



Situation Analysis

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Energy is in the headlines: Oil at \$100 a barrel, global warming, Wal-Mart and compact fluorescent light bulbs (CFLs), 58 inch plasma screen TVs, plug-in hybrids, SmartGrid, China.... All of these seemingly disconnected headlines have one thing in common... energy. And each is riding a trend that could hurt or help the development of a more energy efficient Northwest.

The Northwest Energy Efficiency Alliance (NEEA) is operating in a world where these trends and many others will be playing out on the local, regional and global stage. NEEA will need to have a both a strategic plan that is forward looking and reflects these trends, as well as an ongoing process to anticipate new trends so as to create a platform to help the Northwest maintain a leadership role in the efficient use of energy.

The following are just a few of the trends in the Northwest, Western Region, and National/International arenas that will likely impact energy efficiency in the near future:

Northwest

- ***Constrained conventional energy supply and delivery point to efficiency as the resource of choice.*** Over the last decade, northwest regional energy loads have grown at the same time that rising costs and environmental issues have combined to shrink the availability of traditional energy generation options. This has put energy efficiency in the enviable position as the most likely resource to fill the gap. This expectation has created demand from utility executives for more efficiency resources to be acquired at an accelerated pace.
- ***Changing regulatory and political environment encourage utilities to acquire all cost-effective efficiency.*** There are a number of significant regulatory and political trends that are shaping the market for efficiency. A number of regulatory or legislative actions are pushing utilities to acquire all cost-effective efficiency potential as quickly as possible. Examples include Initiative I-937 in Washington State and legislation in Oregon SB 838 requiring funding beyond Bonneville Power Administration (BPA) or public purpose charges to include all cost-effective energy efficiency.
- ***Reallocation and pricing of the Federal Power System provides natural incentives to all Northwest utilities to pursue lowest cost resources including energy efficiency.*** BPA is proposing to restructure the way that it allocates and prices power from the federal power system. This revised “tiered” rate structure will expose all of the region’s utilities to market rates for new electric power resources for at least a portion of their

load. While this is nothing new for many utilities, a large number of public utilities will be faced with market prices for the first time in their history. This change should create a significant incentive to pursue low cost resource alternatives including more energy efficiency in order to maximize use of low-cost federal hydropower and minimize higher-cost market purchases of energy.

- ***Increased goals and funding for local utility efficiency programs is creating significant demands on energy efficiency delivery infrastructure.*** As a result of the previously described trends, many utilities are ramping up their energy efficiency program goals and budgets. Some of the largest utilities in the region have 2008 goals that are 20% to 400% higher than 2007. Overall regional spending for 2008 is anticipated to be approaching \$300 million. Unfortunately, this ramp-up by utilities has not necessarily been met by a corresponding increase in the number of trained, qualified professionals that can deliver efficiency resources.

West Coast

- ***Increases in Western region efficiency programs creates competition for energy efficiency delivery resources.*** The Northwest is not alone in ramping up efficiency program spending. California's expenditures on energy efficiency and demand management activities now exceed \$1 billion annually. Other western states including Nevada, Utah and Arizona also have significant increases in efficiency program goals and funding. This level of activity is creating significant challenges for the energy efficiency delivery infrastructure for the western region. With a shortage of available efficiency capability in a market with strong demand, available resources will migrate to markets with the highest payment structures. For example, many companies are re-directing resources to meet demand generated by California utility efficiency programs. This has and will likely continue to have a significant impact on the ability of the Northwest to deliver energy efficiency.
- ***Western state collaboration creates new opportunities for efficiency.*** On the other side of the coin, there are several western regional collaborative efforts that create an opportunity for more efficiency to be realized in the region. For example, the Western Governors Association recently announced the Western Regional Climate Action Initiative to reduce greenhouse gasses that has resulted in a number of joint activities and initiatives from the five signing states. Another example is the new Western Cooling Efficiency Center that is dedicated to producing high-efficiency cooling equipment tailored to the hot-dry climates of the western US. These present the possibility of coordinated regional efforts to

develop new technologies, harmonizing energy code requirements, or standardize specifications for program delivery across state boundaries.

- **Concern over peak load increases funding for programs targeted at reducing or controlling loads during critical system shortages.** For a short time each year, the west coast power system is driven to its limits by air conditioning loads that can rise dramatically during seasonal heat waves. The 2001 power crisis shocked the system when inadequate power supply reserves collided with an unusual heat wave. The ripples from this collision drove prices upward for the entire western power system and caused a renewed interest in energy efficiency and spurred a new level of interest in peak load management efforts. While peak load management is often synergistic with efficiency goals, in some cases it can be counter productive. For example, ice-storage systems shift peak load from daytime to nighttime but may actually consume more energy than a more efficient air-conditioning system.

