

Energy Independent Communities: Briefing for 34th District Democrats

Rita Schenck
Institute for Environmental Research
and Education

9 November 2005
206-463-7439 rita@iere.org

What is IERE

- A not-for-profit 501c3
- Located on Vashon, but with a national and international presence
(American Center for Life Cycle Assessment)
- Dedicated to fact-based environmental decision-making
- Mostly scientists and economists
- Programs in energy, agriculture, transportation and green buildings

What Energy Independent Communities Program is

- An attempt to prove that energy independence is possible
- Defined energy independence on a net basis:
 - Communities make as much energy as they need locally from renewable resources
 - Energy exchanged between communities through the grid

Studies to Date

- Using Vashon as a model
 - 2002: energy independence physically possible
 - 2003: energy independence politically possible—77% of islanders want it
 - 2005: energy independence economically attractive



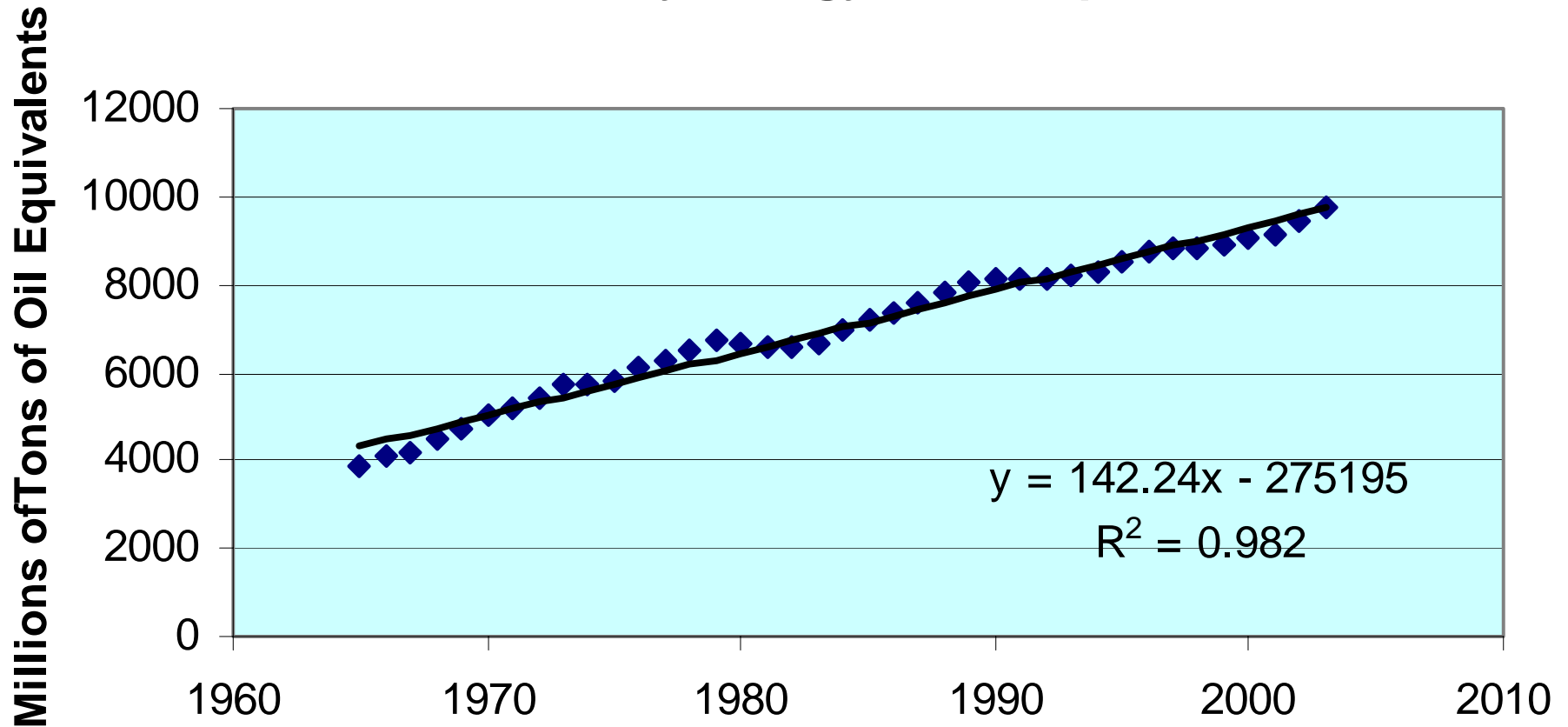
Design of 2005 Study

- Most economically conservative approach taken
- Projected costs of fossil and renewable energy
- Evaluated existing technology costs, using Vashon as the test case to be as realistic as possible
- Reviewed work done elsewhere for community energy conservation
- Evaluate NIMBY-ism and willingness to pay for renewables & conservation
- Develop a plan over the next 10 years, looking at three scales: individual building, neighborhood and entire island

How this differs from other studies

- Community is beneficiary
 - Not utility
