

ACEC/MA Energy & Utilities Markets Conference

The Future of Natural Gas in MA

Jose M. Costa, President



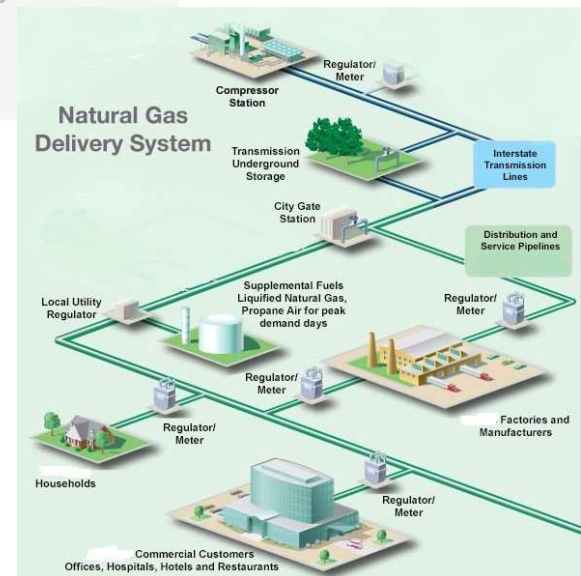
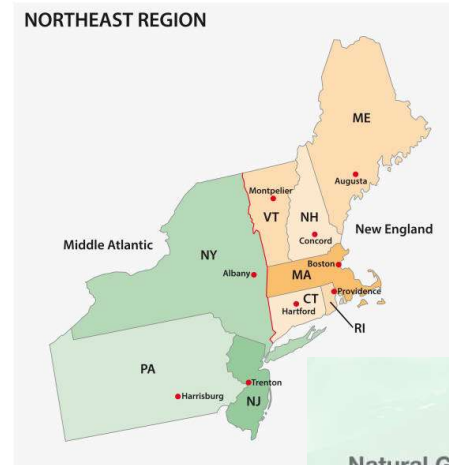
Burlington, MA
May 17, 2023

Introduction

- **NGA**
- **GHG Emissions**
- **Fossil Fuel Transition**
- **Eliminating Methane Releases**
- **Hydrogen and RNG**
- **Concluding Remarks**

NGA

- Trade Association Representing
 - Local Distribution Companies
 - Transmission Companies
 - LNG Terminals
 - 250+ Associate Members
- +13 Million Customers



NGA

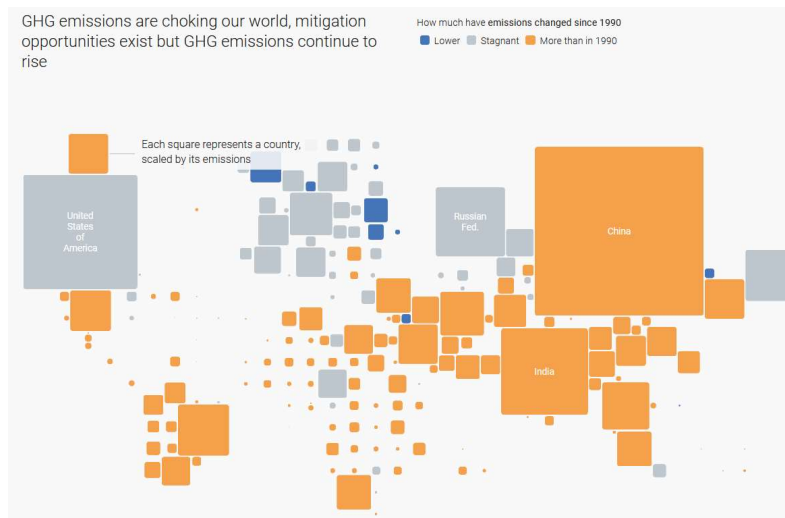


Guideline for
Gas System
Engineering
Design Review

Mission:

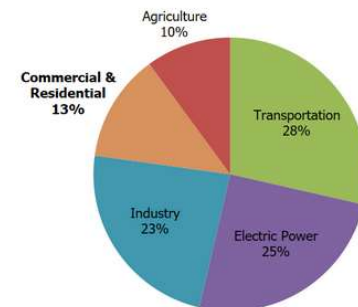
The NGA is the Northeast gas industry's voice in supporting the safe, reliable, efficient and affordable delivery of gas energy to customers as a continuing part of an environmentally responsible energy future.

GHG Emissions



Total U.S. Greenhouse Gas Emissions by Economic Sector in 2021

- **2021 World GHG Emissions 54.59 BMT**
- **2021 U.S. GHG Emissions 6.34 BMT (11.6% of World Total)**
- **2021 U.S Residential and Commercial Natural Gas CO₂ Emissions 0.435BMT (7% of U.S. Total)**
- **2019 MA GHG Emissions 70.97MMT (.071BMT)**
- **2019 MA Residential and Commercial Natural Gas CO₂ Emissions 13.980MMT (19.69% of MA Total)**



<https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>

https://www.unep.org/explore-topics/climate-action/what-we-do/climate-action-note/state-of-climate.html?gclid=EA1aIQobChMIot-Y5u76_gIV3t7jBx1vzgF5EAAAYASAAEgIOfvD_BwE

GHG Emissions

Carbon Dioxide Emissions Coefficients by Fuel

Carbon Dioxide (CO ₂) Factors:	Pounds CO ₂	Pounds CO ₂	Pounds CO ₂
			Per Million Btu
For homes and businesses			
Propane			138.63
Diesel and Home Heating Fuel (Distillate Fuel Oil)			163.45
Kerosene			161.35
Coal (All types)			211.87
Natural Gas			116.65

https://www.eia.gov/environment/emissions/co2_vol_mass.php

Fossil Fuel Transition

- **Net-Zero by 2050**
- **Learn From World and U.S. Experiences**
- **Invest in Research and Development**
- **Safe**
- **Reliable**
- **Efficient**
- **Affordable**

Eliminating Methane Releases

- **May 2023 Proposed U.S. DOT PHMSA Leak Detection and Repair Regulation**
- **MA GSEP - Main and Service Replacement Program**
- **Technology and Process Changes**



Hydrogen and RNG

- **Renewable Natural Gas (RNG)**
 - Total emissions from global livestock: 7.1 BMT of Co₂-equiv per year
 - 230 RNG projects across the nation in 2021
- **Hydrogen**
 - H₂Hubs - \$7 billion to establish six to 10 regional clean hydrogen hubs across America

<https://www.fao.org/news/story/en/item/197623/icode/>

<https://www.energy.gov/eere/vehicles/articles/fotw-1242-june-13-2022-production-capacity-renewable-natural-gas-projects>

<https://www.energy.gov/oced/regional-clean-hydrogen-hubs>



NGA
NORTHEAST GAS ASSOCIATION



GTI ENERGY
solutions that transform

Interconnect Guide for Emerging Fuels into Energy Delivery Networks

*Introduction of Renewable Natural Gas (RNG) and
Hydrogen Enriched Natural Gas (HENG)*

December 2022 Revision



Concluding Remarks