

# Benefits of Going Green With Alternative Energy

BY DANIEL CLEARFIELD  
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*Special to the Legal*

Helping clients understand the potential for saving money by investing in alternative energy projects has the potential to get you on that “greatest lawyer” list—if you know where to look for the savings. Remember, alternative energy options are not just restricted to rooftop solar or a wind turbine.

## VALUE IN ALTERNATIVE ENERGY PROJECTS

Even today, with U.S. energy prices at relatively low levels, alternative energy projects offer many economic and environmental benefits, particularly over the medium and longer term. Some environmental benefits, such as reduction in greenhouse gas emissions from fossil fuels and air pollutants, are well known. However, practitioners should be aware of other, less conventional benefits. For example, alternative energy systems may be configured to operate independent of the electric grid, offering increased reliability in the case of outages. Increased reliability could translate to business survival during the next Hurricane Sandy.

## POTENTIAL SAVINGS

The biggest potential benefit comes from reducing the cost of doing business. Alternative energy systems offer businesses the opportunity to operate at a lower cost and many can profit from selling electricity back to the grid. Although the initial expenditure in installing alternative energy projects can be relatively high, the long-term benefits often far exceed the initial investment. Alternative energy systems can be less expensive than the “all-in” cost of purchasing electricity from the grid over time, especially when federal and state incentive payments are taken into account. A survey conducted by Environmental Leader indicated that one-fifth of alternative energy adopters see a return on investment of 15 percent or more, depending on the type of technology installed, the property landscape and location, and the incentives offered by state and local governments. The financial benefits of alternative energy projects may increase over time since the cost of energy is estimated to rise 5 percent to 10 percent each year.

## TYPES OF PROJECTS

The projects that offer the biggest cost/benefits for most end users are those that have manageable upfront costs and are eligible for government



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and other support. Here are a few of the best examples:

- Combined heat and power, or CHP, known back in the day as “co-generation,” is an energy efficient process that generates power and thermal energy from a single fuel source. CHP captures wasted heat from power generation and utilizes it to provide heating and cooling. The current low natural gas prices create annual savings when gas is used as the fuel stock—that balances out the relatively high upfront installation costs. CHP is most attractive for sites that can fully utilize the thermal energy for heating and cooling, such as hotels, hospitals and schools. But the long-term likelihood of continued reasonable natural gas prices, coupled with increasingly volatile weather and local and national financial incentives, has made investing in CHP technology an increasingly attractive opportunity for a greater number of businesses.

- Absorption heat pumps operate similarly to traditional electric heat pumps, except that they are fired by natural gas, propane, solar-heated water or geothermal-heated water. Since natural gas is most frequently used, they are also labeled as gas-fired heat pumps. Contrary to traditional electric heat pumps that are either on or off, gas-fired heat pumps match the engine output and energy requirements to load conditions, reducing energy consumption. Other benefits of absorption heat pumps include lower operational cost, reduced water usage, quieter operation and outdoor installation. They are an increasingly attractive option for many of the same reasons as CHP.

- Alternative fuel vehicles, or AFVs, are vehicles that do not solely operate on petroleum (i.e., electricity, ethanol, liquid petroleum gas or natural gas). Converting corporate fleets of cars, trucks and buses to AFVs offers a reduction in carbon emissions and lower fuel costs. Currently, the cost of running a natural gas-fired vehicle is about \$1.50 to \$2.00 less per gasoline

gallon equivalent. This means better savings and a newer vehicle for many consumers.

- Energy efficiency steps. Heating and cooling systems contribute to the majority of energy spent in U.S. buildings. This is no surprise, since most of us spend our days in an office constantly adjusting an outdated thermostat for the perfect temperature. The replacement of old heating and cooling equipment with new, energy-efficient models is an effective way to reduce energy usage. Other energy efficiency methods require installing and updating energy-efficient appliances, recycling, as well as sealing heating and cooling ducts. Installation of energy-efficient lighting and effective controls can result in energy savings, as using less electricity reduces heat gain, saving energy used for air conditioning.

- Demand response programs are an electric supplier's solution to control costs by paying businesses for their ability to reduce extraordinarily high electric demand that might occur a few times each year. A business may be able to reduce its demand by simply dimming some lighting or increasing the air-conditioning temperature for a few hours. For many demand response programs, a demand response aggregator pays the business for its potential to reduce electric demand, not when demand is actually reduced. A business capable of a 100 kW demand reduction with a two-hour advance notification could be compensated approximately \$4,000 to \$6,000 per year.

## MONEY-FUNDING SOURCES FOR ALTERNATIVE ENERGY

State and national financial incentives, along with incentive programs of utilities and other organizations, have made investing in alternative energy technology an increasingly attractive opportunity for businesses and individuals. Most of the push for alternative energy in Pennsylvania stems from the Alternative Energy Portfolio Standards Act and Act 129. The AEPS Act requires Pennsylvania's energy utilities to purchase a certain percentage of energy from renewable energy sources by 2020. Projects that produce covered renewable energy yield renewable energy credits, or RECs, which the project's owners can sell to utility companies or energy suppliers that are seeking to satisfy their AEPS requirements. Currently, each solar credit is sold up to \$50/kWh; other types of credits are trading at lesser amounts but will still produce additional cash flow for a covered project.

Act 129, enacted in 2008, requires Pennsylvania's seven major electric

utilities to reduce their customers' energy consumption and peak demands by specified amounts over time, or face substantial penalties. As a result, utility companies are offering opportunities for customers to receive rebates and other incentives to improve their energy efficiency. PECO's current program includes support for cost- and energy-efficient projects, including CHP, that can be the difference in making a project economically feasible for an end user.

