HONOLULU STAR-ADVERTISER

President and Publisher
Dennis Francis

Editorial Page Editor
Lucy Young-Oda
lyoungoda@staradvertiser.com
808-529-4831

Deputy Editorial Page Editor
Stephen J. Downes

Editorial Page Staff
Elizabeth Kieszkowski / Vicki Viotti

OAHU PUBLICATIONS INC.

Board of Directors
Dennis Francis
Larry Johnson
Jeffrey Watanabe
Michael Wo

Aloha to the coal plant, but were we ready for the transition?

By Ed MacNaughton and Clint Churchill

ISLAND VOICES

Retired businessmen Ed MacNaughton and Clint Churchill represent the Practical Policy Institute of Hawaii.

The AES coal plant that produces about 15% of electricity on Oahu is closing in a matter of days. For the past 30 years, the coal plant helped protect against fluctuating oil prices and supply issues while reducing customer payments by more than a reported $2 billion. Mission accomplished, but recent concern about climate change and the desire to reduce CO2 emissions now trumps our coal plant.

But by one account, "we've traded one fossil fuel for another, at least in the short run." Despite the efforts of Hawaiian Electric (HECO), not enough independent power producer (IPP) solar projects have been completed to offset the lost capacity. HECO assures us that "the lights are going to stay on," but in the short run by burning thick, black fuel oil. And bummer, HECO also announces a 7% surge in electricity bills.

Readers should understand the difference between capacity and generation. To replace generation from the 180 megawatt (MW) coal plant will require 720 MW of solar capacity. The reason? Whereas the coal plant could produce 180 MW of power 24 hours a day, solar panels produce nothing at night and about 50% of capacity during daylight hours. The national average is 24.7% "efficiency." Hawaii projects are probably not much different.

So where are we? At last yearend, after more than 10 years, 14 utility-scale solar projects had been completed on Oahu, with 196 MW of capacity. Coupled with nine additional projects in development as this year began, the combined 549 MW of capacity will only replace 76% of coal plant generation. It will likely take several more years of additional projects to offset the plant's closure.

Based on 2021 electricity consumption, 72.8% of Oahu's electricity comes from oil and coal. In order to achieve "100% renewable," the equivalent of closing down almost four more coal plants will be required. Where will all of this renewable power come from? We previously discussed the likely end of additional utility-scale wind projects on Oahu, leaving solar as the only logical option to achieve 100% renewable.

Achieving reliable electricity from utility-scale solar projects plus large battery farms will simply be cost-prohibitive. The $200 million battery farm under construction at Kapolei will store less than 3% of one day's demand. To have enough battery capacity to make solar power reliable for several overcast days will cost billions.

Land use implications are significant. At a typical 7 acres per megawatt of capacity, replacing the coal plant with solar farms will take more than 5,000 acres. As a point of reference, the entire Daniel K. Inouye International Airport covers 4,220 acres. The coal plant operated on about 30 acres. Then consider three times that acreage to replace oil-fired units at Waiau and Kahe. Do we really want to commit more than 20,000 of acres of land on Oahu for solar panels? The situation will get even worse as we convert to electric vehicles and power up the train. The words "paved paradise and put up ... solar farms" come to mind. Is this the future we want for Oahu?

Perhaps of equal or greater concern with the coal plant's demise is the loss of firm, reliable power. The dilemma facing the state Public Utilities Commission (PUC) and HECO: how to achieve dependable electricity from solar, an intermittent resource. With PUC's approval, HECO is undertaking a major yearlong process to seek bidders for "firm renewable" energy projects. The expected contenders — biomass, biofuel, hydrogen — will likely be much more expensive than a clean-burning fossil fuel. And whether biomass and biofuel are really "carbon neutral" (rationalized by assuming offsetting CO2 absorption during feedstock growth) is controversial, to say the least.

In summary, while the coal plant shutdown achieves no significant decarbonization in the short term, issues surrounding dependability, affordability and land use are brought to light. We continue to ask: Is a blinders-on, 100% renewable policy practical for Oahu?