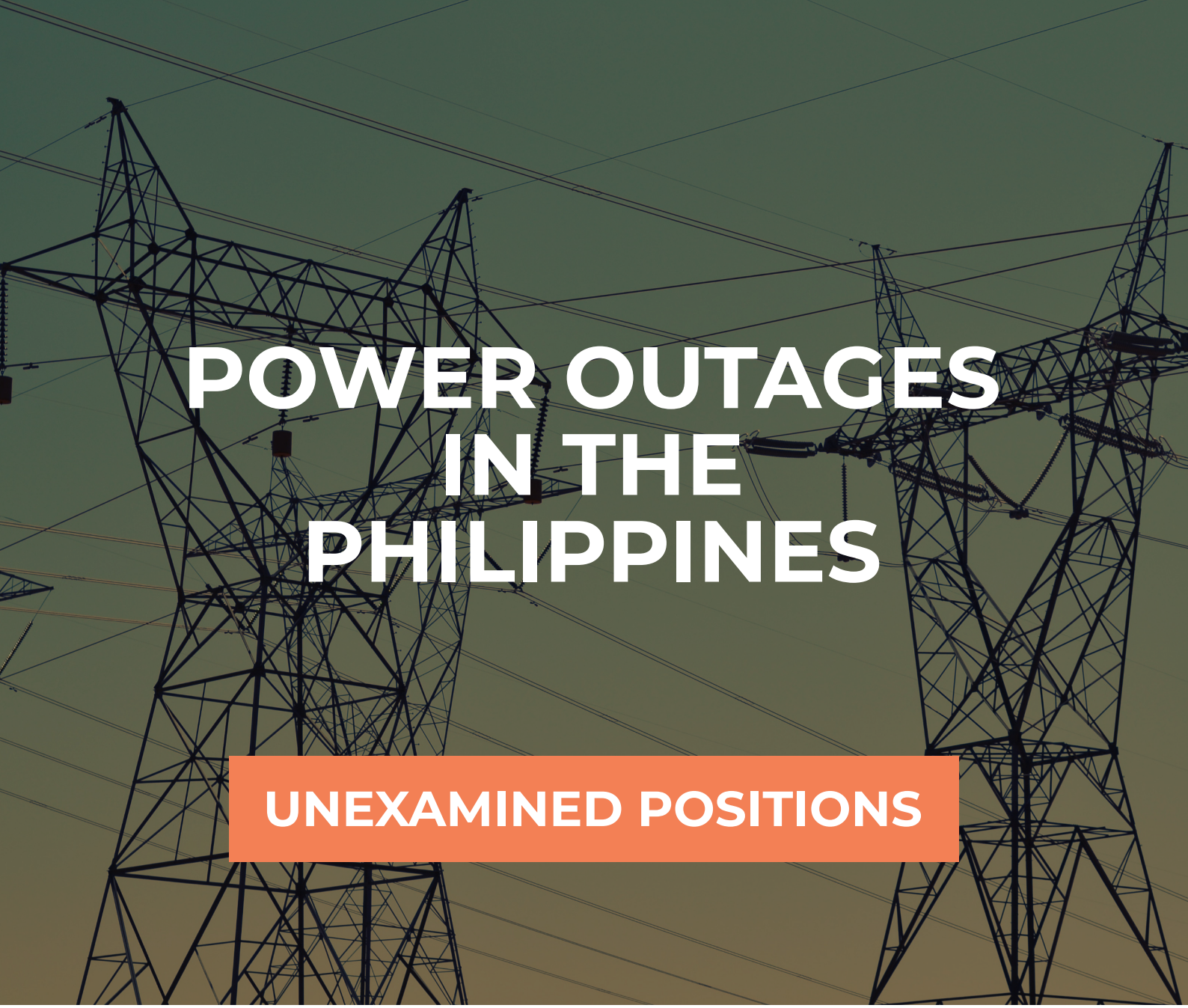

POWER OUTAGES IN THE PHILIPPINES

UNEXAMINED POSITIONS

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INSIGHTS

POWER OUTAGES IN THE PHILIPPINES: UNEXAMINED POSITIONS

The Senate Energy Committee continues its inquiry to address the rotating blackouts this year. According to Energy Secretary Alfonso Cusi, the power outages are caused by unplanned and extended maintenance shutdowns of high-generation capacity power plants. For example, from 31 May to 2 June, the four plants with combined capacity of over 2000 MW were offline. While this seems like a simple issue of properly scheduling maintenance, there is a lot more to unpack.