In addition, natural gas distribution utilities, including Philadelphia Gas Works, have their own programs to increase energy efficiency and reduce carbon emissions. PGW, for example, offers a range of assistance programs to help customers convert to and conserve natural gas. Conversion programs include \$500 credits for switching to natural gas space or water heating, as well as assistance with the upfront costs of larger natural projects, such as CHP. PGW also offers conservation rebates through their EnergySense programs of up to \$2,000 for high-efficiency equipment, up to \$3,500 for whole-home efficiency projects, and up to \$75,000 for commercial and industrial efficiency projects.

Additional assistance might be available from the state. Pennsylvania provides state grants, such as the Small Business Advantage Grant, to encourage the use of alternative energy. Under the Small Business Advantage Grant, the state matches 50 percent (up to \$9,500) of the cost incurred by small businesses (businesses with up to 100 full-time employees) that adopt or acquire energy-efficient or pollution-prevention equipment or processes. Small businesses are also eligible for loans through Pennsylvania's Small Business Pollution Prevention Assistance Account program, which provides low-interest loans to small businesses undertaking projects that reduce waste, pollution or energy use. For natural gas vehicles, Pennsylvania's Department of Environmental Protection is offering up to a \$2,000 rebate to consumers who purchase new plug-in hybrid, plug-in electric, natural gas, propane and hydrogen fuel cell vehicles.

## NET METERING

An often-overlooked source of revenue from an alternative energy project is revenue derived from Pennsylvania's net-metering rules. Net metering enables residential or commercial customers who generate their own electricity from qualifying projects to receive substantial credit by returning the electricity their proj-

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## Extensions

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Department of Environmental Protection website, there should rarely be difficulty determining whether production extending a lease has occurred and, given the levels of production to date, landowners have not been motivated to argue the issue.

Rather, the controversy centers on lease term provisions having broader language invoking commencement of operations generally or enumerating

preliminary activities as triggering events. A wide variety of lease language falls in this category and it is critical to carefully review the specific lease language in light of the relevant facts. Gas companies have been very aggressive both in acting to hold leases and in arguing that a broad range of preliminary activities are sufficient to extend a lease. However, in many instances those preliminary actions have been followed by long periods of inaction. Landowners often have difficulty knowing exactly what activities

have occurred on their land or in their pool without information being supplied by the gas company.

Beyond the general principle that preliminary acts, when performed in good faith and continued within a reasonable time until the well is completed, are sufficient to constitute "commencement of operations," as in *Pemco Gas v. Bernardi*, 5 D&C 3d. 85 (Armstrong County 1977), there is little law on point in Pennsylvania. As a result, little guidance is available with respect to many questions relevant to

commonly faced situations.

What is the limit of preliminary activities sufficient to extend a lease? What facts are sufficient to manifest as good-faith intent to continue these activities? How long and in what circumstances can these activities cease without the lease terminating? Until the courts address these questions in detail, a great deal of uncertainty will continue to exist regarding when gas leases extend and when they terminate. •

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ects generate, but which they do not use, back into the grid. Currently, Pennsylvania residents who generate electricity with systems up to 50 kW in size and businesses with systems up to 3 MW in size are eligible to participate in net metering. Nonutility owners or operators of net-metered distributed generation systems with a nameplate capacity of 3 MW and up to 5 MW are also eligible for net metering—if that system is available to operate in parallel with the electric

utility during grid emergencies as defined by the regional transmission organization.

Pennsylvania has an estimated 7,607 net-metering customers. Each month, energy produced by a distributed generation system is used to offset the kWh consumption on a dollar-for-dollar basis, and customer-generators are compensated for excess generation on an annual basis at the full retail value for energy. So considering a project that is net-metering eligible—not all projects are—and being willing to bear the costs of interconnecting can pay off in the long run.

## EVEN BETTER DAYS AHEAD?

Many are expecting funding for alternative energy to increase in the upcoming years due to the U.S. Environmental Protection Agency's recent Clean Power Plan proposal. The proposal sets a nationwide reduction goal for carbon emissions from existing power plants; Pennsylvania's target is to cut carbon emissions by about 32 percent by 2030. The proposal provides states the ability to develop programs that utilize energy projects with reduced carbon emissions and that increase energy efficiency to meet their targets.

Pennsylvania may well decide that the benefits of encouraging such clean energy sources by, for example, increasing renewable portfolio standards or electric company energy efficiency goals is the most cost-efficient way of meeting their carbon-reduction requirements. If you are interested in considering alternative energy, stay tuned for the potential expansion of incentives and support for carbon-reducing technologies and projects.

*Redeate Dessalegn contributed to this article.* •

## Cleanup

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obtaining DEP approval even though the proposed fill material would otherwise qualify as clean fill.

The DEP's Bureau of Waste

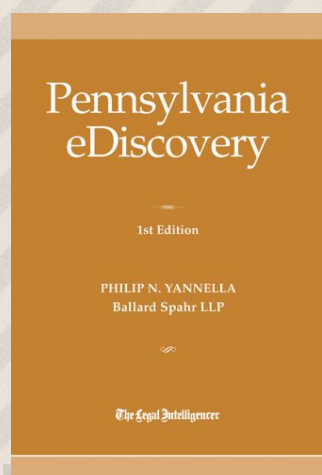
Management has recognized these inconsistencies and is developing a process to align the fill limits with the current MSCs. In the near future, the bureau plans to propose a revision to the fill policy with clean fill limits derived from the current residential

MSCs, along with a mechanism to keep the two sets of standards more closely in sync. Subsequently, the bureau expects to update the regulated fill limits in General Permit WMGR096. Depending on the contaminants involved, these upcoming

changes may disqualify material from use as clean fill or regulated fill, but will eliminate the confusion currently caused by inconsistencies between the numeric limits used in fill projects and Act 2 cleanups. •

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