



## **POLICY NOTES ON LONG RANGE ENERGY PLANNING FOR THE SOUTH WILLAMETTE VALLEY**

The combined effects of peak oil and climate change will require significant changes in the development and use of energy resources in the South Willamette Valley. If appropriate changes are not made, economic vitality and the quality of community life will be severely diminished. The conclusions of the Hirsch Report suggest that it is already too late for a smooth transition to a viable energy path to occur. So this task now needs to be taken up in an expedited fashion. This will require committed leadership, community support, mobilization of resources, and clarity of vision.

This policy paper presents brief conceptual notes on a coherent vision for securing sustainable, renewable energy for the South Willamette Valley. It does not address how to obtain the political commitment, public support, or capital investment necessary for this vision to be implemented. It is hoped that the articulation of a viable vision can help mobilize the community to take up solution-oriented initiatives that realistically respond to the energy crisis that is upon us.

### **DEMAND REDUCTION**

Demand reduction should continue to be the central objective of long-range energy planning at this time, as costs for new generation are likely to continue to climb. The following observations can be made about opportunities for effecting demand reduction:

1. Additional gains to be had from insulation and weatherization of buildings are limited.
2. Incentives to encourage demand reduction are increasingly well established for:
  - efficient heating systems
  - solar hot water heaters and PV systems
  - energy efficient appliances
3. Use of incentives to promote reduced energy use through new technologies should be explored. Examples include:
  - LED ultra low wattage lighting
  - appropriate technology appliances such as solar food dryers, solar cookers,

solar refrigerators, and attached solar green houses (where viable)

4. There are significant gains that could be gained through further energy conscious modifications to building codes. (Sebastapol, CA, by way of example, does not issue building permits unless construction documents demonstrate adequate attention to incorporating aggressive energy efficiency features.)

- New housing should be required to include passive solar design features.
- New housing should have roof pitches and orientation optimal for locating solar water heaters and PV arrays.
- Housing developments should maximize energy efficiencies through siting that protects solar access and protects houses from heat loss.
- Houses having a large floor area should pay mitigation fees for extra energy usage.
- LEED type standards should become mandatory in new housing.
- A transitional strategy to requiring zero net energy housing should be set in place.

## **DIVERSIFIED, RENEWABLE, LOCAL ENERGY SOURCES**

A diverse mix of sustainable, locally available energy sources should be developed. These energy sources should be tailored to intended use, to the location of use, and to the season of use. And they should be developed in a way that creates balance in the overall system.

The South Willamette Valley is fortunate to have a wide variety of locally available, renewable energy sources that have potential for development. Some would likely prove viable for wide-scale development; others would only be viable in minor niche situations. But there should be recognition that the energy system will gain resiliency from developing diverse energy generating potentials – so long as the energy sources developed do not operate at a loss.

Listed below are energy sources that have promising potential for local development:

- wave generators [promising prototype has been developed by OSU researchers]
- biomass generators [in extensive use in Scandinavia]
- charcoal fueled generators [cleaner burning than wood biomass]
- methane generators [located at dairy farms]
- wind generators [if viable to locate at select coastal sites]
- PV solar arrays [including incorporation in skins of new office buildings]
- parabolic solar steam generators [a simple technology for on-site electricity]
- cogeneration generators and heat
- biodiesel generators using crops such as silkweed and meadowfoam
- biodiesel generators using algae [production combined with biomass generators]
- microhydro generators [good rainy season complement to PV systems]

- river current hydro generators
- hydrogen [if efficiently produced with seasonal surplus energy—hydro in winter]
- alcohol [efficiently produced using seasonal surplus solar energy]

Some of the above energy sources produce fuel for combustion engines, rather than electricity. Local energy utilities should evaluate the compatibility of producing fuel in addition to producing electricity. For some energy needs, sustainably produced hydrocarbon fuel can be substituted for electricity, thus freeing electrical energy for other uses.

## **ADDITIONAL FACETS OF AN ENERGY PLAN FOR THE SOUTH WILLAMETTE VALLEY**

Strategies should be implemented to extensively develop cooperative and small, private energy generation facilities that would contract to sell the energy they produce to EWEB/EPUD. This would be an extension of the arrangement in which home owners can establish net metering contracts with the local utility.

EWEB/EPUD should provide special support in the form of, for example, capital access, marketing help, research assistance, and tax incentives, to local enterprises producing sustainable energy generation products, energy conservation products, low energy appropriate technologies, etc. In viable situations, local utilities could become investors in such enterprises.

Energy intensive industries should only be permitted to locate in the area if they produce essential goods for which there are no good substitutes.

Securing building permits should be contingent on optimizing solar roof exposure for solar water heaters and PV arrays.

As the local community is likely to become increasingly stressed by rising oil costs, EWEB/EPUD should assess and promote opportunities to substitute locally generated electrical energy for petroleum energy. Generator aided bicycles and Gizmo type minicars are examples of vehicles that can efficiently run on electricity, rather than petroleum.

Surplus energy produced at peak generating times should be used to produce biofuels or hydrogen fuels, and not marketed outside the region.

Local energy utilities throughout the larger region should be publicly controlled. Where they are presently in corporate hands, they should be converted to public utility districts.

## SUPPORT SERVICES FOR ENERGY COOPS

EWEB/EPUD could provide support services for local energy cooperatives, helping them with such aspects of development and operation as:

- planning and installation assistance
- assessing of the costs of production
- assuring that there would be a market for energy produced
- promoting research to develop increased productivity
- providing capital assistance

EWEB/EPID would help agro-industries & forestry industries in rural areas establish net-metered, on-site energy sources, so that energy is generated close to its place of use and so that investment in energy grid infrastructure could be minimized.

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