 - Not energy companies
- Comprehensive look
 - As “real” as possible
 - A real community, real technology
- No macroeconomic assumptions
 - Statistical projections of prices
- Transport not included because lack of commercial solutions makes projections impossible

World Primary Energy Consumption



Energy Increase Rate Percent per Year

Gasoline 4.5

Residential NG 8.8

Wellhead NG 13.5

City NG 10.0

Wellhead LNG 12.0

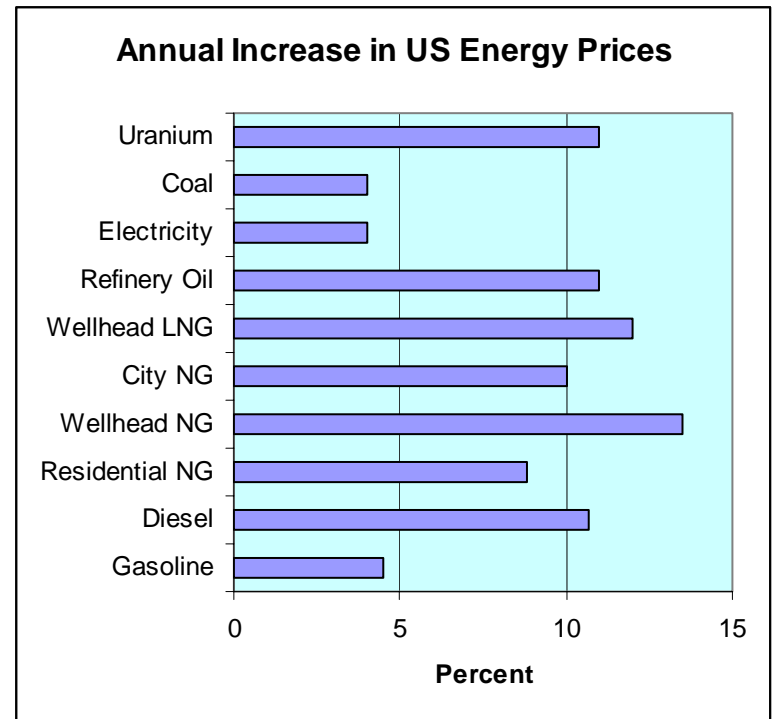
Refinery Oil 11.0

Electricity 4.0

Coal 4.0

Uranium 11.0

Renewable Energy Costs are Decreasing 2.5% per Year



Based on statistical projections of 1999-2005 data

Plan for Vashon Island

- Conserve energy: NPV = \$95 Million
 - Conservation cost: \$35 Million
- Use savings to install Renewables
 - 15 wind turbines, 12 biomass generators, solar
 - Total cost <\$40 Million
 - Total savings \$55 Million
- Timeline 10 years



What this means in jobs on Vashon

- PUD Staff (4)
 - Manager, engineer, bookkeeper, technician
- PUD Contractors (26)
 - Technicians installing insulation
 - Electricians & HVAC specialists installing & maintaining heat pumps
 - Technicians maintaining wind turbines
 - Heating specialists operating biomass systems
 - Electricians installing solar
- One-time Building Contractors (~10/yr, 7 yrs)
 - Installing wind turbines
 - Installing biomass systems

Where else can this work

- Wherever communities are grid-linked (essentially entire developed world)
- Wherever there is infrastructure that addresses conservation as a ***consumer rather than a utility*** opportunity for communities

