Pacific Northwest Energy Independent Communities
Executive Summary

The Institute for Environmental Research and Education (IERE) has recently completed a study of the engineering, economics and social aspects of taking a community to energy independence, defined as operating on locally-produced renewable energy on a net basis. As a model, the study used the Vashon-Maury Island community, a grid linked community of 11,000 in central Puget Sound. The results are fully applicable to any Pacific Northwest community, and many of the results are applicable to the entire developed world.

The design of the study examined energy independence potentials over the time frame of the next 10 years, looking at three scales: the individual building, the neighborhood and the community as a whole. Each scale proved to economically viable within the 10-year timeframe.

The study found that

- Fossil energy costs are rising at a rate of four to 13 percent per year, depending on the fuel type;
- Renewable energy generation costs are falling about 2.5% per year;
- Application of existing energy efficiency technologies such as Energy Star appliances, insulation, weatherization, compact fluorescent lighting, and heat pumps can reduce the building-related energy use by over 70%;
- Achieving these savings will require a disciplined, professional, comprehensive application of the technology, but the Net Present Value of energy savings on Vashon-Maury Island is $95 Million for a $35 Million investment;
- Once conservation is in place, the island can be powered by about 15 wind turbines, backed by biomass generators, solar photovoltaics and vanadium batteries with a total capital cost of less than $40 Million;
- Economic arguments relevant to the decision-maker support moving to energy independence at the household and the neighborhood level;
- Surveys Indicate that the Vashon-Maury island community supports the concept of renewable energy, including wind turbines, but wealthy individuals off-island express concern with visual pollution;
- Transportation energy use is more difficult to address, because with the exception of biodiesel, no generally available automobiles are available that run substantially on renewable energy;
- Economic development from implementing the vision of energy independent communities includes development of many small businesses, expansion of community colleges, and if fully implemented state-wide would provide about 20,000 jobs and increase the membership of the building trades by over a third.
- State and local governments can do a great deal to support the move to energy independence.

We conclude that moving to energy independence is not only good for the environment and the economy but (with the exception of transportation issues) is achievable and economically attractive within 10 years.

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