

INSTITUTE FOR MARKET TRANSFORMATION
Project on Energy Efficiency and Property Valuation

**Reassessing the Treatment of Energy Efficiency in
Commercial Property Tax Assessment**

Model Policy Approaches for California

I. Introduction

The mission of the Institute for Market Transformation (IMT) is to promote energy efficiency and environmental protection in the U.S. and abroad. IMT's current Project on Energy Efficiency and Property Valuation seeks to strengthen the link between energy performance and appraised asset value in commercial buildings. The project strives particularly to transform how commercial appraisers account for energy performance in their assessments of building value. If successful, it will create new incentives for building owners and developers to pursue and maintain energy efficiency, across a range of end uses, in both new and existing buildings.

Energy costs are important in many types of commercial buildings because they are a significant component of operating costs and overall net operating income (NOI). In California, such costs typically represent between 10 and 15 percent of NOI¹. By encouraging commercial building appraisers to assign incremental value for energy efficiency in their calculations of NOI, IMT intends that building owners and developers will receive higher value for energy-efficient properties upon resale or refinancing.

However, since property taxes are levied based on a building's assessed value, it is conceivable that energy-efficient buildings appraised at a higher value will also have a higher property tax, negating at least some of the cost benefits of a building owner's energy-efficient investment. It appears incongruous, therefore, that owners of efficient buildings should have to pay for what amounts to a tax penalty. The economic benefits of energy efficiency, in IMT's view, should not be weakened in this way.

Creating some protection for energy-efficient buildings from incremental taxation should be an area of potential interest for states, counties, and municipal governments that have an interest in promoting environmental protection in their jurisdictions. The purpose of this document is to offer guidance to governments for a set of model policy approaches for such protection of energy-efficient buildings. First we provide a background for the determination of the tax rate; then we describe the property tax assessment and calculation processes in California, including a discussion of existing exemptions to the property tax code. A few other states' policies and procedures are summarized for comparison, and finally, IMT enumerates selected model policy options for acknowledgment of energy-efficient commercial buildings by property tax assessors.

¹ Building Owners and Managers Association (BOMA). 1998 Experience Exchange Report.

Negative Effect of Property Tax Impact on Energy-Efficient Construction

If the potential transformation of real estate appraisal practice as conceived by IMT is realized, the savings from energy efficiency, and effects on the property value of commercial buildings could be significant. However, the effects on property tax could also be significant and warrant closer examination.

The incremental tax burden associated with higher valuation could be sizable since efficiency lowers operating costs and raises NOI, and income-based valuation can yield a significant increment of present value in buildings with lowered energy use. Please refer to the following sample demonstration of the property tax impact of energy-efficient retrofit in a typical office building in California.

Pre-Retrofit Scenario

\$1,800,000	Annual revenue	
– 800,000	Annual costs	<i>of which energy = \$100,000</i>
	(total expenses)	
<hr/>		
\$1,000,000	NOI	
÷ 10%	Capitalization rate ²	
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\$10,000,000	Building value	
x 1.2%	Property tax rate ³	
<hr/>		
\$120,000	Annual property tax	

Now consider a 20% energy cost reduction from an energy-efficiency retrofit, that is, a 20 percent savings per year from the original \$100,000 annual energy cost:

Post-retrofit Scenario

\$1,800,000	Annual revenue	
– 780,000	Annual costs	<i>of which energy = \$80,000</i>
	(total expenses)	
<hr/>		
\$1,020,000	NOI	
÷ 10%	Capitalization rate	
<hr/>		
\$10,200,000	Building value	
x 1.2%	property tax rate	
<hr/>		
\$122,400	annual property tax	

Added tax = \$2,400 per year (or more than 10% of savings from the retrofit)

² Capitalization rate is a number that reflects the relationship between net operating income and building value. It is an observed parameter derived from comparable sales, and generally falls in the range of 8 to 12 percent, depending on the type of building and on local market conditions.

³ Assumed property tax rate, typical in Northern California for 1998.

II. Property Tax Rate

The State of California Constitution sets the base property tax rate, which is currently at 1 percent. Proposition 13 also permits county assessor's offices to add to this rate to pay voter-approved bonded indebtedness charges. Such additional rates will vary from area to area throughout the state. Statewide, the average total tax rate approximates 1.02 percent, and does not change by much each year. Each tax district also applies supplemental assessments for specific services such as mosquito abatement, sewer services and public education. Special assessments may or may not be voted on, and vary widely by district. The overall property tax rate for the city of Alameda, for example, is 1.13 percent, while Berkeley's is relatively high at 3 percent.

