

Benjamin L. Norris

Education

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| 1985 | | Stanford University – B.S. Mechanical Engineering |
| 1985 | | Stanford University – B.A. Psychology |

Professional History

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| 2011 – present | | Sr. Consultant, Clean Power Research, Napa, CA |
| 1997 – 2011 | | Principal, Gridwise Engineering Company, Martinez, CA |
| 1985 – 1997 | | Mechanical Engineer & Research Associate, PG&E, San Ramon, CA |

Professional Highlights

- Managed numerous Clean Power Research consulting projects in PV value analysis and fleet production modeling. Technical areas include value of solar, fleet behavior and forecasting, PV variability, retail bill calculations. Managed the national PowerBill electric rate database.
- Provided engineering and analysis expertise for advanced renewables and electricity storage technologies to research organizations, financial institutions, utilities, energy service companies and manufacturers. Key technology projects have included a 500 kWh zinc-bromine battery, a 1 MW PV/hydroelectric hybrid project, a 100 kW advance flywheel for frequency stabilization, a 100 kW sodium-sulfur battery, a 1 MW VRLA lead-acid battery system and 2 MW – 10 second power quality system.
- Provided technical and marketing consulting to technology development companies, including a manufacturer of advanced zinc-bromine battery systems; a developer of advanced high-speed composite flywheels; and a leading installer of grid-connected PV systems.
- Served on the Board of Directors (Treasurer) of the Electricity Storage Association, a non-profit organization of utilities, researchers and technology companies.
- Led nationally-recognized research projects in energy storage. At PG&E's modular generation test facility, conducted performance tests of advanced battery systems, power conversion equipment, micro turbines, and fuel cells. Performed applications and economic analysis of PV, battery energy storage and solar thermal power systems. Developed utility operating and maintenance tools for dynamically calculating ampacity ratings of overhead conductors and for using advance infrared radiometric systems at substations and high-voltage transmission lines.

Other

- Licensed Professional Engineer (Mechanical), State of California, Certificate No. 26220.
- Certified infrared thermographer.