

## Onsite Energy Production Saves Money and the Environment

There are many ways for fitness centers to lower their operating costs.

There are also many ways that fitness centers can be environmentally friendly. But there aren't many ways for facilities to do both.

American DG Energy, Waltham, Mass., however, now offers fitness centers a way to do just that. The company's "onsite utility" generates "environmentally clean" electricity, heat, hot water and cooling. The company sells the energy produced onsite at the fitness center using American DG's equipment, and fitness centers pay only for the energy they use. American DG designs, installs, owns, operates and maintains the combined heat, power (CHP) and cooling systems that are tailored to customers' specific site requirements.

Two fitness centers recently installed such systems, and have already seen great results. Club Fit, Briarcliff Manor, N.Y., saved thousands of dollars on its energy bill and lowered its CO<sub>2</sub> emissions in the first year of operation. Longfellow Clubs, a group of racquet and fitness facilities with locations in Natick, Wayland, Sudbury and Franklin, Mass., offsets up to 306 tons of CO<sub>2</sub> greenhouse gas emissions each year.

For the onsite system, customers sign agreements (typically for 15 years). There are no capital costs or operating expenses for the facility, and fitness centers outsource the ownership, management and financing of the energy systems to American DG Energy. The clean energy system used by American DG Energy relocates the production of electricity from a large, distant power plant to a small system installed within an individual property. CHP systems offer simultaneous production of two types of energy (heat and electricity) from one fuel source, often natural gas. The ability to create two forms of energy from a single source offers efficiency, and thus both cost savings and environmental benefits, according to President and COO of

American DG Energy Barry J. Sanders.

The natural-gas-fired engine spins a generator to produce electricity. The natural byproduct of the working engine is heat. This heat is captured to supply space heating, and heating hot water for locker rooms, laundry, swimming pools and spas. In contrast, the heat produced at the electric utility is not used; it goes into the cooling water or up the smokestack, along with greenhouse gases and other pollutants. CHP systems also reduce the demand on the nation's utility grid, and protect the property against power outages. Because CHP systems require less fuel and burn more efficiently, they reduce greenhouse gas emissions, such as carbon dioxide (CO<sub>2</sub>), as well as air pollutants like nitrogen oxides (NO<sub>x</sub>) and sulfur dioxide (SO<sub>2</sub>).

Fitness centers only pay for the energy they use, which is typically priced at 10 percent below the current energy price. "A typical facility may be able to save as much as \$500,000 to \$1 million over the term of an agreement (15 years)," says Sanders, and "offset approximately 9,000 tons of CO<sub>2</sub> over the term of an agreement. This is equivalent to the amount of carbon absorbed by 200 acres of forest, or saved by removing 125 cars from the road each year for 15 years."

"With the onsite utility, we've greatly reduced our energy costs and lowered greenhouse gas emissions at the same time," says Bill Beck, vice president of Club Fit operations. The system lowers the facility's emissions by up to 578 tons of CO<sub>2</sub> gas

each year, the equivalent of planting 158 acres of trees or eliminating the emissions of 98 cars.

Longfellow Clubs' Natick location receives a substantial portion of its electricity, heat, domestic hot water and swimming pool heat from an onsite unit. "At most health clubs and sports centers, the second largest expense, behind payroll, is utilities. They are energy hogs," says Owner Laury Hammel. "We had been analyzing our energy efficiency, and considering ways to decrease our carbon footprint, [and] we were thrilled to learn about a program that would allow us to save money and provide a more efficient way to generate electricity and heat."

With Longfellow Clubs offsetting up to 306 tons of CO<sub>2</sub> greenhouse gas emissions each year, that's equal to the CO<sub>2</sub> absorbed by 83 acres of forest or taking 52 cars off the road. In addition, the equipment will reduce the reliance on an existing boiler plant, which will extend the life of the boiler, and reduce the facility's annual operating expenditures.

Fitness centers looking for a way to save money and help the environment can do both with an onsite energy system. Over the long term, facilities can save thousands of dollars, and lessen carbon emissions by many tons. **FM**



Club Fit had an onsite energy system installed at its facility, which generates electricity, heat and hot water, and saves the environment and money at the same time.