III. Assessment Process

Under Proposition 13, the tax basis for a property is reassessed when:

- A change in ownership occurs; or
- New construction is completed; or
- New construction is unfinished on January 1st (lien date);
- If it is part of an annual review of properties having declining value; or
- It is part of a land conservation contract (Williamson Act).

Retrofits, additions and alterations that change the way a building is used, functions, or bring it up to "new" condition, are all considered "new construction." Copies of building permits for all new construction are sent to the county assessor's office, where they are reviewed on a case-by-case basis to determine if they qualify for reassessment, or if it appears that the alteration falls into the category of routine repair and maintenance.

The duties of the elected county assessor are to discover all assessable property on January 1 each year, to inventory and list all taxable property, to value the property, and to enroll the property on the local assessment role. The county assessor's primary responsibility is to determine annually the full taxable value of each property so that each owner is assured of paying the proper amount of property tax for the support of local government.

The assessed value for most property is the prior year's assessed value adjusted for inflation with a maximum of 2 percent. However, if there has been a change in ownership or completed new construction, the new assessed value will be the market value of the property. If a reassessment is called for, the retrofit or addition is appraised by a tax assessor's office appraiser (or by a contracted professional from an outside appraisal agency) to determine the difference between the overall property value and the value of the new assessment. This new tax amount is arrived at through the same methods as those used in general appraisal practice conducted for financial lenders and prospective buyers, as defined by the Appraisal Standards Board in the *Uniform Standards of*

Professional Appraisal Practice

The criteria for property reassessment varies from county to county, but generally it is only triggered if a “change in use” occurs. For example, an assessor in one county indicated that an energy efficient *retrofit* of a building’s HVAC system would not likely prompt a new assessment, while *installation* of an energy efficient HVAC system where a system did not exist previously would. The property tax in this case would be based on the cost of the equipment and installation. Alternately, an energy-efficient retrofit might indeed trigger a reassessment in another county if it were deemed by the appraiser to add value to the property. In this scenario, some portion of the modification might be considered “repair and replacement,” for work that would normally take place within the life cycle of the equipment, and therefore, would be taxed at a lower rate than an entirely new installation.

IV. Calculation of Property Tax

Once the value of a property or retrofit is assessed, it is multiplied by the appropriate tax rate to form the basis of the current year’s tax bill. This rate is measured annually by one of the state’s four Boards of Equalization, and differs slightly by city or special assessment area. The total property value cannot be taxed for over the consumer price index (CPI) established by the state for inflation, which is set at 2 percent for California (compared to 3 percent in Oregon). The property value or cost of modification is then multiplied by the tax rate to determine the current property tax. This rate applies until another change in current use or title transfer occurs.

V. Exemptions

The State Constitution provides for a variety of full and partial exemptions from property tax. Common exemptions include property owned by the state, churches, and libraries. Some exclusions are also granted under the “new construction” Sections 70 through 74 of the California Revenue and Taxation Code, such as fire sprinkler installations and seismic retrofitting improvements. The only energy-related exclusion in California is for “active solar energy systems, ” and is effective January 1, 1999 through 2006. This new law exempts from supplemental assessment the construction or addition of a system that provides for collection, storage or distribution of solar energy, until the property changes ownership. At this time, no exclusions exist for energy-efficient equipment or measures in buildings in California.

VI. Other States

IMT researched the tax structure and assessment process in a few otherwestern states for comparison to California’s system of property taxation and exemptions. We found that programs in Oregon, Washington and Texas vary widely.

Oregon property tax laws are most like California’s, having passed a Proposition 13-type measure in 1997. Oregon’s Measure 50 limits the frequency that property can be

reappraised from once a year, to only in the event of new construction or a title transfer. At least in one county, the way that tax assessments are calculated differs slightly from California. An appraiser from Multnomah County's (in Portland) Assessor's office indicated that he does account for energy efficiency in valuations of commercial property and retrofits. He said that when an upgrade of energy efficient features in a building is done, it adds incremental value, and therefore a higher property tax, to the building. However, deductions are often made for standard repair or replacement costs from the estimated value of the improvement. While this procedure is discretionary rather than legislated, a more universal system of allowances for energy efficiency would give building owners a greater incentive to seek such improvements.