National/International

- **Concerns over global climate change creates new initiatives in energy efficiency.** Concerns over global climate change are driving an increased focus nationally and globally on energy efficiency as one of the most cost-effective ways to deliver reductions in greenhouse gas emissions. While renewable energy is a key solution, energy efficiency is the near term practical alternative that is in some cases the only real option for a significant response to the challenge of reduced greenhouse gas production.
- **New federal legislative focus on efficiency is shaping the way markets will deliver efficiency in the future.** Energy efficiency is now the focus of federal legislation as evidenced by the recently passed energy bill. There are many components to this bill that will have long-range implications for efficiency. These include tax credit provisions, new standards for general service lighting, and other new initiatives for spending on research and development.
- **Demand for sustainability creating new demand for efficiency.** Sustainable business practices are fast becoming mainstream, especially in the construction industry as evidenced by the rapid rise of the Green Building Council's Leadership in Environmental and Energy Design (LEED) standards for buildings. As this movement has matured, it has embraced energy efficiency as a core requirement for designation as sustainable. As standards such as LEED move closer to requiring net-zero energy consumption, efficiency will become even more important as a means to create these types of buildings at a reasonable cost.

However, this will challenge conventional efficiency product suppliers and service providers to work together to create integrated energy design solutions.

- ***Retailers as change agents dramatically affect sales of energy efficient products.*** Major retailers such as Wal-Mart have begun to be aware of their ability to influence markets and the environmental consequences through the things that they sell, not just their operational footprint. This trend opens up new opportunities for collaborative partnerships that can significantly alter markets for efficient products and services. When a very large retailer such as Wal-Mart makes such a decision, it can send shockwaves through the whole supply chain and dramatically increase sales of energy efficient products while lowering costs to the consumer. As an example, the recent surge in CFL sales is due in part to the decision by Wal-Mart to aggressively market CFLs in their stores.

General

- ***Traditional boundaries between electricity, natural gas and renewable energy sources are dissolving at both the end-use and new supply of energy.*** Much of current energy policy is based on a view of energy sources that assumes there are clear boundaries between the appropriate uses of these fuels. However, both technology and environmental issues are challenging that view. For example, electricity and natural gas are now inextricably linked on the supply side as new electric generation is dominated by natural gas fired combustion turbines. Conversely, a new generation of heat pump technologies are challenging the conventional wisdom of natural gas as the most efficient heating source at the end use. At the same time, distributed generation makes efficient use of natural gas to produce both heat and electricity at the point of use. Similarly, sustainability initiatives like the American Institute of Architects 2030 challenge are motivating the end-use market to create net-zero energy consuming buildings through the integration of renewable technologies at the same time that renewable portfolio standards are requiring utilities to meet large fractions of their loads with renewable energy sources. While the traditional boundaries between energy sources are blurring, energy efficiency is still in most cases a much less expensive alternative; but one that may find it difficult to compete for funding against the clamor of competition between primary energy sources.
- ***Multiplicity of messaging is creating market confusion.*** With all of the renewed interest in efficiency and the new connection to sustainability and climate change comes a whole new cast of players seeking to promote efficiency to end consumers. While this can be a good thing, in a world

full of marketing messages, this multiplicity can create confusion and inaction on the part of consumers. For example, ENERGY STAR is no longer at the leading edge of many consumer markets and therefore has lost some of its value as a differentiator in the Northwest. At the same time new “brands” like “LEED” and “BuiltGreen” have begun to grow in significance but not necessarily equating directly to the same level of efficiency as ENERGY STAR. The entry of retailers like Wal-Mart has further complicated the messages that are being sent to consumers. While in one sense this multiplicity of messages indicates the scope of the overall movement towards efficiency, it can also add confusion and may lead to skepticism on the part of market decision makers.

- ***The energy efficiency delivery infrastructure is being challenged to scale up to meet demand.*** The recent surge in demand for efficient products and services has led to a shortage in appropriately trained and market delivery services. This is a significant issue in commercial and industrial markets where much of the energy savings are contingent on service providers to deliver integrated design or building commissioning services. In the face of intense market demand, many lesser qualified firms or individuals will likely step forward to fill the gap. Without proper training or differentiation, the efficiency may end up being in name only, causing a potential backlash against efficiency.
- ***Lack of investment in energy efficiency R&D has resulted in few new products for the energy efficiency “pipeline”.*** During the first big push for efficiency in the 1980s, the Northwest and others invested significant funds in both new technologies as well as research to understand how energy was used in homes and businesses. However, during the mid 1990s with the threat of deregulation, much of the funding disappeared. As a result, much of the accomplishments of the last decade were built on research funding that was over two decades old. Examples include high-efficiency clothes washers, CFLs, building operator certification, low-leakage duct systems, daylighting and building commissioning. Unfortunately, while the region was capitalizing on the previous decade’s research, there was not a similar investment in new research and development to fuel the “next wave” of efficiency. As a result, during a time of even greater need the new efficiency product and service “pipeline” is running low. A resurgence of investment in “cleantech” is introducing a bright spot on the horizon, but historically the investment has tended to pursue capital intensive technology opportunities such as renewable energy systems rather than the “softer” efficiency choices.