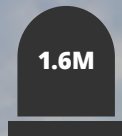
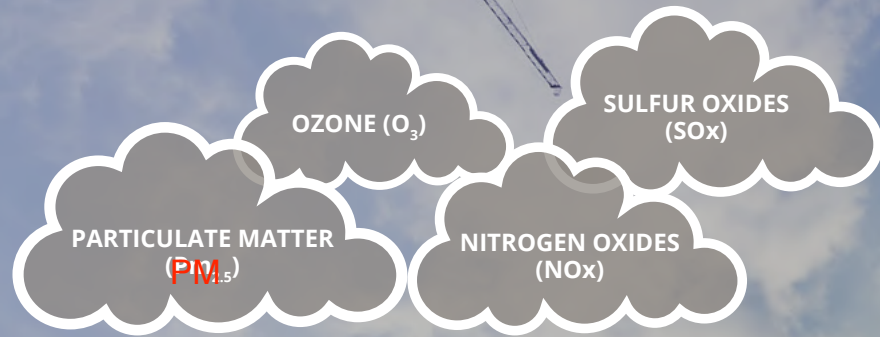


NATURAL GAS: IMPROVING THE AIR WE BREATHE

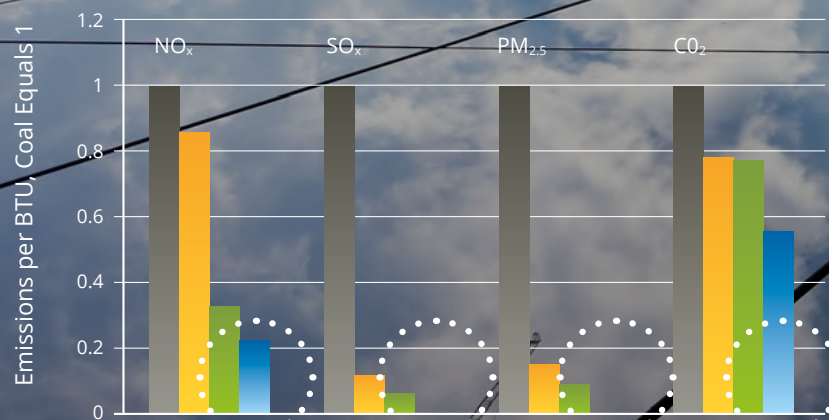


1.6M Deaths in China in 2015 were caused by P.M._{2.5} pollution – 4000 every day



87% Of the global population lives in areas exceeding the WHO's air quality guidelines

Air pollution continues to be "the world's single greatest environmental risk to health" – World Health Organisation



More natural gas = fewer pollutants and CO₂ emissions

FOUR CITIES TAKING ACTION

Beijing, China

2013/14

- Unprecedented pollution – PM_{2.5} concentration of 85.9 mg/m₃
- Half the days ranked 'unhealthy', or worse, or air quality

2015

- Aggressive coal to gas substitution policy implemented

2017

- 54% decrease in PM_{2.5} vs. 2016
- 4,453 coal-fired boilers shut down
- 900,000 households moved from coal to gas

Shanghai, China

2000-2012

- Industrial sources emitting 464,000 tons of SO₂ and 141,200 tons of PM
- Embarks on a coal to gas boiler retrofit program

2012-2015

- Incentives to encourage gas projects
- Enforcement of mostly coal-free zones

2016

- Reduction in all major air pollutants
- PM_{2.5} concentration improved by 15.1% vs. 2015, and 27.4% vs. 2013
- PM₁₀ concentrations dropped by 14.5%, vs. 2015

Urumqi, China

2012

- Initiative to switch household heating from coal to natural gas
- 12,900 coal boilers replaced with gas in 6 months

2013

- January: PM_{2.5} decreased by 62.8% year on year
- 5 million ton reduction in coal consumption
- 35,000 ton reduction in SO₂ emissions
- 17,000 ton reduction in soot

2014

- Gas largely replaces coal as dominant heating fuel
- January: PM_{2.5} decreased by 75.5% year on year
- 73% reduction in pollution-related lung cancer

Santiago, Chile

1989

- PM_{2.5} concentration registered at 68.9 µg/m₃, 7x recommended level

1994

- Law for the Environment enacted
- Protocol for Natural Gas Integration between Chile and Argentina implemented

2016

- Reduction of 39% of PM₁₀ and 58% of PM_{2.5} since 1990
- Reduction of 2.63 µg/m₃ of PM from industrial sources

SOURCE: EPA AP-42 Compilation of Air Pollutant Emission Factors; CenSARA Area Combustion Emissions Inventory Enhancement Project – Final Report 2011