

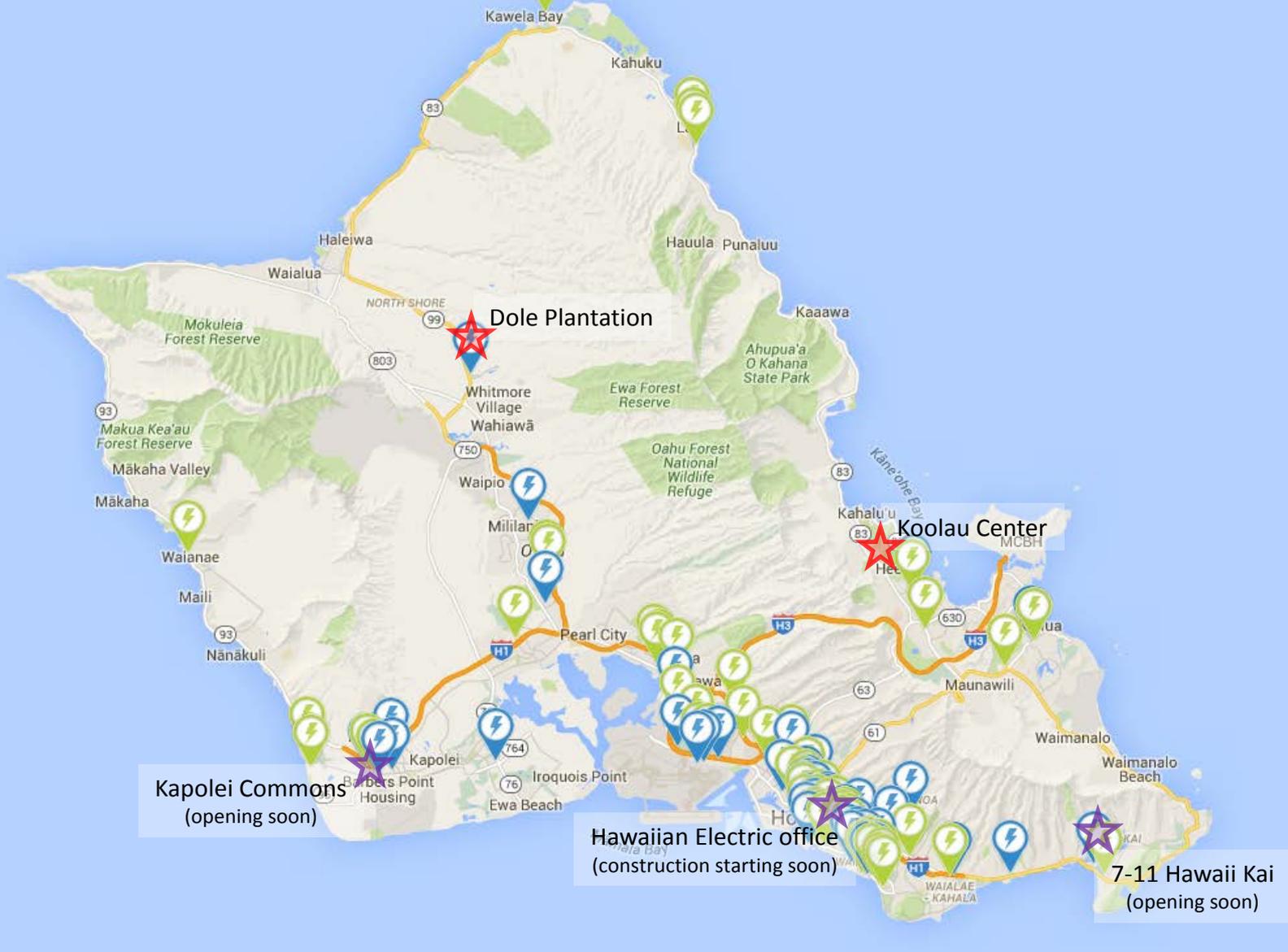


**Act 164 - Hawai'i Multi-Unit Dwelling EV
Charging Working Group Meeting**
October 28, 2015



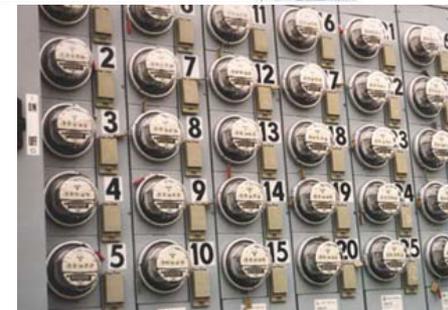
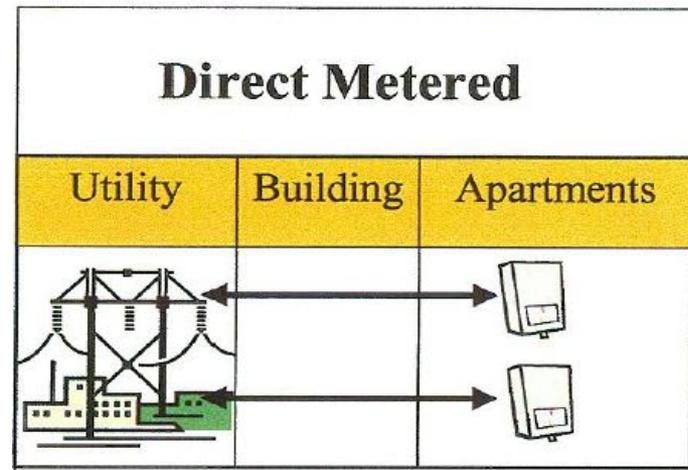
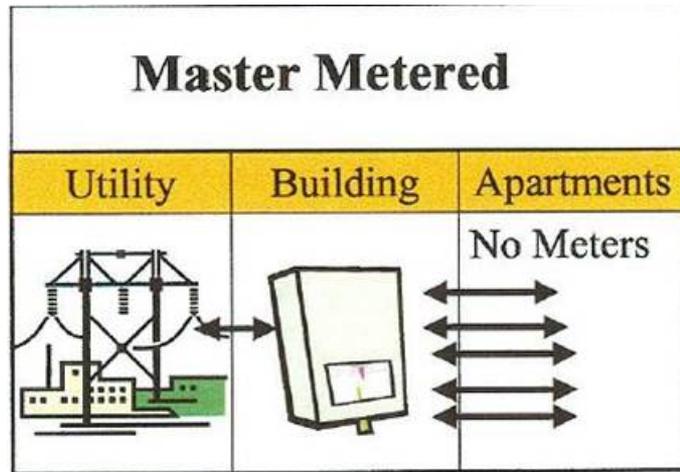
**Hawaiian Electric
Maui Electric
Hawai'i Electric Light**

Hawaiian Electric DC Fast Charging Update



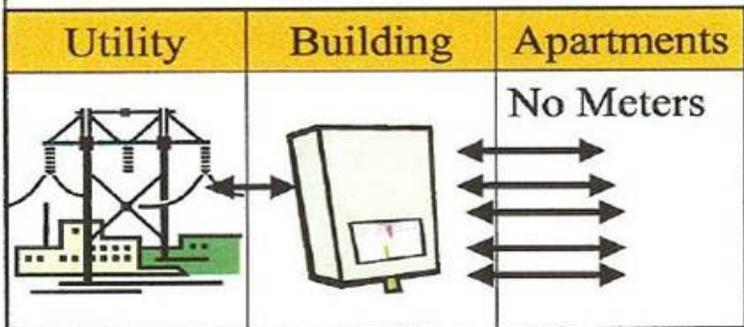
Sub-metering Overview

Currently, residents in non-sub-metered multi-unit buildings (rental apartments, condominiums or cooperatives) pay for electricity through one of two ways- through master meter or direct meter service.



