

Reducing Emissions

Fossil-fuel-based power plants in the U.S. have been getting exponentially cleaner over the past 50 years. Power producers have spent billions on equipment that scrubs combustion gas of compounds like mercury, non-mercury metals, gases like nitrous oxides (NO_x) and sulfur oxides (SO_x) and particulate. Here are some of the key devices used to clean emissions.

ACI

(Activated Carbon Injection)

Activated carbon absorbs mercury and other compounds from flue gas and is collected in ESP devices.

SCR

(Selective Catalytic Reduction)

Ammonia is added to the flue gas and, using a catalyst bed, converts nitrogen oxides (NO_x) into nitrogen and water. The process removes up to 90% of NO_x.

ESP

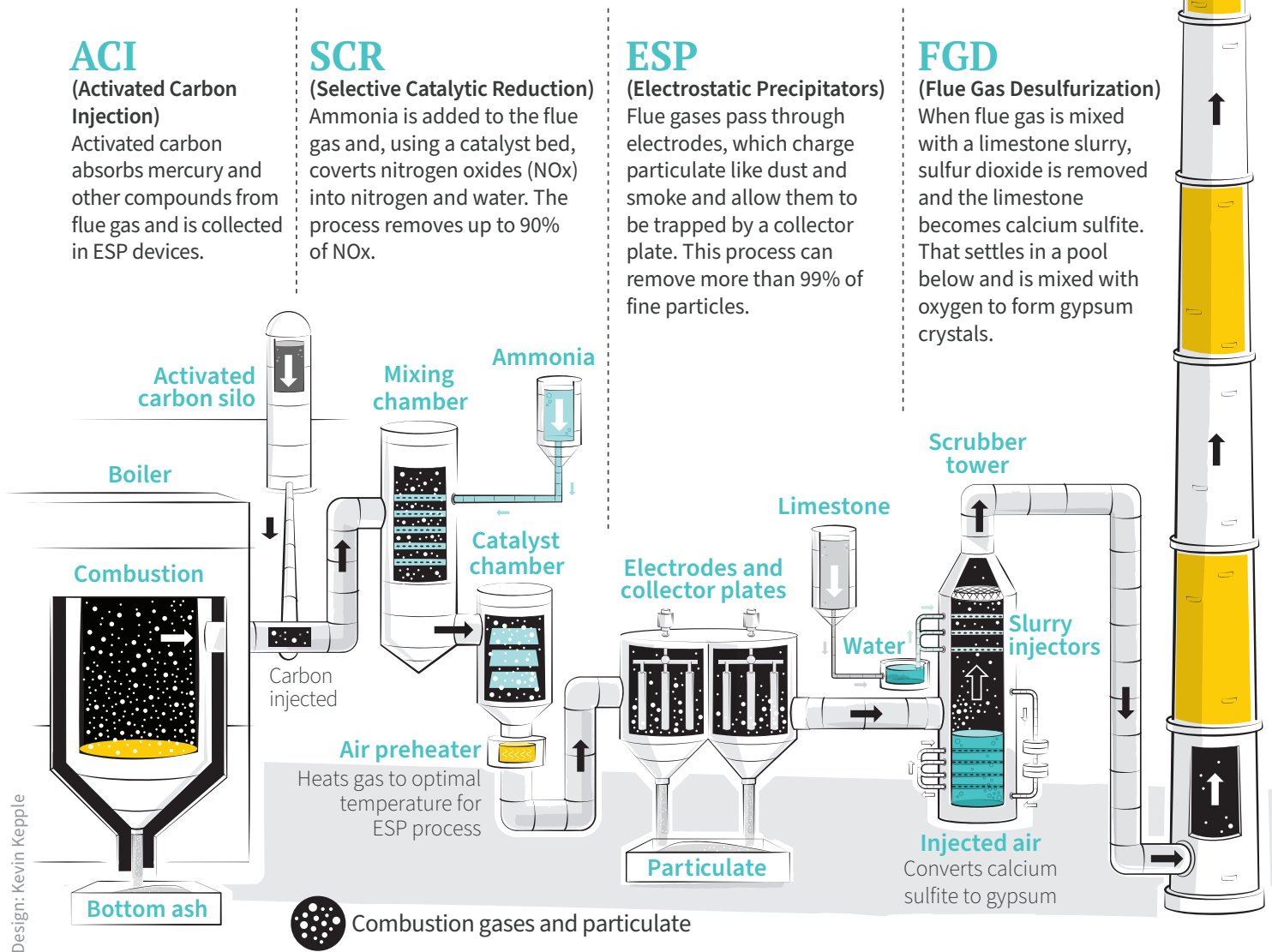
(Electrostatic Precipitators)

Flue gases pass through electrodes, which charge particulate like dust and smoke and allow them to be trapped by a collector plate. This process can remove more than 99% of fine particles.

FGD

(Flue Gas Desulfurization)

When flue gas is mixed with a limestone slurry, sulfur dioxide is removed and the limestone becomes calcium sulfite. That settles in a pool below and is mixed with oxygen to form gypsum crystals.



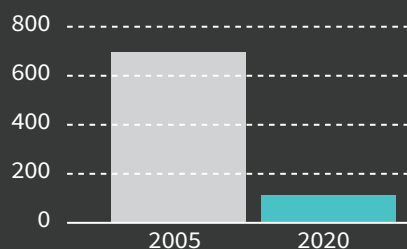
Massive Reductions

Over the past 15 years, generation and transmission cooperatives have made huge cuts in their power plant emissions by using flue gas scrubbing technologies.

Source: EPA and EIA

Total SO₂ emissions

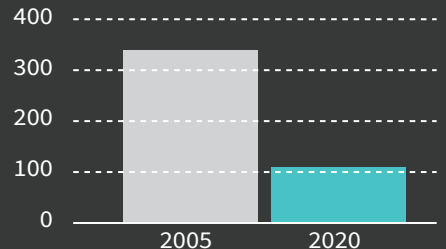
Thousands (short tons)



Reduced sulfur dioxide emissions by 84%

Total NO_x emissions

Thousands (short tons)



Reduced nitrogen oxide emissions by 68%