

## BARRIERS AND SOLUTIONS TO CORPORATE ENERGY EFFICIENCY

Energy efficiency is often the least expensive way for businesses to reduce GHG emissions and also comes with added benefits of reduced operational costs and risks. Yet, there remains a gap between the available energy efficiency measures and those actually undertaken by companies. The following chart is a compilation of the most common barriers companies face in developing and implementing energy efficiency strategies as well as some of the tools that can help overcome these barriers. Many of the barriers were identified in the Pew Center’s report, “[From Shop Floor to Top Floor: Best Business Practices in Energy Efficiency](#),” a comprehensive study of corporate initiatives to reduce energy use. This chart examines both private and public solutions to the barriers, which are organized under separate categories for internal operations, supply chain, and products and services. “Private solutions” entail internal and external measures companies can take to overcome a barrier. “Internal actions” refer to measures companies can take independently, whereas “external measures” describe various partnerships or other programs companies can participate in that rely on collaboration with another private or non-governmental entity. Under “public solutions,” “public resources” consist of informational guidance provided by federal and state governments, whereas “public policies” refer to regulatory programs and grants, loans, and other financial incentives offered by federal and state agencies.

PRODUCTS AND SERVICES				
Barriers	Private solutions		Public Solutions	
	Internal Actions	External Actions	Internal Actions	External Actions
<p><b>Lack of information on products</b></p> <p><b>Information on the cost benefit and energy savings of energy efficient products is not available to customers.</b></p>	<ul style="list-style-type: none"> <li>-Provide easy access to energy efficiency information on products.</li> <li>-Provide comparative information on the cost-benefits of using less efficient products.</li> <li>-For retailers, train sales staff on energy efficiency of products.</li> <li>-Give better shelf space for more efficient products (e.g. Wal-Mart and Best Buy have designated areas in stores for energy efficiency products).</li> </ul>	<ul style="list-style-type: none"> <li>-Some utilities provide customers with bill-related signals that indicate consumption levels and in-home displays which provide real-time information on home energy consumption.</li> <li>-Integrating <b>Smart Grid</b> features into products, showing real-time energy usage of appliances (e.g. Whirlpool manufacturing appliances that can interact with the smart grid).</li> </ul>	<ul style="list-style-type: none"> <li>- <b>Energy Star</b> labeling for products.</li> <li>- Additional public education programs like the <b>Energy Star</b> web site.</li> </ul>	<ul style="list-style-type: none"> <li>- Mandatory disclosure, such as CAFE stickers on cars, Energy Guides on appliances.</li> <li>- Standards, which effectively make lack of information irrelevant.</li> </ul>
<p><b>Higher initial costs/customer willingness-to-pay</b></p> <p><b>Difficult to convince consumers to pay higher upfront costs in exchange for future paybacks.</b></p>		<ul style="list-style-type: none"> <li>-Some utilities offer rebates for energy efficiency measures.</li> </ul>	<ul style="list-style-type: none"> <li>-<b>Federal appliance tax credits</b> for manufacturers of high-efficiency residential clothes washers, refrigerators, and dishwashers.</li> <li>-<b>Federal procurement</b> - agencies must purchase <b>Energy Star</b> and <b>Federal Energy Management Program</b>-designated products and incorporate energy-efficient</li> </ul>	<ul style="list-style-type: none"> <li>-Price on carbon - increases energy prices, creating an added benefit for purchasing energy efficiency products.</li> <li>-<b>Energy Efficiency Resource Standards (EERS)</b>, which require electricity providers (and/or other program administrators) to reduce energy use by a specified and increasing percentage or amount each year, have been implemented in some</li> </ul>

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			<p>specifications in procurement bids. This creates a market for energy efficient goods, helping to drive down their costs over time.</p> <p>-Tax credits for energy-efficient home improvements.</p> <p>-Tax credits for builders of all new energy-efficient homes.</p> <p>- Rebate program (home appliances, cash for clunkers, etc).</p>	<p>states. Thereby putting indirect pressure on utilities to further promote sales of EE products.</p> <p>-Efficiency standards remove willingness to pay as an issue as customers are required to purchase only efficient products.</p>
<b>Engineering barriers</b> Companies can run up against technical limitations when trying to design more energy efficiency products.			<p>-Direct government funding for new energy efficient technologies, such as through <b>ARPA-E</b>, or DOE's <b>Energy Innovation Hubs</b>.</p> <p>-Tax credits for research and development.</p>	<p>-Price on carbon - long-term price signal on carbon drives capital toward developing more energy efficient goods and services.</p>
<b>Regulatory barriers</b> Utilities have little incentive to encourage energy efficiency among their customers when their revenues are based on the number of energy units sold.			<p>-Federal business energy investment tax credit for installation of energy efficient/renewable energy systems to utilities.</p>	<p>-<b>EERS</b>, which require electricity providers (and/or other program administrators) to reduce energy use by a specified and increasing percentage or amount each year, have been implemented in some states.</p> <p>-<b>Decoupling</b> utility revenues from sales has been implemented in some states, allowing utilities to engage in energy conservation/efficiency measures instead of trying to sell as much energy as possible.</p>
<b>Marketing difficulties</b> Promoting energy efficient	-Set specific goals of selling a certain amount of energy efficient products (e.g. Wal-Mart)	-Industry and non-governmental collaborative campaigns (e.g. <b>Climate</b>	- <b>Rebate programs</b> make energy efficiency products more cost effective; if consumers feel they	- <b>Tax credits</b> (make energy efficiency products more cost effective; if consumers feel they can save money on

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<p><b>products/services when efficiency is not a priority factor in consumer buying decisions poses a marketing challenge.</b></p>	<p>goal to sell 100 million CFLs.)</p> <p>-Work with suppliers and get them to produce more efficient goods, e.g. Wal-Mart pledge to improve the energy efficiency of the most energy intensive products it sells by 25%.</p> <p>-Run campaigns specifically promoting energy efficient products (e.g. Best Buy has set aside “green zones” in stores).</p> <p>-Offer energy efficient products with co-benefits (e.g. Best Buy aims to bundle a networked energy management system that shows home energy usage with home security/entertainment systems).</p> <p>-Consumer market research</p>	<p><b>Savers Computing Initiative</b>, consortium of IT companies, utilities, NGOs, and other companies that promotes development and purchase of highly efficient computers).</p>	<p>can save money on efficient products, efficiency becomes a bigger priority. (Proposed programs such as Home Star would offer rebates for energy efficiency improvements to homeowners.)</p> <p><b>-Energy Star</b> labeling clearly communicates energy efficiency as a product attribute.</p>	<p>efficient products efficiency becomes a bigger priority)</p> <p>-Cap and trade system gives energy efficiency a high priority.</p> <p><b>-EERS</b>, which require electricity providers (and/or other program administrators) to reduce energy use by a specified and increasing percentage or amount each year, have been implemented in some states. Thereby putting indirect pressure on utilities to further promote sales of EE products.</p> <p>- Efficiency standards (removes willingness-to-pay issue as customers are required to purchase only efficient products)</p> <p><b>-Super-efficient Equipment and Appliance Deployment (SEAD)</b>, an international initiative in which partner governments will collaborate on efficiency policies, incentives and R&amp;D to push inefficient products out and bring efficient ones into the market.</p>