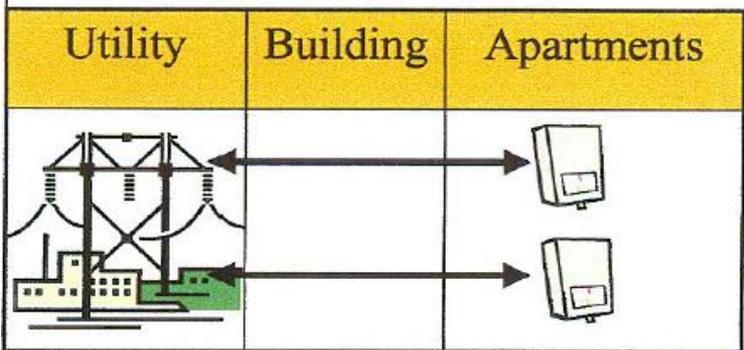
Sub-metering Overview

Master Metered



Residents pay the building owner for electricity as part of a monthly bill, but the bill is not itemized. The Utility bills the owner of the building, but living area electricity costs are estimated and distributed to residents based on shares owned or square-footage of the living space, not actual usage.

Direct Metered

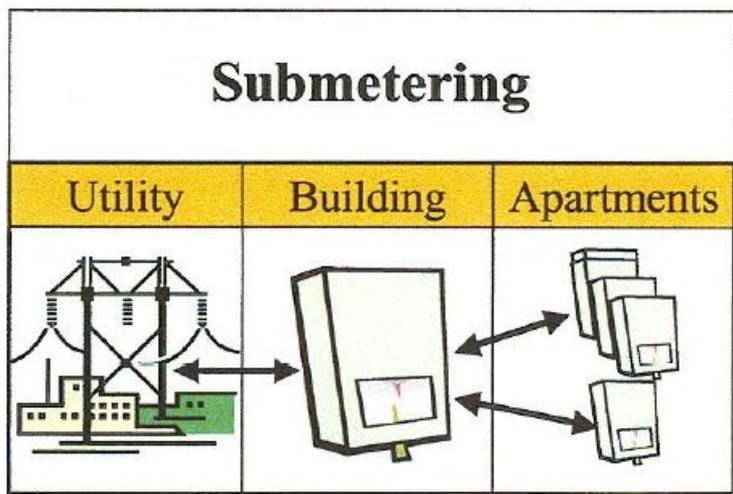


Residents pay directly to the Utility for electricity at an individual residential customer rate. Residents can monitor and control their electricity usage but the infrastructure to implement this option costs more than master metering.



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Sub-metering Overview

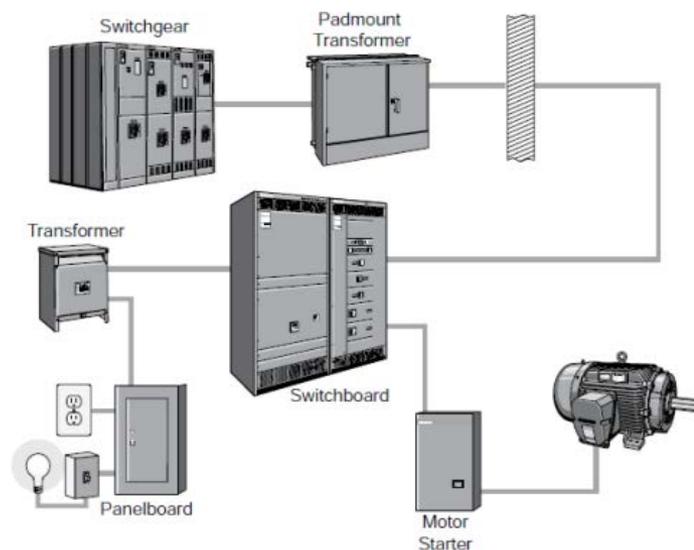


Typically, sub-metering is performed by a third party. Sub-metered buildings are billed through a utility master meter and living units are individually sub-metered to better reconcile electricity use between the building and residents. If AOA require EVs to be metered, sub-metering may help lower infrastructure costs by bringing the EVSE metered connection point downstream of the master meter.

However, sub-metering does not address the cost to build infrastructure to the point of the customer. These costs would traditionally be borne by the customer. While adding a few EV drivers may not trigger infrastructure upgrades, there will be a saturation point for EV drivers that would require upgrades at the customer's expense.



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Mahalo



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