Special Tax Savings Opportunities for Pharmaceutical and Biotech Campuses

By Charles Goulding, Amelia Aboff and Taylor Goulding

Charles Goulding, Amelia Aboff and Taylor Goulding discuss the tax saving opportunities available to pharmaceutical and biotech campuses under Code Sec. 179D.

As result of their multiple buildings, large square footages and central energy systems, pharmaceutical and biotech (pharma) campuses are eligible for special tax savings opportunities. Virtually every pharma campus should be able to use the existing attributes of their central plant systems to easily capture large tax savings.

Typical campuses are located in densely populated, expensive energy cost areas since the scientists and laboratory technicians are highly skilled workers that need to be in areas with strong university and other research resources. To begin the energy tax planning process, tax departments should first obtain a list of campus facilities organized by square footage and building type (see Chart 1). Smaller buildings supported by the central plant equal to or less than 150,000 square feet and 75,000 square feet more easily qualify for tax deductions discussed later in this article. The buildings at many U.S. pharma campuses are primarily utilized as laboratories and offices, since product manufacturing is often subcontracted out to contract manufacturers and other low-cost jurisdiction facilities.

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Pursuant to the Energy Policy Act (EPAct) Code Sec. 179D, building owners or tenants making qualifying energy-reducing investments can obtain immediate tax deductions of up to $1.80 per square foot.

If the building project doesn't qualify for the maximum $1.80-per-square-foot immediate tax deduction, there are tax deductions of up to 60 cents per square foot for each of the three major building subsystems: lighting, HVAC and the building envelope. The building envelope is every item on the building's exterior perimeter that touches the outside world including roof, walls, insulation, doors, windows and foundation. To qualify for a tax deduction, the project must reduce energy use by prescribed amounts above the energy code standards of ASHRAE (American Society of Heating, Refrigeration and Air Conditioning Engineers) 2001.

Understanding the Energy Aspects of Pharma Central Plants

Central plant campuses are normally far more energy efficient than a series of separate buildings. Most of us are familiar with typical standalone buildings that have their own in-building HVAC systems dedicated entirely to providing heating and cooling to the building in which they are located. Traditionally, these buildings have to have some level of energy inefficient redundancy since the HVAC system has to be adequate to cover the wide range of energy demands for that building. For example, even though a training

Smart Pharmaceutical Campus-Wide Energy Tax Plan
EPAct Tax Deductions Available for Energy Efficient Building Improvements

Building Description	Square Footage	Lighting Minimum Deduction	Maximum Deduction	HVAC Maximum Deduction	Building Envelope Maximum Deduction	Total
Corporate Office	300,000	$90,000	$180,000	$180,000	$180,000	$540,000
Office A[1]	70,000	$21,000	$42,000	$42,000	$42,000	$126,000
Office B[2]	140,000	$42,000	$84,000	$84,000	$84,000	$252,000
Lab A[1]	60,000	$18,000	$36,000	$36,000	$36,000	$108,000
Lab B[2]	130,000	$39,000	$78,000	$78,000	$78,000	$234,000
Lab C	200,000	$60,000	$120,000	$120,000	$120,000	$360,000
Auto/Truck Garage[2]	110,000	$33,000	$66,000	$66,000	$66,000	$198,000
Cafeteria[2]	130,000	$39,000	$78,000	$78,000	$78,000	$234,000
Training Center	120,000	$36,000	$72,000	$72,000	$72,000	$216,000
Parking Garage[3]	600,000	$180,000	$360,000	N/A	$360,000	$720,000
Central Power Plant	N/A	N/A	N/A	N/A	N/A	N/A
Total	**1,860,000**	**$558,000**	**$1,116,000**	**$756,000**	**$1,116,000**	**$2,988,000**

[1] Office A and Lab A will qualify for the added ≤75,000 square foot ASHRAE opportunity.
[2] Office B, Lab B, Auto/Truck Garage, Cafeteria and Training Center will all qualify for the ≤150,000 square foot ASHRAE opportunity.
[3] The majority of parking garages are not heated or cooled, so they will not be eligible for an EPAct HVAC tax deduction.

center may only be used occasionally or a particular office building may only be used for a day shift, the HVAC system has to cover the entire range of building use 24 hours a day. Although standalone buildings can use decentralized systems to manage some of this inefficiency, they are quite expensive. The advantage with central plant systems is that very energy efficient systems can be used to effectively cover varying energy needs of the entire campus.

