POWERLINE NEWS

Western Declines in Coal use are being Overwhelmed by Growth in Asia

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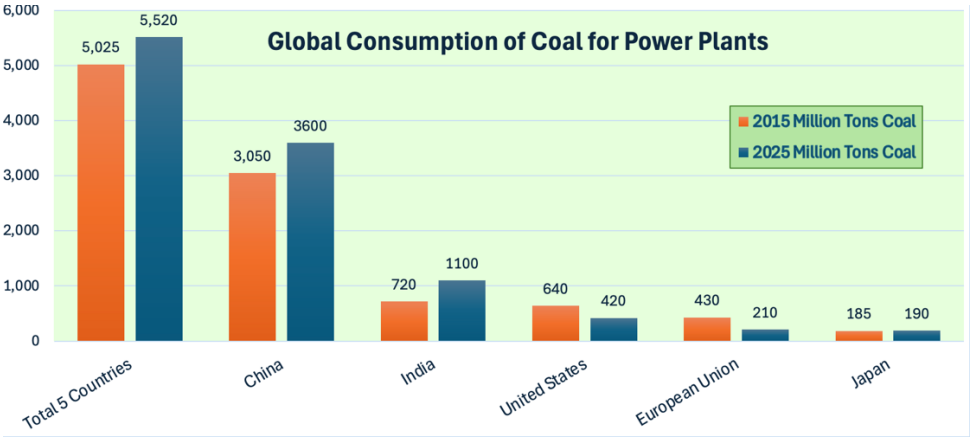
Coal Retirements and Additions

China and India dominate global coal power production. Together they account for 70% of all coal burned, up from 60% in 2015. This growth has been driven by electricity demand outpacing the rate at which renewable and nuclear power can be brought online. Coal use in the Unites States has reduced by 35% between 2015 and 2025 and has collapsed by 50% in the European Union. The U.S. and the EU have reduced their coal consumption by 440 million tons. However, China and India have increased their consumption by 930 million tons.



Coal and GHG Emissions

There are a few reasons why coal is disfavored. One is that burning coal emits a little more than twice as much CO2 as natural gas. Normally for natural gas operations, there can be some leakage of methane. (typically <2%). Methane is a much more powerful greenhouse gas than CO2. So if system leakages of 4-5% of methane were to happen, then gas would have the same climate effect as coal.

During the last ten years, 0.65 gigatons of CO2 emissions were avoided in the US due to the reduction in use of coal, not counting replacement power fuels. However, with increased usage in China, an addition of 1.7 gigatons of CO2 have been emitted during the same period.

Flue Gas Scrubber Utilization

Unlike India, flue gas scrubbers are widely used in China, primarily wet limestone flue gas desulfurization (FGD) systems. China began to adopt scrubber due to severe air quality issues and acid rain caused by SO2 emissions. These scrubbers are not just installed but are actually operating because of continuous emissions monitoring and severe penalties for bypassing these systems.

Advanced Effluent Treatment

Another reason that coal is frowned upon as a fuel source is that this scrubber water is an effluent with environmental risks. Virtually all natural gas power plants to not have scrubbers and do not generate this effluent. However with advanced treatment systems, this scrubber water can be efficiently cleaned to make water that can be reused in the scrubber or cooling tower and can provide a zero liquid discharge scenario so there is no effluent discharge.

One such advanced treatment system is the VSEP® vibratory shear enhanced processing RO system manufactured by New Logic Research of Minden, NV. Paring this equipment with an evaporator technology can produce ZLD results and clean water for reuse. The VSEP system has been approved by the U.S. EPA as a best available technology for treating FGD wastewater.

About New Logic Research

New Logic Research has been a trusted provider of water treatment solutions for the power industry since 1987. To explore how the VSEP RO technology can enhance flue gas desulfurization wastewater treatment operations by recycling water: https://www.vsep.com/industries/power-gen/. To speak directly with an experienced VSEP engineer: info@vsep.com