What this means if applied across Washington State

- 20,000 permanent jobs in the trades
- 7,000 jobs in renewable energy systems installations
- Overall decrease in the cost of living
- Cleaner air
- Eliminate reliance on fossil fuel
- Improve balance of payments



Legal Structures for Energy Generation

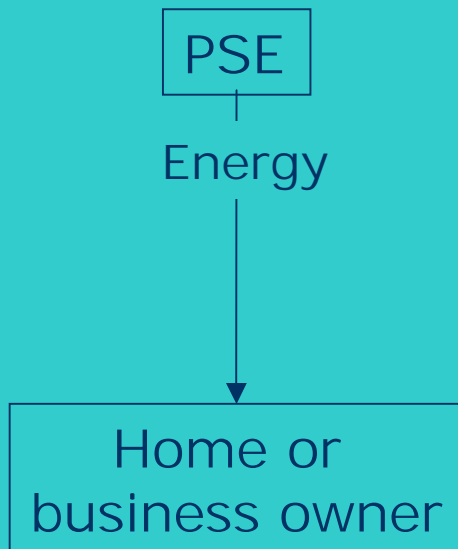
- Private action (on or off-grid)
- Independently owned utility (like PSE)
- Cooperative
- Public Utility District (like City Light)

Timeline for the PUD

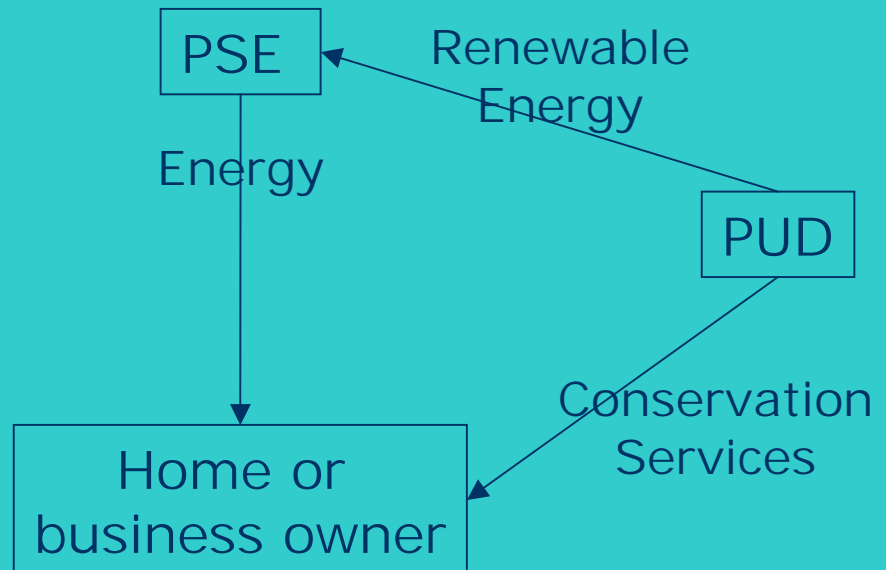
- Boundary review board & County Auditor must approve language & boundary (submit Dec/Jan)
- Need to collect signatures in 1st Quarter 2006 (est. 800-900)
- King County Council passes resolution
- Elections commission must arrange for at-large elections for 3 commissioners
- Elections in November 2006

How PUD Works

Current Situation



With a PUD



Financial Implications

Current Situation

PSE	\$1.00
PUD	<u>0</u>
Total	\$1.00

With a PUD

PSE	\$0.35
PUD	<u>0.30</u>
Total	\$0.65

The average household saves \$300/year
No upfront costs: participation voluntary

Transportation Solution

- Plug Hybrid cars
 - Run on grid power 90% of the time, fossil fuel or biodiesel the rest of the time
 - Big 5 automakers ignoring opportunity
 - Austin trying to make a market happen through “soft orders”
 - Wenatchee driving advanced vehicle initiative, partnering with SSCC & others

Help Needed

- Islanders, attend our informational meeting, 16th November at 7:00 McMurray Library
- Policy support for energy independence at state level
 - Change how utilities are funded– focus on grid stabilization, not energy delivery
 - Reinstate property tax relief for net metered resources
- Policy & financial support at state level for plug-hybrid cars
 - Austin plug hybrid initiative
 - Wenatchee advanced vehicle initiative