Introduction

Existing businesses create a majority of the jobs in communities. They are a major contributor to a local government’s tax base and are the real economic engines of the local economy (Lucente, 2010). Business Retention & Expansion (BR&E) programs are commonly used by economic developers to address the barriers to the growth or retention of existing businesses. When issues facing businesses can be better understood, the local community is better positioned to work with businesses in addressing such issues to ensure business survival and growth (Civittolo, 2010). Businesses frequently cite the cost of doing business, including energy costs, as a barrier to growth. Implementing distributed generation systems that use energy technology are an excellent way for businesses to reduce and stabilize energy costs, allowing them to remain profitable and grow. This fact sheet is an overview for economic developers and community leaders who wish to assist or support businesses with the implementation of distributed energy generation (DEG), or on-site energy systems, as a retention and expansion strategy.

How Is Distributed Energy Generation a BR&E Strategy?

“Distributed energy resources—also called distributed generation, distributed energy, and distributed power systems—are small, modular, decentralized, grid-connected or off-grid energy systems located in or near the place where energy is used” (U.S. Department of Energy, 2012). For the purpose of this fact sheet series we will refer to distributed energy resources as distributed energy generation (DEG) systems. Businesses that install DEG renewable energy systems, whether small-scale or highly complex, are making a significant investment in long-term facility improvements. Considering the site-specific nature of these projects, the amount and life span of the capital investment, and the potentially lengthy permitting process, businesses are unlikely to be planning a move or closure. Businesses that make the decision to invest in a DEG system are also making the decision to retain the business for at least the life of the project, or, at the very least, as long as they are able to make a return on investment (ROI). DEG projects, in large part because of project longevity, are as good as BR&E “gold” in the retention of existing businesses.

Net Metering Policy and the Role of Economic Developers

Net metering is a state-level policy that encourages the installation of renewable energy technologies by ensuring that owners of DEG systems only pay for the energy they use and are able to send back to the grid the amount they do not use. The policy can help businesses reduce energy costs while helping the environment. Policies vary widely from state to state, but the common denominator is that businesses or residents who produce their own energy are only billed for the “net” consumption; the difference between the amount produced and the amount actually used. Ohio’s
net-metering law requires electric distribution utilities to offer net metering to customers who generate electricity using wind energy, solar energy, biomass, landfill gas, hydropower, fuel cells, or micro-turbines (Romich, 2013).

Although the strategy is underutilized, it is quickly growing in popularity, as almost all states, 46 and counting, are now making net metering policies available. As one of only three states that have no limit on the amount of energy generated, Ohio has a competitive advantage in offering one of the most attractive net metering policies in the country.

Furthermore, in Ohio many economic development professionals are considering net metering as a form of business retention by helping employers to fix their energy cost through on-site renewable energy generation (Romich, 2013). They also frequently work with businesses that cite environmental concerns as a driver in making investment decisions. Using renewable energy technologies, including wind and solar, offsets use of greenhouse gases, a motivating factor for some businesses.

**DEG Project Flow and Steps**

DEG projects, no matter the size or scope, follow a similar process. By understanding the process, economic developers can provide adequate support or answer company questions as needed. Five key steps are described below in the DEG project process, followed by an example of how the process has worked using a case study.

**Step 1: Initial assessment.** Businesses will conduct an assessment to help them determine whether the project would be advantageous. What is the ROI? Are there any issues related to the cost or site that could be prohibitive? Armed with information on whether the project is feasible, businesses will be ready to make an investment decision. Economic developers can be aware of common upfront barriers and/or financing or tax incentives that can assist the business.

**Step 2: Interview builders and contractors.** Economic developers should develop a list of businesses and contractors that have specific experience in DEG projects. Businesses can use these lists to conduct a Request
for Qualifications to find out which contractor(s) will meet their needs. Selecting the right contractor is critical to a successful project. In Step 2, RFQs (request for qualifications) will help businesses decide which contractor to use.

**Step 3: Conduct zoning and permitting clearances.** DEG projects must comply with zoning setback requirements and local or state building permits in addition to utility interconnection agreements. As long as projects are 5 MW or less, they can be approved locally without formal application through the Ohio Public Utilities Commission. Economic developers should be aware of basic project parameters and assist in reducing potential barriers or providing advocacy support if needed.