The Central Plant Tax Advantage

The Code Sec. 179D Energy Policy Act (EPAct) tax benefit calculation process is done on a separate building basis. The energy performance of each building post-project is compared to 2001 energy code for a separate, similar reference building. This means that a campus laboratory building will be compared to a separate laboratory building and a campus office building will be compared to a separate office building. With this tax system a central plant facility has a major tax advantage, since the added energy efficiency of the central plant is attributed or allocated to each building it serves. In particular central plants that use decentralized systems, geothermal and thermal storage with time of day pricing will platform for major tax savings. Furthermore, any time the central plant supports buildings at square footage breakpoints of 150,000 square feet or less and 75,000 square feet or less, there are additional benefits under the ASHRAE standards.

Calculating the Central Plant Tax Advantage and Tax Savings

To calculate the central plant tax opportunity either post-project or in the design stage, all of the buildings in the central plant must be modeled using IRS-approved building energy simulation modeling. Since energy modeling is expensive, pharma executives should first identify any existing models. Models often already exist for LEED facilities and for facilities that have received large utility rebates. If an energy model exists it should be updated and if necessary converted to IRS approved software and converted to an EPAct modeling methodology. If there is no existing energy model, the pharma should seek a modeling rebate from state or utility programs. Many of the high energy cost states where pharmas are typically located offer these rebates. EPAct modeling methodology is somewhat unique and engineering firms usually need a tutorial before modeling their first EPAct project. Pre-project EPAct campus modeling will often indicate that existing energy efficiencies are such that any building project that

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further reduces energy use will qualify for tax savings.

Tax Planning Examples

Example 1

Let's presume that the model for a 10,000,000 square foot pharma campus indicates that the HVAC is already 16.67-percent more energy efficient than the 2001 ASHRAE standard. We can presume that the campus is considering an HVAC controls project that will further energy savings at a cost of $6,000,000. This means that the entire controls cost of $6,000,000 will be eligible for an immediate EPAct tax deduction. To document the tax deduction, the project will have to be remodeled (or have the existing IRS model updated) to incorporate the energy performance of the HVAC controls system.

Example 2

Let's presume the same model for the same campus demonstrates that the campus is already at a 50-percent energy efficiency level compared to ASHRAE 2001. In this example the facility would qualify for an immediate $18,000,000 EPAct tax deduction that could be used to support a variety of energy savings projects.

Energy Efficient Equipment for Pharmas

One of the biggest energy users for pharmas and biotechs is laboratory equipment including fume hoods. The Department of Energy has spent years researching and developing extremely energy-efficient fume hoods. In fact, the DOE Lawrence Berkeley National Laboratory has developed a 50-percent more efficient fume hood called the Berkeley Hood.[1] Tax departments should work closely with operations personnel to analyze the benefits of additional utility rebates, five-year depreciation and bonus depreciation when available to determine the overall economic payback from purchasing these advanced hoods.

Conclusion

Campus style pharmaceutical companies have tremendous energy tax savings opportunities. Due to the magnitude of the energy cost and tax savings opportunity, senior pharma financial, tax, energy and facilities executives need to work together as team to plan into these benefits.

Endnotes

[1] *See* E. Mills and D. Sartor, *Energy Use and Savings Potential for Laboratory Fume Hoods*, Energy, LBNL-55400, Energy 30:1859-1864 (2005).

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mance standards for tax purposes, particularly in the lighting area.

The Space Characterization Issue

The Code Sec. 179D (Energy Policy Act tax benefits are based on the ASHRAE (American Society of Heating Ventilation and Air Conditioning Engineers) definition of buildings. Often businesspeople will refer to a building as a warehouse or a distribution center when, from an ASHRAE perspective, it is not a warehouse. The proper way to characterize a building is by the most significant activity occurring in the facility. As a general rule, any building category other than "warehouse" is a better category for Code Sec. 179D tax deduction purposes. For example, postal distribution facilities and mail sorting facilities have their own more favorable building wattage categories. Any facility where the most significant activity is one of the nonwarehouse activities described immediately above will more easily qualify for an EPAct tax deduction.

Warehouse Mezzanines and Distribution Center Picking Modules

Many distribution centers have mezzanine levels or multi story/floor level picking module building subsystems that also have ceiling lighting. Since every roof level is considered a space for ASHRAE purposes, those spaces can be included or excluded in EPAct calculations. Only spaces subject to a project can be considered in an EPAct project. So, for example, if the distribution center lighting is retrofitted but the lighting in the picking module is not upgraded, only the nonpicking module distribution center space can be counted in the EPAct square footage calculation. However, if the picking module lighting is retrofitted, the additive square footage of each ceiling level with lighting can be counted thereby resulting in a larger tax deduction.