

# Power struggle: Solar, wind challenge coal as more affordable energy source

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*In Photo: This file photo shows the Panay Energy Development Corp.'s 150-megawatt "clean coal" power plant the firm switched on last year. The power plant is considered the largest single-generation unit in the Visayas.*

## **Part One**

WITH much enthusiasm, climate and environmental advocates see the ratification of the Paris Agreement by the Philippine Senate both as a challenge and opportunity to shift from dirty fossil fuel to clean renewable energy (RE).

Although ambitious, reducing the country's greenhouse-gas emission by 70 percent between 2020 and 2030 will be a tough nut to crack, as it struggles to sustain growth currently pegged at 6.8 percent last year.

This goal is yet clearly a "conditional" commitment largely dependent on the support the Philippines will get from the international community.

Last year the Climate Change Commission (CCC) said RE presents the biggest opportunity for local investment as the country plans to veer away from coal.

An environmental advocate, Environment Secretary Regina Paz L. Lopez vowed to expedite the granting of environmental compliance certificates (ECCs) for RE projects while thoroughly reviewing ECCs for potentially destructive and environmentally unsound development projects—particularly mining and coal.

Among the renewables, climate and environmental advocates are betting on solar and wind over coal in competing for huge investments pouring the power sector's way.

Citing the “Boom and Bust 2017—Tracking the Global Coal Plant Pipeline” report, Greenpeace Philippines Climate and Energy Campaigner Reuben Muni said it is just a matter of time when investment starts shifting to the more economically viable clean, RE options, dropping coal in the process.

Muni said ditching coal will eventually reverse the trend in favor of solar, wind or other RE sources.

### **Laying blame**

WHILE admittedly one of the cheapest and reliable source of energy today, coal is being blamed by climate and environmental advocates for causing not only air, soil and water pollution that undermines human health and environment but for being the biggest contributor to global GHG emissions that trigger climate-change disasters.

The Philippines is not oblivious to climate change-triggered disasters. In 2013 the strongest typhoon ever to make landfall in history devastated Central Philippines, leaving a trail of death and destruction. Climate-change effects, such as longer wet season and longer dry seasons, also cause enormous damage to food production areas that undermine the country’s food-production capacity, including fisheries.

While the Philippines is not one of the so-called big polluters, climate and environmental advocates said the Philippines should step back and cease from following the development track of developed countries only to make the turn-around later on.

Instead, they said the Philippines can take a more sustainable development path by shifting from its use of dirty coal to more environment-friendly sources of energy, such as solar, wind, geothermal, possibly, ocean current, biomass or biogas—without compromising the integrity of its already fragile environment.

### **Huge investment**

INVESTMENT in coal in the Philippines, as well as other energy sources, can only be estimated based on power-generating capacity power plants.

For coal investment, the rough estimate can be based on those being constructed and those that are already existing, according to Muni. The country’s current installed power-generation capacity is 18,765 megawatts (MW). With a 45-percent share, coal investment in the Philippines is pegged at \$8.54 billion.

This is a conservative estimate, as the Department of Energy figure accounts only for the power-generating capacity that goes to the main power grid.

“A lot of these things are on a specific timeline,” Muni said. “One MW of coal is equivalent to \$1 million three years ago. But today, this may no longer be true.”

He explained the equivalent figure could even be higher because coal’s volatility causes price to go up.

## **Market forces**

MUNI said coal is like other goods that are subject to market forces at work—economic, politics—like oil and gas, coal price also change.

“In the past, during the [Fidel V.] Ramos and Cory [Aquino] administration, our power was based on three big sources—hydro, geothermal and oil diesel,” he said. In 2015 around 45 percent of the country’s energy supply comes from coal, 23 percent of the country’s energy supply comes from natural gas, 13 percent from geothermal, 11 percent from hydro and 7 percent from coal.

At some point, oil became the biggest source of energy in the mid-1990s because of the Persian Gulf War and Middle East Crisis—when price of oil was very volatile.

“During the last year of the Cory administration and the start of the Ramos administration, we only have the Calaca power plant—the first- ever coal plant in the Philippines,” Muni explained. “Then came Pagbilao, Masinloc and Sual. The entry of coal as a power source started to boom.”

At that time, coal was the cheapest and most accessible source of energy, with the Philippines having the Semirara coal mine, and neighboring countries, such as Indonesia, China and Australia, possibly supplying the Philippines with adequate coal.

## **Coal dependence**

THE Philippines is currently heavily dependent on coal.

According to the DOE, coal has the highest contribution to the country’s current power-generation mix pegged at 44.5 percent as of 2015.

The local demand for coal is not limited to power generation.

In 2015 the cement industry utilized 15.22 percent of the country’s coal supply while 5 percent went to other industries, such as alcohol, sinter, rubber boots, paper and chemical manufacturing, fertilizer production and smelting processes, according to the DOE.

This factor makes coal as having the biggest share in terms of investment in the country’s energy sector.

Industries, Muni said, are into coal use for economic reasons, which means the country’s dependence on coal could be worse. The DOE, he said, only counts those that feed the power grid.

Even oil companies, such as the Petron Oil Refinery in Limay, Bataan, he said has a coal plant with 140-MW capacity.

While it powers its oil-refinery facility, Petron is also providing the power grid with the excess power it produces from its own coal-fired power plant, he said.

## **Coal rise**

THE country' dependence on coal became more pronounced in the last 15 years. According to the DOE, since 2002, from a historical yearly average of 1.5 million metric ton (MMT), local coal production grew tremendously.

Muni said the country started to shift from oil—then the dominant source of energy—to coal during the Cory and Ramos administration. The shift, he said, was because of economic reasons.

“During the Persian Gulf war, oil became very volatile,” he explained. “With the Philippines having its own coal resources, investment in power shifted to coal.”

But the Philippines, he said, only has low-grade coal, which means it has to import coal. Around 70 percent of the country's coal requirements are imported. Of that, around 90 percent comes from Indonesia, with the remaining 10 percent coming from Australia and China, making Philippines heavily dependent on Indonesia's coal industry.

In the last 13 years, local production of coal grew almost four folds, with production peaking up to 8.17 MMT in 2015, according to the DOE.

Muni said it was during this period that the country saw more coal-fired power-plant projects being approved and constructed to meet the increasing demand for energy.

The shift to coal as a source of energy was attributed to the highly volatile price of oil in the world market and the failure of the DOE to promote RE sources to investors in the power sector.

At that time, Muni admits that RE is not yet economically feasible and the technology not so much available in the Philippines.

***To be continued***

*Image Credits: Nonie Reyes*