



**Northern
Reliability**

T E L E Q U I T Y

Microgrids in Vermont

Presentation to

Vermont System Planning Committee

March 14, 2012,
DoubleTree Hotel, South Burlington, VT



Northern Reliability designs, builds, and services ultra-reliable stand alone power systems for industrial, commercial, government, and local community sites and customers worldwide incorporating conventional and renewable energy technology.



Keys to Our Success

- Focus on Core Competency
- Collaboration
- Build Momentum (The start is the hardest part)
- Technology evolving in “Smart Grid” (Microgrid) direction
 - Generation
 - Transmission
 - Distribution
- Funding from Various Stakeholders

} “Smart Grid”

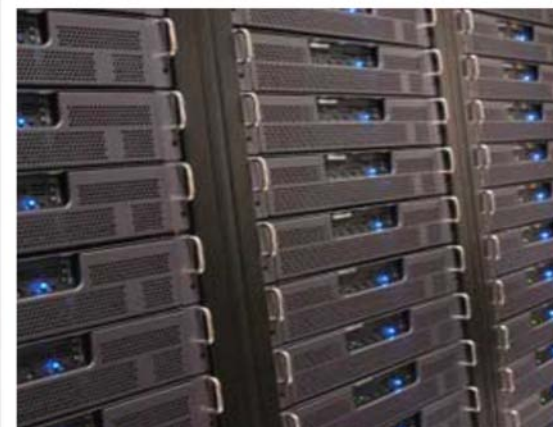
TELEQUITY

Transformation and growth of businesses
through participation in management & ownership

We work with businesses to implement strategies that secure their growth and significantly increase their value.

We started in 1993 with clients in the telecommunications industry and have since expanded to the pulp and paper, electric energy, social networking, electronic commerce and business education industries.

Our clients are based in North America and abroad; our growth model is applicable to most industries.



Microgrids Today

Designed to augment the bulk electricity grid and improve the quality, reliability and security of service; act as controllable power supplies or loads in a power grid network; integrate distributed renewable generation, customer loads and the utility grid

- Several “Island” Systems Exist
- Encouraged by Massachusetts, Illinois, California, Vermont, New York, Federal Department of Energy (DOE)
- Research, Standards and Support by NREL, CERTS, Private R&D Facilities





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Microgrids in Vermont – The Waitsfield Experimental Unit

- Promoted by Northern Power
- Supported by WEC, NREL, DOE, State Energy Office
- 350 KW Unit; Completed 2005, PSC Approval January 2007
- Connected to grid; Served 17 homes. 5 businesses
- Disrupted by Northern Power Bankruptcy Filing 2008





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Our Mantra

- Vermont has a strong reputation for protecting the environment, consumer rights and taking initiative
- Microgrids have definite benefits in terms of system reliability, opportunities for renewable energy and customer value
- The Waitsfield Microgrid was an excellent cooperative initiative by a Vermont based business, a Vermont utility, the State and the Federal Government.
- The experiment was inconclusive for reasons not related to the project.
- Northern Reliability and Telequity would like to continue the fine work started by the Waitsfield partners
- Northern Reliability and Telequity believe that all the “partners” benefit through cooperation: costs, quality, expertise, sense of accomplishment



T E L E Q U I T Y

Next Steps

- “Partners” to embrace Microgrids as a solution to electric energy challenges
- “Partners” to discuss potential opportunities in Vermont and look into reviving the Waitsfield opportunity as well, perhaps as a “test and R&D site
- “Partners” to give Vermont its place as a strong and modern provider of electric energy



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Conclusion

- Our goal is to leverage the core competencies and exigencies of all stakeholders and derive benefits for all
 - Optimizing the “system” (regulator)
 - Financial stakes
 - Reliability
 - Protection
- Our joint mission is to protect and optimize the grid”
- We also see financial benefits (\$) for all stakeholders
 - All those the grid is intended to serve e.g. wholesale and retail customers
 - Velco, regional and national entities e.g. NERC, NPCC, ISO NE, All 501(C)6 entities (non-profit corps. set up for a specific purpose)



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