Planned maintenance shutdowns are scheduled regularly based on operating-hours maintenance schedule and manufacturer recommendations. Every year, the Department of Energy (DOE) requires power plants to submit their preferred maintenance schedule which the system operator aggregates and adjusts until the schedule meets a levelized reserve level throughout the year. A final schedule is released every October of the year before and is called the Grid Operating and Maintenance Program (GOMP).

On the other hand, we also have unplanned and extended shutdowns. Unplanned shutdowns are unanticipated failures that cause the plant to be unavailable for service. Extended shutdowns in turn refer to an extension of planned outage due to additional component failure. In recent cases, the reasons for extended shutdowns are the effect of the pandemic as it made it especially difficult to address needed preventive maintenance concerns like importing spare parts and mobilizing technical personnel.

While unplanned shutdowns occur as a result of an unanticipated breakdown, the fact of the matter is, the aging of the generating units in the grid add to the increased forced outage rates, extended scheduled outages, and capacity de-rating of units. The latter is a limitation which results in a decrease of plant output. Some 4740MW of the total installed 16,513MW are over 15 years old.

Secretary Cusi proposed two solutions to this issue - 1) to contract more long-term capacity, and 2) NGCP should procure 100% levels of ancillary capacity as required by DOE from firm contracts.

DOE's first solution of contracting more long-term capacity seems to refer to standby or insurance capacity distinct from the "is instantaneous response" types on ancillary services called for in the Ancillary Services Procurement Plan (ASPP) of the NGCP. Until a few months ago before the Malaya Thermal Plant facility was sold, the facility was being dispatched as a "must-run" unit or a generating unit that is required to operate only when needed for energy security, indicating that there is a clear need for flexible technologies including pumped hydro and battery storage.

[1] Plants with inflexible capacity payments are also technically difficult to ramp up and down which include nuclear, coal and combined cycle gas turbines (CCGT), and thus are considered inflexible technologies.

The first proposed solution of contracting more long term capacity could be expensive. If NGCP contracts to its required levels of capacity, as DOE has been suggesting, then it is no longer necessary for contracting insurance capacity long term.

The second solution is for NGCP to procure 100% of the ancillary service level according to its ASPP. According to the Energy Regulatory Commission (ERC), based on their simulations related to such firm contracts, it was probable that consumers might have to pay more if the DOE policy were followed.

In fact, as Senator Nancy Binay rightly pointed out in the Senate Energy Committee hearing, setting aside reserves would remove already existing capacity from what is available from WESM. Senator Binay asked DOE if the capacity intended for 100% reserve contracting is coming from the current dependable capacity, and if so then contracting would only decrease the capacity available for dependable capacity of the grid. And if such capacity would come from a new plant, why not just add it to the dependable capacity to avert the Red Alert events.

NGCP fully contracting those ASPP required levels will not only be the more cost-effective way, it will also send the correct signals to investors through the market as to the amount and type of generation to be built for the future. DOE discredits the claims of increasing the cost to consumers by saying the economic cost of outages is much bigger than the probable increase in electricity rates.

A big advantage in complying with the 100% contracting of reserves is that private investors will be encouraged to build additional and more appropriate power plants more suited to the current demand profile. The only proviso here is that the NGCP and ERC should start working on the piling applications by the generators on Ancillary Service contracts. If the generators see an income opportunity heading their way, investments in peaking and flexible capacities will come.

The power outage issue is a recurring problem. We have been seeing power supply issues since 2016, every year. Many base load plants have been on extended outage in the months that have the highest peak demand of the year. A report by the International Labor Organization on heat stress showed that the Philippines may lose 1.2 million jobs per year by 2030 equivalent to working hours lost due to heat stress as we reach 1.5 degrees of warming. However, it's no surprise that we are logging more intensity and frequency of climate change impacts – we may be approaching the 1.5 centigrade limit of the Paris Agreement much sooner than expected as PAGASA recorded the highest heat index of 51 degrees Celsius. It is imperative that the energy systems are built on the weather of the future, and not the past.

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