



Consortium for Electric Reliability Technology Solutions
Berkeley 2005 Symposium on Microgrids
June 17, 2005
UC Berkeley Faculty Club, Berkeley CA



Participant Contact Information and Research Activities

Name	<i>Johan Driesen</i>
Affiliation	<i>K.U.Leuven – ESAT/ELECTA</i>
Contact Information	Email: <i>johan.driesen@esat.kuleuven.be</i> Phone: <i>+32/16/32.10.20</i> Address: <i>Kasteelpark Arenberg 10, B-3001 Leuven, Belgium</i>
<p>What is your working definition of a microgrid? How is it different from the following working definition?</p> <p>A microgrid is an integrated power delivery system consisting of interconnected loads and DER which, as an integrated system, can operate in parallel with the grid or in an intentional island mode. The integrated DER are capable of providing sufficient and continuous energy to a significant portion of the internal demand, and the microgrid possesses independent controls and can island and reconnect with minimal service disruption.</p> <p><i>A microgrid is an electricity distribution grid with a maximum autonomy from the central 'backbone grid'. This means not only that maintains the fundamental (instantaneous) power balance between produced and consumed electrical energy, accounting for the losses and exchanges with storage; it also internally provides all necessary ancillary services such balancing, stabilizing and providing adequate quality and reliability of supply.</i></p>	
<p>Briefly describe your research activities on microgrids.</p> <p><i>Various national and international (EU) projects on distributed energy resources (photovoltaic, wind, CHP) with a strong focus on grid interaction issues, power-electronic based hardware, grid control issues and economics.</i></p>	
<p>Please note which of the following technical issues your research addresses (if any):</p>	

Intentional islanding and resynchronization	Yes
Protection within the microgrid	Yes
Voltage control within the microgrid	Yes
Frequency control within the microgrid during islanded operation	Yes
Fast load sharing among microsources (for load changes faster than the ramping rates of the prime movers)	Yes
Heat load matching and load prioritization	No
Economic dispatch of assets	Yes
Meeting environmental constraints	Yes
Other	<i>Please be specific</i>