**Step 4: Construction phase.** Construction can be broken down into two parts: (1) site preparation and, (2) assembly. Since construction is taking place on site, companies will be working closely with the contractor and with local safety officials on safety concerns and to arrange for designated parking and access points. Once again, economic developers can help the business or contractor to alleviate barriers or assist in speeding up the process.

**Step 5: System operations.** Getting to the point where the system is built and operational is rewarding. The company can begin to track how the system is reducing energy cost and emissions. Economic developers can play an important role in helping the company educate the community about the project, perhaps by holding a “grand opening” ceremony to publicly tell the story.

**ROI and Environmental Benefit Examples**

ROI and environmental impact considerations are often the two most important factors in making a business decision about investing in a DEG project. Examples for sample wind and solar DEG projects are provided in Table 1 to demonstrate the potential ROI or break-even point, and selected environmental impact advantages. The example takes into consideration total cost adjusted for incentives and energy savings (which are expected to grow over time as electricity rates rise) to arrive at the ROI. Common environmental impact advantages for both sample projects are also provided. These are typical examples and can be replicated for businesses throughout Ohio with adequate support and assistance from economic developers, utilities, local and state permitting authorities, and contractors.

**Why DEG May Not Work for Every Business or Location**

On-site distributed energy projects are not for every business. Fixed location factors aside, most businesses prioritize capital outlay needs on an annual basis and DEG may not be a high priority in comparison with other immediate needs. State and local DEG policies also play a role in either encouraging or discouraging projects. In addition, when utilities are actively promoting the strategy, more businesses are likely to participate. Contractors also frequently play a role in marketing or promoting DEG as a win-win, bottom-line approach for the business and the environment. The more businesses understand about upfront investment cost, ROI, the process, and potential barriers, the

<table>
<thead>
<tr>
<th>Cost and Environment Variable</th>
<th>Wind Project</th>
<th>Solar Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total cost of project</td>
<td>$3,200,000</td>
<td>$4,201,500</td>
</tr>
<tr>
<td>Installed kilowatt hours generated annually</td>
<td>4,599,000</td>
<td>1,691,233</td>
</tr>
<tr>
<td>Cost adjusted for one time Federal Production Tax Credit (30% of eligible costs)</td>
<td>$2,240,000</td>
<td>$2,941,050</td>
</tr>
<tr>
<td>Annual average savings from energy produced (assuming no change in rate)</td>
<td>$280,000</td>
<td>$273,400</td>
</tr>
<tr>
<td>ROI (Cost/Net Revenue)</td>
<td>6.8 years</td>
<td>5.2 years</td>
</tr>
<tr>
<td>CO₂ emissions saved over life of system (using EPA estimate of 1.34 lbs. per kwh)</td>
<td>63,420 tons</td>
<td>45,325 tons</td>
</tr>
<tr>
<td>Equivalent acres of U.S. forest preserved</td>
<td>490</td>
<td>350</td>
</tr>
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easier it is for them to make an informed decision about whether to invest in a project. Economic developers can assist businesses by citing examples and educating businesses about DEG.

**Other BR&E Advantages of Distributed Energy Generation Systems**

Installing a DEG system can be a good investment, but for some, the return on investment takes longer to realize. The installed cost of a DEG system is wide-ranging depending on whether the project is large or small and complexities involved in the interconnection to the local utility. Businesses can typically realize a ROI within 4–10 years but before making an investment, should expect to receive a detailed upfront assessment of the costs and benefits in order to make an informed decision. Beyond cost savings and efficiency, certain types of DEG technologies may also provide benefits in the form of more reliable power for industries that require uninterrupted service. The Electric Power Research Institute reported that power outages and quality disturbances cost American businesses $119 billion per year.

**Conclusion**

Economic developers are beginning to promote net metering and other energy incentives and policies to encourage businesses to invest in DEG systems as a means to help them remain and grow in Ohio. For example, OSU Extension recently partnered with JobsOhio and 22 county Economic Development Directors on a workshop to educate and inform businesses on DEG projects. Through BR&E outreach programming and by collaborating with local and state regulatory and utility partners, they are uniquely positioned to link businesses with resources that help them make informed decisions about investing in energy cost savings strategies, while helping to retain businesses in Ohio.

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**References**


