

Distribution Monitoring for Renewables Integration

Project to be funded by PIER: CIEE with research partners UCI and UCSD

Collaborative effort with California utilities

Phase I: share and analyze measurements from existing hardware, such as substation monitors and power quality monitors where available

Phase II: install additional line sensors and monitors (anticipate ca. 3 each on ca. 20 circuits for each utility) with sub-cycle sampling rates

Include circuits with different penetration levels of DG installed

- look for comparative impacts of DG
- obtain baseline feeder behavior data
- attempt typology of distribution feeders in California
- use data to validate existing distribution circuit models
- use data to develop and validate models of new components
- identify data resolution useful for routine monitoring efforts (Phase III)



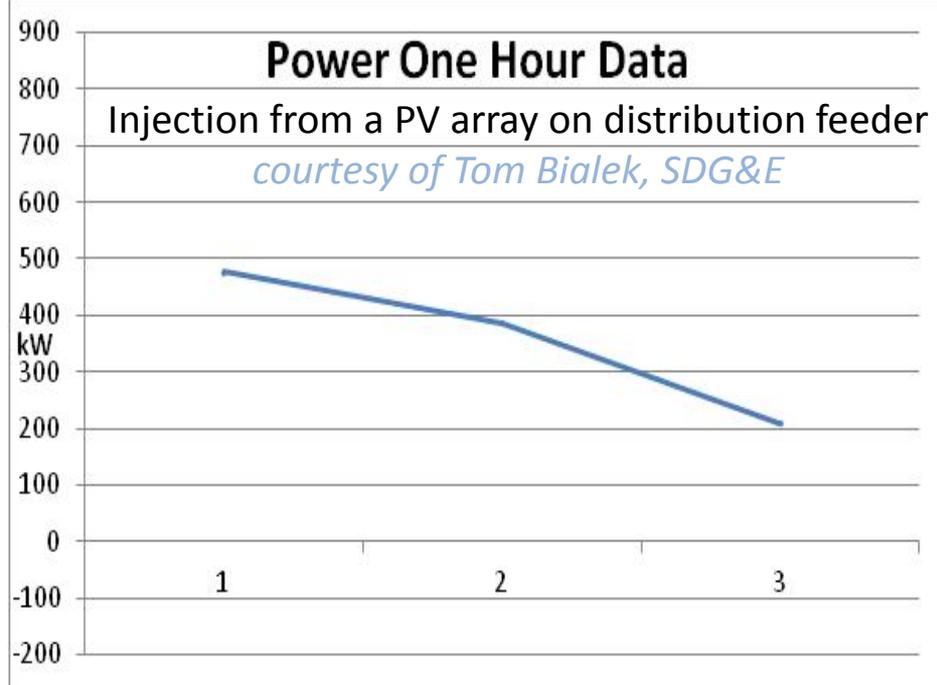
California Institute for
Energy and Environment

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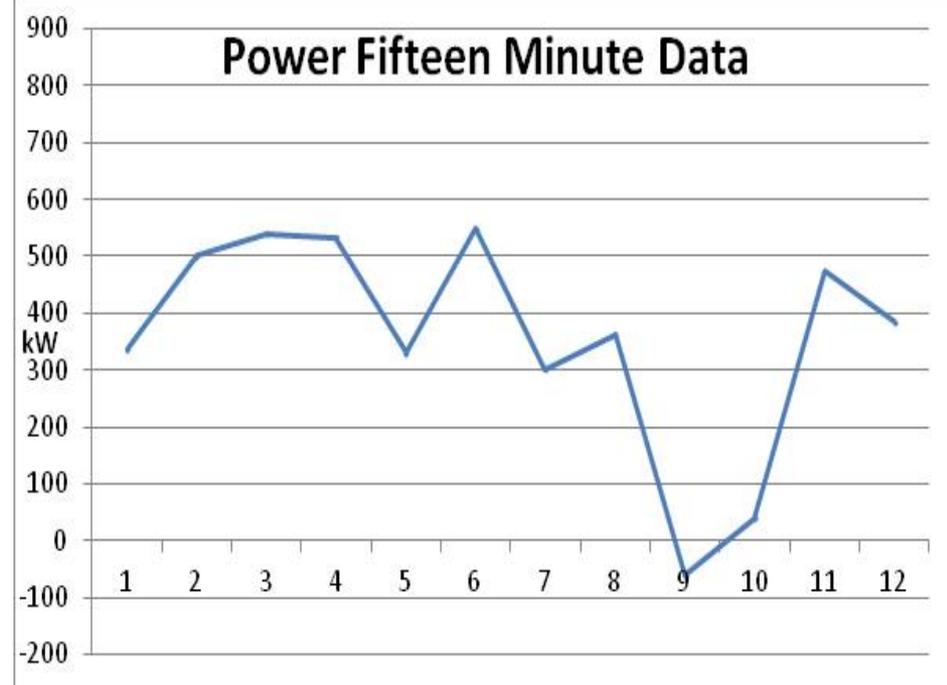
Power One Hour Data

Injection from a PV array on distribution feeder

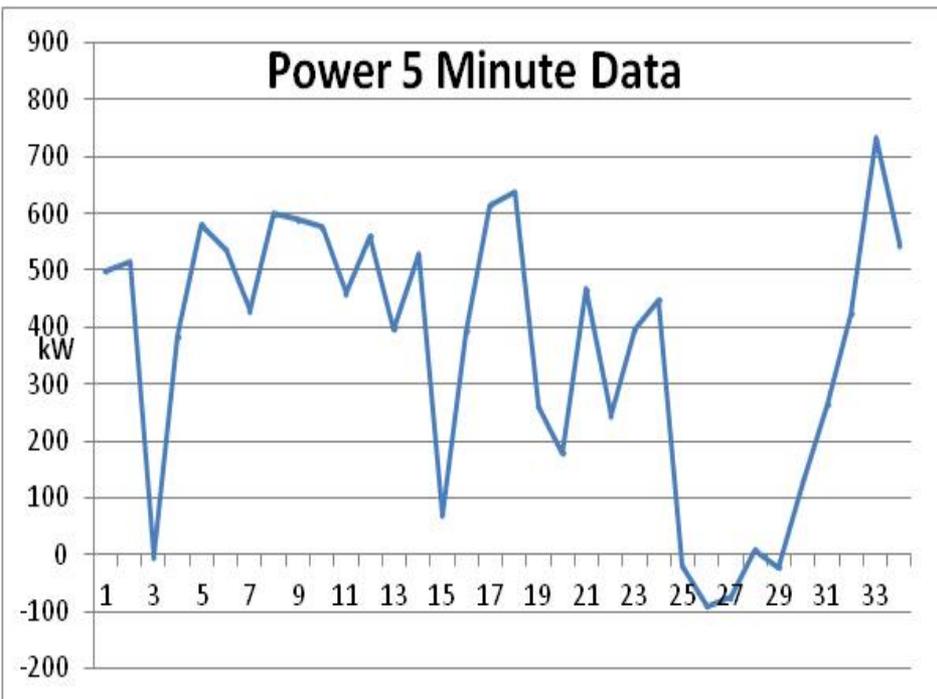
courtesy of Tom Bialek, SDG&E



Power Fifteen Minute Data



Power 5 Minute Data



Power 1 Second Data

