Increased Environmental Benefits from Pipelines & Energy Development for Nation and NY

As Earth Day 2018 approaches, Consumer Energy Alliance (CEA) reiterates its commitment to encourage the safe and responsible development of our abundant natural resources and environmentally sustainable practices that hold energy producers accountable for safe, responsible production while also meeting our country's energy needs. What is often lost in the sometimes over-heated political debate occurring over energy development and pipeline infrastructure across our nation, and in places like New York, are the incredible environmental benefits we are reaping from our country's own domestic Energy Revolution.

From 2005-2015, natural gas consumption across the United States has increased 24% while federal clean air data has shown a dramatic drop in various types of pollution, like sulfur dioxide - down 66%, fine particulate matter - down 34%, and nitrogen oxide - down 20% over that same time period.

This significant occurrence is happening largely through the increased use of cleaner-burning natural gas to meet our electricity needs and power our nation's industrial facilities.

In fact, the U.S. Environmental Protection Agency (EPA) issued its most recent Toxics Release Inventory (TRI) of air pollutants. Among the many findings, the EPA said the largest reduction in air releases came from electric utilities as they shift from coal to other, lower-emitting energy sources such as natural gas.

"All told, total greenhouse gas emissions are approximately 13% below 2005 levels, or roughly halfway to the U.S.'s abandoned Paris Agreement target of 26% below 2005 levels by 2025."

It showed that electric utilities' air releases accounted for 14% of the national total in 2016, but showed that emissions from the electric power sector had also decreased by 35% from the prior year's levels – falling to 829 million pounds in 2016 – down by 58% from 2006. In all, total TRI releases from utilities fell 64% between 2006 and 2016.

The observed trends in improving air quality across the country, with the increased use of natural gas and renewable production, have also occurred in New York. According to EPA data, from 2000 to 2016, sulfur dioxide (SO2) emissions rates dropped 98%. The emission rates for nitrogen oxides (NOX) and carbon dioxide (CO2) also declined by 87% and 43%, respectively, during that same period. (NY ISO 2017 Power Trends Report, p. 48)

Often left out of discussions is the critical importance that natural gas plays in supporting the rapid deployment of renewable energy across the country. Not only does it serve as a vital back-up for intermittent renewable power generation, it has also helped to drive down emissions - improving air quality

as well as greenhouse gas reductions. The reason these two resources work well together is that natural gas can be quickly brought online as renewables power down or when they're simply not available – like on a cloudy day or when the wind just isn't blowing.

The Business Council for Sustainable Energy released their 2018 edition of the Sustainable Energy in America Factbook. According to the report, together, natural gas and renewables generated 50% of U.S. electricity in 2017, up from 31% in 2008. The report also stated that greenhouse gas emissions in the U.S. power sector have fallen to their lowest levels since 1990, including a 4.2% drop between 2016 and 2017.

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Even the latest U.S. Energy Information Administration (EIA) data states that carbon emissions from U.S. power plants declined just under 30% – from 2.7 billion tons to 1.9 billion tons – between 2005 and 2017.

Following the reversal of various federal policies, researchers from Carnegie Mellon University (CMU) looked to see if reductions to the Clean Power Plan could still be achieved. They reported that the U.S. had already met the Clean Power Plan's (CPP) 2025 carbon emission reduction targets, and it was thanks in large part to the increased utilization of cleaner-burning natural gas.

Decreasing Emissions through Infrastructure

Regardless of the administration or majority in Congress, federal data has long confirmed that pipelines are the safest, most reliable, and environmentally preferred method to move the critical energy and fuels we use every day. Without pipelines, families, motorists, and a myriad of critical industries would depend on other forms of transportation to bring our energy to marketplaces all across the country – usually by trains, barges, or trucks. Consequently, each of these modes of transportation also require significant amounts of diesel fuel which in turn contributes to the very air emissions we're trying to reduce and also contributes to an increase in traffic congestion throughout our communities – both road and rail.

The consequences aren't just in the type of transportation, it's also in the lack of transportation. Consider the recent developments this winter in the Northeast where liquefied natural gas (LNG) had to be imported from Russia to meet basic home heating and electricity demands. Due in part to the political opposition by New York and New England's policymakers as well as unreasonable demands by activist organizations in response to building much needed domestic pipeline infrastructure, the region ended up having to rely on imported energy transported on ships burning bunker fuel from the Yamal LNG facility in the Siberian Arctic - thousands of miles away from any Northeastern port city. For those policymakers and activists concerned about the environmental impact of energy development in the region, pipelines are the most logical solution. Even Ernest Moniz, the former Energy Secretary in the Obama Administration, said, "Life cycle emissions for LNG imports to Boston certainly are higher than they would be for more Marcellus gas."

So the question becomes, would you rather get your energy from Governor Tom Wolf of Pennsylvania, or Vladimir Putin.

Implications for NY

That interdependency between gas pipeline infrastructure and the bulk power system is heightened in New York State, where natural gas-fired power plants and dual-fuel power plants that rely primarily on natural gas produce 44% of the state's electricity.

From a statewide perspective, New York continues to have a diverse mix of supply resources that includes wind, solar, hydro, and nuclear-powered generating facilities. However, there is a dichotomy noted by the state's independent grid regulator - New York Independent System Operator (NYISO) - that speaks to a "tale of two grids." One where the majority of hydropower facilities and emissions-free generation is located in Upstate and Western New York, and the other where there is less diverse options Downstate, including the greater New York City area where the majority of the state's population resides.

According to NYISO, "the combination of more stringent air quality regulations, limitations to the ability to flow energy across the transmission system, and reliability standards that establish local generation requirements in the downstate region have resulted in the power demands of New York City and Long Island being served with generation primarily fueled by natural gas." (p. 26, 2017 Trends report).

This means that during times of peak demand on any particular hot or cold day, certain power lines carrying electricity downstate have the ability to become easily bottlenecked as New York City consumes 60% of the state's electricity, even though the region only produces 40% of the state's power needs.

New York's reliance on natural gas-fired electricity is expected to grow as power projects using natural gas account for 56% of all proposed electric generation (p. 33, 2017 Trends Report). Furthermore, fossil fuels provided 74% of energy generation to Downstate residents and natural gas is used by more than half of all New Yorkers to heat their homes.

The Cuomo Administration's ambitious renewable and emission reduction goals, combined with its push to close the Indian Point nuclear power plant, mean that pipelines and natural gas will need to become a larger part of a broader energy conversation. Currently, Indian Point provides 25% of all the power consumed by New York City and Westchester County and 10% of the electricity for the entire state, as well as 2,000 megawatts of emission-free power. The only feasible solution to keep the lights on and support renewable development while also keeping emissions down for a cleaner, more sustainable energy future, is facing the reality that New York, and the rest of the country, need more pipeline infrastructure.

21,600 facilities located in every state reported to TRI for 2016

Since 2006, releases to the environment have decreased by **21%**