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http://www.facilitiesnet.com/hvac/article/More-HVAC-Projects-Qualify-for-Federal-Tax-Deductions--11627

More HVAC Projects Qualify for Federal Tax Deductions

By Charles Goulding, Jacob Goldman and Kenneth Wood

Facility managers are finally starting to get it. All over the country, they are taking advantage of Energy Policy Act (EPAct) tax deductions of $0.60 to $1.80 per square foot to support energy efficient HVAC installations. The sudden large increase in projects qualifying for HVAC tax deductions is occurring for several reasons. For one, facility managers and tax advisers are getting better at identifying qualifying projects. Also, HVAC equipment is getting substantially more energy efficient. Finally, building energy modeling is being used in more new building and HVAC projects.

The deductions — established under EPAct Section 179(D) of the Internal Revenue Code — are designed to encourage energy efficiency in upgrades to existing buildings and new construction. The maximum deduction is $1.80 per square foot. To qualify, a building must reduce overall energy costs by 50 percent compared to a building designed to meet the 2001 version of American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) standard 90.1. If a project doesn't reduce energy costs enough to qualify for that deduction, there are deductions of up to $0.60 per square foot each for lighting, HVAC and the building envelope. Government buildings, which don't pay taxes, may transfer tax deductions to project designers.

To qualify for a deduction, an HVAC project must reduce energy costs at least 16.67 percent below the costs for a building designed to meet ASHRAE 90.1-2001. The project must use energy modeling to show the energy cost savings.

Enough HVAC projects have qualified for deductions that it is possible to identify types of projects that most often achieve deductions. Other HVAC projects may also qualify for deductions, but most so far fall into one of three categories:

1. Installation of one or more of 11 categories of HVAC equipment. Although Section 179(D) deductions are not limited to specific types of HVAC equipment, and any HVAC project that meets the criteria spelled out in

Section 179(D) would qualify for a deduction, most deductions to date have been for the following types of projects:

- Geothermal (ground source heat pumps)
- Thermal storage
- High-efficiency package terminal air conditioning (PTAC) units in apartments and hotels
- Centralized HVAC in apartments and hotels
- Energy recovery ventilation
- Demand control ventilation
- Chillers in buildings of less than 150,000 square feet
- Very efficient heaters in warehouse, industrial and other spaces with no air conditioning
- VAV devices in buildings of less than 75,000 square feet
- Chilled beam ceilings
- Magnetic bearing chillers

2. Installation of any further energy-reducing HVAC equipment in a building that already meets Section 179(D) criteria of energy costs that are at least 16.67 percent lower than a building designed to meet ASHRAE 90.1-2001. Buildings that already use one of the 11 HVAC equipment categories generally meet that criterion.

3. Combining energy-efficient lighting with energy-efficient heaters in non-conditioned spaces and combining LED lighting in conditioned spaces.

Section 179(D) deductions are obtained for reductions in energy costs and those costs are based on a building designed to meet ASHRAE 90.1-2001. For example, installing a chiller in a building of less than 150,000 square feet typically qualifies for a deduction because the ASHRAE 90.1-2001 reference building will include a less efficient HVAC package unit. The same goes for geothermal systems.

Thermal storage systems often qualify because they take advantage of time-of-day pricing. These systems produce ice or chilled water at night, when electric rates are lower, and use it to cool the building during the day. The difference between nighttime and daytime rates is usually significant enough to generate energy cost savings for the deduction.

Buildings connected to district cooling systems that use thermal storage may qualify for "free-riding" Section 179 (D) deductions for HVAC, lighting or building envelope upgrades.

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Geothermal, VAV Devices Also Offer HVAC Tax Savings

By Charles Goulding, Jacob Goldman and Kenneth Wood

There may be other tax benefits available for energy-efficient projects. For example, there is a 10 percent geothermal tax credit or an equivalent 10 percent cash credit in lieu of the tax credit. The cash credit is only available for geothermal projects that commence by Dec. 31, 2010. In addition to the credit or cash grant, a geothermal project will also be eligible for accelerated 5 year MACR's tax depreciation and additional bonus tax depreciation in tax years where bonus depreciation is available.

