¹³ The economic case for LNG in Asia is crumbling, IEEFA (2022):

<https://ieefa.org/resources/economic-case-lng-asia-crumbling>

¹⁴ Prothomalo, Govt backtracks from LNG-fired power plant, 2022:

<https://en.prothomalo.com/bangladesh/ptkzj7h291>

transition fuel, the smarter plan would be to phase out all fossil fuels and move to utility-scale renewables – a solution that makes economic sense, protects community health, and helps fight climate change.

Background on Global Energy Monitor

Global Energy Monitor is a nonprofit research organization developing information on energy projects worldwide. Through its Global Solar Power Tracker and Global Wind Power Tracker projects, Global Energy Monitor provides annual updates on wind and solar powered facilities. Global Energy Monitor data is used by the International Energy Agency (IEA), the OECD Environment Directorate, UN Environment Programme, U.S. Treasury Department, and World Bank.

Media Contact

Warda Ajaz

Project Manager, Asia Gas Tracker

warda.ajaz@globalenergymonitor.org