

Zero Net Energy Communities and the Impacts to the Grid

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Abstract : The electricity grid is changing in terms of flexibility. Distributed generation (DG) policy is being discussed worldwide and implemented. Developers and utilities are seeking a pathway towards Zero Net Energy (ZNE) communities and the interconnection to the distribution grid. Using the VISDOM platform for establishing a method for managing and monitoring energy consumption loads of ZNE communities as a capacity resource for the grid. Reductions in greenhouse gas emissions and energy security are primary policy drivers for incorporating high-performance energy standards and sustainability practices in residential households, such as a market transformation of ZNE and nearly ZNE (nZNE) communities. This research investigates how load data impacts ZNE, to see if there is a correlation to the daily load variations in a single ZNE home. Case studies will include a ZNE community in California and a nearly ZNE community (All - Electric) in the Netherlands, which both are in measurement and verification (M&V) phases and connected to the grid for simulations of methods.

Keywords : zero net energy, distributed generation, renewable energy, zero net energy community

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