Facility managers who have already achieved the 16.67 percent HVAC energy cost reduction — possibly by installing any of the 11 technologies — should be aware of a concept known as "free riding." If a building has already attained the required energy cost reduction, any further HVAC equipment installation that reduces energy costs will trigger the HVAC tax deductions. Accordingly, any building that already has very efficient HVAC should give strong consideration to further HVAC upgrades by Dec. 31, 2013, when deductions are currently set to expire.

One common free riding project is to upgrade building controls. Consider a hypothetical 149,999-square-foot building that has had a chiller installed recently. It is often the case that a building like that meets the Section 179(D) criteria of having energy costs 16.67 percent lower than the costs of a building designed to ASHRAE 90.1-2001. If that's the case, the building might well qualify for a $270,000 tax deduction for upgrading its HVAC controls.

Energy Modeling Gains

To get Section 179(D) tax deductions for HVAC projects, the energy cost reduction must be documented by an energy simulation model using software approved by the Internal Revenue Service. That requirement was a significant obstacle when EPAct initially became law in 2005. But the past several years have seen changes that make modeling much less daunting than in the past.

For one thing, LEED also requires modeling. The growing popularity of that program means that more projects are using modeling. However, be aware that modeling for Section 179(D) requires a different approach than LEED modeling. To get the deduction, ensure that engineers doing the modeling understand Section 179(D) requirements.

Another change is that undergraduate architecture and engineering students are now learning how to prepare energy models. That pool of expertise has made modeling more readily accessible.

A third factor is an increase in the number of IRS-approved modeling programs. Currently, the list includes: EQUEST; Trane Trace 700; Energy Plus; Carrier HAP; VisualDOE; EnergyGauge; DOE2.2; DOE2.1E; DOE2.1E-JJH; Owens Corning Commercial Energy Calculator; Green Building Studio; EnerSim; and IES (Virtual Environments).

Finally, many utilities will pay all or a portion of modeling costs. These reimbursements require approval before a project begins. If a project includes daylighting, it is essential to ensure that the model can accurately simulate the large energy savings daylight can provide.

One obstacle to wider use of Section 179(D) tax deductions is that most facility managers are unfamiliar with tax laws, while corporate finance departments usually know little about HVAC, lighting or the building envelope. Facility managers considering energy efficiency projects would do well to involve their finance departments in planning. There are also independent firms that specialize in the tax deductions for energy efficiency projects.

The energy savings available from highly energy efficient HVAC measures greatly reduce building operating costs. The opportunity for substantial HVAC Section 179(D) tax savings encourages facility managers to accelerate the purchase of this energy saving equipment.

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http://www.facilitiesnet.com/hvac/article/EPAct-Tax-Deduction-Encourages-Facility-Managers-to-Think-Holistically--11629

EPAct Tax Deduction Encourages Facility Managers to Think Holistically

By Charles Goulding, Jacob Goldman and Kenneth Wood

The EPAct tax deduction is designed to encourage facility managers to look at a building holistically and to utilize integrated design to reduce overall building energy use. Facility managers can take advantage of major improvements in lighting system efficiency to leverage HVAC system efficiency and use the combined cost savings to obtain multiple tax deductions. Simply stated, buildings with energy efficient lighting are well-positioned to get further tax savings from efficient HVAC.

For example, a building that already has efficient lighting — increasingly including LED lighting — may well be able to achieve Section 179(D) tax deductions of $1.20 to $1.80 per square foot for installing a geothermal, thermal storage or chilled beam ceiling system.

The same goes for non-air-conditioned warehouses with LED or other efficient lighting that install very efficient heaters. In those spaces in northern states, heating is typically the second highest energy cost, after lighting, which may account for 50 to 70 percent of total energy costs. If lighting has been upgraded, energy efficient heaters, which can provide energy cost savings of eight percent or more compared to a building designed to meet ASHRAE 90.1-2001, offer a good opportunity for larger tax deductions.

In fact, a facility with LED or other efficient lighting that installs any of the 11 efficient HVAC projects is a good candidate for a tax deduction of $1.20 to $1.80 per square foot.

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