

Market signals cause wrong turn at EWEB

Due to a revenue shortfall, the Eugene Water & Electric Board recently increased rates and suspended its financial incentives for conservation and renewable energy. EWEB's dilemma is indicative of big changes in the energy sector. It also raises important questions about the future of electricity in Eugene, and EWEB's role.

The advent of cheap natural gas made available by new drilling and extraction technologies has reduced the wholesale price of electricity. This reduced EWEB's profits that historically came from selling surplus power on the wholesale market. Reduced profits contributed to EWEB's decisions to increase rates and suspend incentives.

Natural gas, however, is a fossil fuel. Proponents claim gas can help fight climate disruption because burning it releases about half as much carbon dioxide as gasoline and oil, and dissipates faster in the atmosphere. This is folly.

Numerous studies have shown that producing, distributing, and burning natural gas produces more greenhouse gases than oil or coal per unit of energy. This is because methane is released in the process of producing natural gas — and methane is a greenhouse gas that traps at least 20 times more heat than carbon dioxide. The amount of methane in the atmosphere today far exceeds the natural range seen over the past 650,000 years.

The expansion of natural gas therefore affects not only the finances of EWEB and every Eugene resident, it also adds to the climate crisis.

As climate disruption worsens, society will realize that the widespread use of natural gas and other fossil fuels must end. In the meantime, because it minimizes emissions and increases our resilience to climate impacts, the transition to distributive renewable energy will pick up steam.

Conventional energy systems are powered by fossil fuels, hydroelectricity and other sources that are found only in limited geographic areas and require huge, costly infrastructures to deliver the power to distant end users.

Distributed renewable energy systems, in contrast, are composed of hundreds of local facilities, each generating electricity from the sun or other widely available resources to meet their own energy needs while sharing surpluses with others.

A central task of the shift to distributed energy involves transforming the majority of residential, commercial and industrial buildings into mini-power plants. In Eugene this will primarily mean installing solar thermal systems to heat water and solar photovoltaics to produce electricity.

According to EWEB, there are currently 1,292 solar water heaters and nine solar pool heaters in Eugene. There are also 237 net-metered residential PV and 41 net-metered commercial PV systems, which use the power generated on site and sell the surplus to the grid.

In addition, 38 "generation" systems have been installed. These are stand-alone solar PV systems that send electricity directly into the grid without using any on site.

Expanding distributive energy systems to the majority of buildings in Eugene with ample solar access will be a major boon to the local building and solar industries and to the economy as a whole.

To allow hundreds of homes, shops, offices, factories and public buildings to use, store and share their surplus electricity, the local electrical grid must be reconfigured into a smart intergrid that mirrors the way the Internet works by facilitating bidirectional electrical transmission.

As distributive systems expand across the West, the centralized electrical grid will become more of a backup, filling the power gaps created by the intermittency of renewables rather than serving as the primary source of energy. Distributive energy systems will also keep the lights on when heat waves or other climate impacts cause the local or regional grids to go down.

These developments will require EWEB to develop new service and revenue models. For example, producing negawatts, not megawatts, by reducing wasted energy far beyond what has been achieved to date by EWEB's efficiency programs will become a top priority.

Promoting the installation of hundreds more local solar and other renewable systems will also become one of EWEB's primary goals. So will managing the exchange of locally generated energy to ensure that supply and demand are equitably balanced to address changes in weather patterns, smooth out peak demand, and deal with other issues.

Distributive energy is just getting off the ground in Eugene. But solar and other renewable technologies are rapidly advancing, and costs are dropping quickly. A concerted effort to overcome the remaining technical, financial and policy obstacles will lead to a rapid expansion of distributive energy in Eugene, and around the nation.

Today, the glut of cheap natural gas has turned programs to reduce energy consumption and expanded renewables into financial problems. In the future, the pressure to respond to climate disruption will make them top priorities. Together, they will require EWEB to redesign its entire business model.

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