

## FAST FACTS

# LIQUEFIED NATURAL GAS

# LNG

### LNG IS NOT A COMPLICATED CONCEPT.

- LNG is simply natural gas that has been converted to a liquid through a purification and cooling process.
- During its conversion to LNG, natural gas is cooled to around minus 260 degrees Fahrenheit.
- This extreme cooling causes the gas to condense into a liquid that is barely 1/600<sup>th</sup> of its original volume.

### LNG IS NOT NEW.

- Commercial production of LNG began over 100 years ago.
- The technology has evolved in that time, but the basic science remains the same.
- As of 2018, there are more than 110 LNG plants in the United States alone.

### LNG IS LESS HAZARDOUS THAN GASOLINE, DIESEL AND OTHER LIQUID FUELS.

- LNG has the best safety record of all common fuel types.
- It is an odorless, colorless and non-toxic substance.
- In the unlikely event that LNG spills, it quickly reverts to a gaseous state and evaporates, leaving behind no residue.

### LNG SUPPORTS GLOBAL GREEN INITIATIVES.

- Natural gas when used as a fuel produces fewer emissions than oil, gasoline, diesel or coal.
- As communities around the world develop green initiatives to reduce air pollution, the demand for natural gas steadily increases.
- Natural gas is the cleanest fuel with a strong, broadly available supply.

# WHY DO WE PRODUCE

# LNG?

## LNG PROVIDES THE SAME BENEFITS AS REGULAR NATURAL GAS, JUST IN A MORE CONVENIENT PACKAGE.

- With its smaller volume, LNG is an efficient way to store more natural gas using less space.
- Before it can be used, LNG must first be regasified.
- Regasification is the process in which LNG is warmed until it returns to its gaseous state.
- Once regasified, natural gas can be used for heating, cooking and electricity generation. It can even be used to fuel vehicles.
- 32% of electricity in the U.S. is generated from natural gas, ranking it above all other fossil fuels.
- Almost 90% of homes in Philadelphia use natural gas for heat.

## LNG IS CHEAPER AND EASIER TO STORE AND TRANSPORT.

- Containers can store almost 600 times more natural gas as LNG than in its gaseous state, making it a cheaper way to maintain reserves.
- Gas can be bought and then stored as LNG when prices are low so that it's ready for use when prices are high.
- Specially designed containers allow for safer and more efficient transportation of LNG.

# WHAT MAKES LNG OPERATIONS SO SAFE?

### LNG FACILITIES HAVE STRICT REGULATIONS AND SAFETY MEASURES IN PLACE.

- All LNG facilities are operated and maintained in compliance with comprehensive and rigorous state and federal regulations.
- LNG is safely stored in specially designed insulated tanks.
- LNG facilities are equipped with gas detectors, fire detectors, temperature sensors and an array of safety measures that deliver crucial information to help ensure the safe and reliable operation of the facility.
- Facilities also have emergency shutdown systems in place, to minimize the impact if a significant issue arises.

### TRANSPORT VEHICLES ARE DESIGNED TO SAFELY HANDLE LNG'S LOW, LOW TEMPERATURE.

- LNG ships and tanker trucks have specially constructed storage tanks which have a very strong track record, similar to those in LNG storage facilities.
- They also are equipped with advanced safety features, including safety shut off valves and pressure relief valves.

### LNG TECHNOLOGY HAS STEADILY ADVANCED FOR OVER 100 YEARS.

- Since the first commercial LNG plant was established in 1917, there has only been one major incident at an LNG facility, which happened in 1944.
- Here at PGW, we have safely managed LNG for almost 50 years.

# LNG

# AND THE ENVIRONMENT

## LNG IS NATURAL GAS — THE CLEANEST FOSSIL FUEL AVAILABLE.

- As a source of energy, natural gas produces about 50% less carbon dioxide (CO<sup>2</sup>) emissions than coal and up to 30% less than oil.
- When used properly as energy, natural gas does not emit soot or dust.
- Unlike other fossil fuels, the environmental impact of an LNG spill is minimal.
  - If LNG were to spill on land or water, it would immediately vaporize and dissipate.
  - LNG is non-toxic and insoluble in water.
- Due in large part to the increased use of natural gas and renewable energy, U.S. energy-related CO<sup>2</sup> emissions reached a 25-year low in 2017.

## NATURAL GAS IS A GREENER OPTION IN THE HOME.

- Residential natural gas use accounts for only 4% of total greenhouse gas emissions.
- Using natural gas in the home means increased energy efficiency, cost savings and reduced carbon emissions when compared with traditionally generated electricity, oil and propane.
- Energy efficient natural gas loses less than 10% of its energy when transferred from the point of production to homes and businesses, unlike electricity which loses almost 70%.