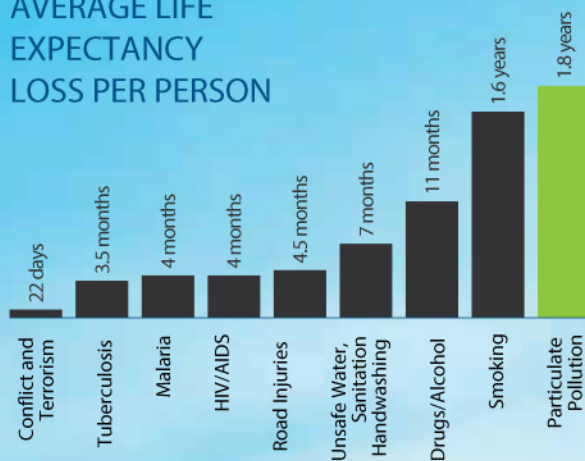


IGU recently carried out a study to find out the effect on air pollution with the increased use of natural gas in industry, power generation, heating and transport. The report concluded that natural gas use can significantly reduce air pollution. The study includes case studies of three cities – Morbi in India, London in UK, and Bogota in Colombia. IGU findings are placed below:

Natural Gas

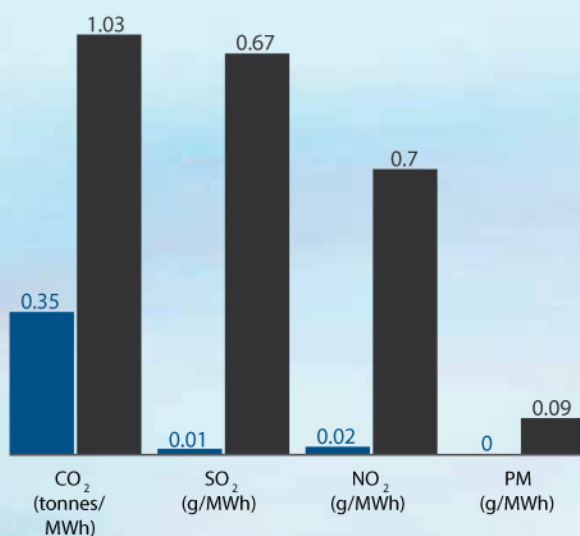
Cleans the air we breathe

AVERAGE LIFE
EXPECTANCY
LOSS PER PERSON



Source: AQLI Report 20188

COAL vs. GAS EMISSIONS FROM
1 MWh of GENERATED POWER



Source: Global Gas Insights



Air pollution
killed

1.24

million
people in
India in 2007

NATURAL GAS POWERED TRANSPORTATION CREATES SIGNIFICANT LONG-TERM ENVIRONMENTAL BENEFITS



Natural gas offers great improvement in air quality, due to its nearly zero PM emissions and low NOX emissions, that are major contributors to a growing issue of urban smog.

CO₂ Reduces carbon dioxide by up to 20%

NMO G Non-methane organic gas by 50 to 75%

CO Carbon monoxide by 70 to 90%

NO X Nitrogen oxides by 75 to 95%

THREE CITIES TAKING ACTION

Morbi, India



- **MORBI** has a major ceramic industrial cluster, a highly energy-intensive manufacturing process, which resulted in severe air and water pollution, due to use of coal.
- In March, 2019, the National Green Tribunal issued a ban on the use of coal gasification technology in the ceramic units of the area.
- The required switch to natural gas produced dramatic environmental and air quality improvements:
 - 75% reduction in $PM_{2.5}$ levels,
 - 72% reduction in PM_{10} ,
 - 85% reduction in SO_2
 - and elimination of some 3,150 kL of wastewater per day.

London, UK



- **LONDON** saw a gradual improvement in its air quality, since the first introduction of its 1956 Clean Air Act.
- The Act introduced social, economic, and technological changes to help reduce smoke and SO_2 emissions.
- These measures eliminated the use of coal inside homes, which was replaced largely by natural gas and electricity.
- As a result, SO_2 generated from household heating went from more than $400 \mu g/m^3$ to under $50 \mu g/m^3$.
- More recently, the introduction of the Carbon Price Support caused coal power generation to drop by 73%, accompanied by an 18% drop in CO_2 emissions and also a reduction in pollution.

Bogotá, Colombia



- **BOGOTA** has been on a positive trend in management of its air pollution, showing up in reduced levels of PM_{10} and $PM_{2.5}$.
- The city's bus rapid transport system (BRT) helped resolve the growing issues of traffic congestions resulting in drops of both emissions and air pollution.
- The city of Bogotá is taking further action by renewing 70% of their bus fleet, with 53% of the new vehicles to be fueled by compressed natural gas (CNG).
- CNG buses will help cut PM emissions threefold, from 0.030 to 0.010 (g/kW-hr), and emissions of NO_x fivefold – from 2.0 to 0.4.

