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Climate change is real and unequivocal. And it is happening now. According to NASA data, the earth is warming at an alarmingly rapid rate. In fact, all the 10 warmest years in the 138-year record have occurred since 2000—with 2016 as the warmest year since 1880.

What causes climate change, though, and what are its effects?

Scientific evidence shows that the dominant cause of the rapid change in climate is human-induced increases in the amount of atmospheric greenhouse gases, particularly carbon dioxide, methane, and nitrous oxide. Although there are other contributors to the heat-trapping pollution, according to a report by UN Environment and Intergovernmental Panel on Climate Change (IPCC), the most significant sources are from electricity and heat production, manufacturing and construction industries, and fugitive emissions from solid fuels, oil, and gas.

Photo by Patrick Hendry via Unsplash

The adverse and dire effects of rapid climate change to our planet include extreme weather conditions (such as longer and hotter heat waves, more frequent droughts, heavier rainfalls, and more powerful hurricanes), shrinking ice sheets, glacial retreat, rising sea surface temperatures and sea levels, ocean acidification, and shifts in flower/plant blooming times.

As an archipelago with a tropical climate and one of the longest coastlines in the world, the Philippines is highly vulnerable to the impact of climate change. We will experience intensified and deadlier typhoons, increased flooding, especially in low-lying areas, longer dry spells, disease outbreaks, extinction of animal and plant species, influx of agricultural pests, and death of coral reefs. Also, sea levels in the country are rising faster than the global average, increasing the hazard posed by storm surges.

Climate change is a global problem that requires globally-coordinated solutions.

Between 2000 and 2010, the global rate of greenhouse emissions more than quadrupled from the previous decade, and if this continues to increase as it has been over the last 50 years, then by the end of this century, the world will be at least 4°C warmer than it was before the Industrial Revolution. And the warming will not stop there.

The Philippines is one of the most disaster-prone countries as we are geographically located along the Pacific Ring of Fire and the Typhoon Belt. What exacerbate the risks further are our relatively low level of economic development and limited resources. Thus, while we are not a big emitter, we remain among the most heavily impacted.

Photo by Dikaseva via Unsplash

During the Paris climate conference (COP21) in December 2015, a total of 195 countries reached a landmark agreement “to combat climate change and to accelerate and intensify the actions and

investments needed for a sustainable low carbon future." Aside from being a party to that monumental agreement, the Philippines is taking strides toward transitioning to a low-carbon development pathway by implementing various government policies (such as the Renewable Energy Sector Roadmap for 2017-2040 that the Department of Energy designed and initiated, the incentives provided to enterprises that generate and sustain green jobs, etc).

Everyone should do his or her share to mitigate the impact of climate change.

Although, it is hard to imagine that we, as individuals, can do something to resolve a problem of this scale and severity, we should at least try. One person's initiative may be a mere drop in the bucket but, with around 7 billion people around the world contributing to that collective effort, we can ultimately fill any bucket.

We can start from simple acts such as planting trees, fruits and vegetables, using less plastic, conserving energy in our homes, buying consumer goods that are organic and appliances that are energy-efficient, walking or biking to a nearby destination, and investing in a car with the lowest emission. We should also consider advocating a switch to cleaner energy sources. Together, we have the power to make our voices heard and make big changes happen.

Shifting to natural gas is the clarion call of the times. As the country is taking steps to diversify its energy mix, one source is taking center stage—natural gas.

Photo via First Gen

Clean Compared with other traditional energy sources, natural gas is much cleaner and is, thus, more environment-friendly. It emits about 60% less carbon dioxide (which contributes to climate change), almost 100% less sulfur dioxide (which contributes to acid rain), and up to 80% less nitrogen oxide (which contributes to smog) versus coal. It has no by-products such as ash, sludge, or particulate matter (which are all harmful to our health and the environment). By choosing cleaner sources of energy, we can help reduce our environmental footprint and avoid pollutants with harmful health impacts.

Affordable Power from natural gas plants is competitively priced—primarily due to the low costs of building and running its plants. Compared to other plants like coal, costs to construct, operate and maintain natural gas plants are much less—up to one third the cost, as reflected in the EIA data on Project and O&M; Costs. In 2018, the weighted average generation cost per kWh of natural gas was at around 5 pesos, compared with that of oil at 15 and coal at 6. Another thing that makes natural gas economical is its efficiency. Natural gas plants operate at an efficiency level of 50%-60%, while coal plants only at 30%-40%. This higher level of efficiency allows natural gas plants to generate more electricity with the same amount of fuel, which helps keep costs low. All these translate to lower generation costs.

Reliable Finally, natural gas plants are fast and reliable. A power outage can happen anytime, anywhere, and it may be due to various causes—extreme weather conditions, human error, equipment failure, supply/demand issues, etc. The good thing with natural gas plants is that they can react quickly to these failures. Its plants can start up much faster –up to 500 times—than coal-powered plants and it can perfectly complement the intermittency of renewable energy.

Indeed, natural gas can provide immense support in the country's transition towards a Renewable Energy (RE) future. It can most effectively address the challenges posed by RE's intermittency and its technology's inability to immediately bridge the gap between the demand for and supply of energy.

In the Philippines, First Gen Corporation is the pioneer and leader in the natural gas industry. It is the only power-generating company of its size that does not have coal power in its portfolio. It is the

supplier of 1/5 of the Philippine’s power demand, producing 3,492 megawatts of clean and low-carbon energy.

In 2018, First Gen natural gas power plants helped avoid emissions of about 8 million tons of carbon dioxide into the atmosphere, compared to if we had used coal plants. That is equivalent to removing about 1.7 million passenger vehicles, recycling 2.8 million tons of waste, or planting around 132 million trees over 10 years.

Admittedly, it will take a while before the world manages, if at all, to completely switch to Renewable Energy. In the meantime, we have to support the use of the cleanest energy mix available to us, which is RE coupled with Natural Gas. Together, let us make the good switch! INQUIRER.net BrandRoom/LA