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PRESENTED BY THE WATERLOO INSTITUTE FOR SUSTAINABLE ENERGY

Monday, October 1, 2012
5 - 6 pm
DC 1304

HYBRID PHOTOVOLTAIC POWER SYSTEMS AND RURAL MICRO GRIDS: LESSONS LEARNED AND CASE STUDIES IN DEVELOPING COUNTRIES

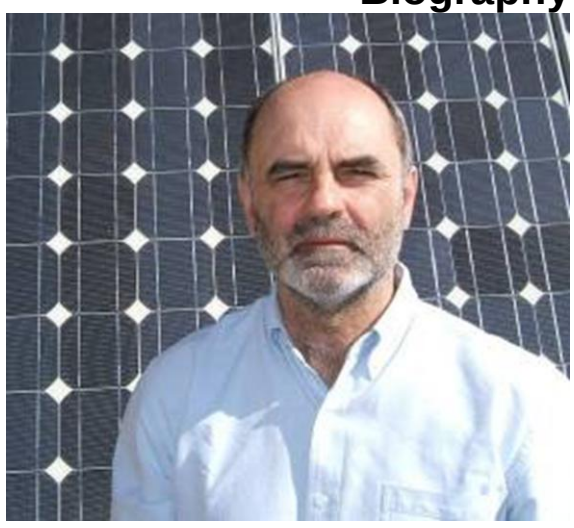
Xavier Vallvé, International Consultant and Partner

Trama TecnoAmbiental, Barcelona – Spain

Grid extension is often highly costly or is unlikely to be accomplished within the medium term in many rural and remote areas. In such situations, multisource electricity (hybrid) micro-grids based on renewable energy can be used to electrify households and local shops for compact villages and hamlets.

Based on the implementation of solar PV hybrid rural electrification solutions within remote areas of Spain and micro grid projects around the world, the lessons learned from these projects, provide insights on key issues that must be considered to successfully scale-up. Implementing sustainable renewable energy micro-grids (typically < 100 kW) involves complex technical, financial and organizational issues which must address the end-users and their needs, capacity building and training, tariff and subsidy setting, and institutional strength. These issues and some actual implementations will be presented and discussed in some detail in this presentation.

Biography



Xavier Vallvé graduated in Mechanical Engineering at the University of Waterloo (1977), with a M.Sc. degree in Applied Science (1979). In 1986 he co-founded the engineering and consultancy company Trama TecnoAmbiental, S.L. in Barcelona, Spain where he is a partner.

He has large experience in renewable energy rural electrification projects for distributed generation both grid-tied to the national grids and autonomous RE hybrid technology for islands and isolated villages. This involves complementary and interdisciplinary skills in economic, social and management aspects as well as engineering experience.

In RE distributed generation connected to island and weak national grids and micro grids, he has been involved in feasibility studies, engineering, project management and commissioning of many PV micro grids in isolated villages in Africa, Asia and South America as well as islands like the Galápagos atoll (Ecuador), the archipelago of Chiloe (Chile) and Tarawa and outer islands in Kiribati (Pacific), Menorca and Formentera (Mediterranean), Cape Verde (Africa), etc. He has also been an active member in international codes and standards committees on this subject (IEC TS62257, IEC TC82, IEA PVPS guidelines and others).

He has been project director or lead consultant for private and government clients and also for projects by UNDP, UNOPS, UNESCO, UNEP, AECID, IDB, WB, EC and other agencies.

He is director and lecturer of the Master's degree "Master en Ingeniería y Gestión de las Energías Renovables" at IL3 (University of Barcelona). He is member of the Scientific Committees of the "PV hybrid and Mini-grids Conference" and the "European Photovoltaic Solar Energy Conference and Exhibition".

He is member of several international standards committees and a chartered engineer at the professional Association of Industrial Engineers of Catalonia.

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