Oregon does offer other incentives to property owners who pursue energy-saving projects. For example, a tax exemption is granted for renewable energy systems for the purpose of heating, cooling or generating electrical energy. A 35 percent tax credit is also available to businesses that retrofit or build a new facility that is more energy-efficient than standard models. Installing heating and cooling equipment that is 10 percent more efficient than standard models is eligible for a tax credit in the amount of the difference in cost between the two. Lighting projects must meet higher efficiency standards, by at least 25 percent, than HVAC and insulation improvements. Since 1980, more than 3,500 tax credits for energy efficiency and renewable resource projects have been awarded to businesses, resulting in energy savings exceeding \$75 million each year.

Property tax rates vary according to levy code area in Oregon, but it averages at about 2 percent of assessed value, and can only increase by up to 3 percent per year.

Washington has recently adopted a new system for tax assessment of commercial property where buildings are revalued on a yearly cycle through a model-based mass appraisal process. Properties are only physically inspected every six years. As in California, each municipality submits copies of new building permits which are then used to update the database of building profiles. If the new construction is deemed to add value to the property, the entire property is then reassessed. An appraiser for the assessor's office in King County (Seattle) said that some installations, such as an energy efficient heating, ventilation and air conditioning system, might very well incur incremental property tax. Like all of the states surveyed, Washington does not permit tax exemptions for energy efficient new construction. The tax rate in Seattle is currently 1.22 percent.

Finally, in Texas, property is reappraised every three years, and when there is a title transfer or significant new construction. The property tax rate in Dallas rate is 2.5 percent. Again, no exclusions currently exist for energy efficient installations or new construction.

VII. Approaches to Property Tax Assessment Reform

IMT's project on commercial property valuation strives to transform how commercial appraisers account for energy performance in their assessments of building value. The project, if successful, can create significant new incentives for building owners and developers to pursue and maintain energy efficient practices and equipment. The added

property tax that the current system levies on energy-efficient new construction serves as a hindrance to these goals. IMT proposes that a number of changes could be made to the tax assessment process in California to address this disincentive.

The agencies involved in pursuing a legislated tax exemption for energy-efficient new construction are the State Revenue and Taxation Committee, which adopts property tax law, and the California Board of Equalization, which interprets the law. As an act of the State Assembly would be required for such a change to be implemented, either an appeal could be made to the State Revenue and Taxation Committee, or a ballot measure initiative could be filed.

IMT submits the following approaches for revising current tax law to account for energy-efficiency measures and equipment, including a short discussion of the pros and cons of each.

1. **Prescriptive list of exempt technologies.** The first and most straightforward method would be to modify the definition of taxable “new construction” in the California Revenue and Taxation Code to exclude specific energy-efficient installations and built features for commercial buildings in California.

This approach would probably be the simplest method to understand and implement, for building owners as well as tax assessors. The key question, of course, is what measures ought to be exempted. Some might argue that only technologies with known track records in actual operations should be exempted, while others would also grant the exemption to promising new advanced technologies. Furthermore, it would be a significant challenge to determine where to draw the line for exemption; presumably, the performance of exempt measures would have to exceed the prescriptive levels of applicable codes, but whether the margin should be twenty percent, or thirty percent, or even a higher percentage better than codes would ultimately be an arbitrary policy decision.

In any case, measures would have to be defined with extreme precision, according to measurable physical parameters wherever possible. For applicable technologies (for example, windows or electrical distribution transformers), industry-wide energy rating scores could be used as a threshold criterion. Brand names and models could also be specifically enumerated.

We envision that the task of defining exempt technologies would fall to an appropriately technically qualified agency designated by the legislature. In California, the likeliest candidate agency would be the California Energy Commission.

Actual legal language embodying this approach might appear as follows, in Section 70 to 74.6 of Article 13 of the California Constitution on Taxation:

(a) The term “newly constructed,” as used in subdivision (a) of Section 70 of Article XIII A of the California Constitution, does not include

the construction or addition of certain energy-efficient commercial building components or installations.

(b) (1) *“Energy-efficient commercial building components or installation” are defined by the California Energy Commission (CEC) in Publication (. . .). “Energy-efficient commercial building components or installation” does not include construction or installation of any technology that is not contained in the CEC-approved list.*

2. **Performance-based exemption.** One disadvantage of the item-by-item list of exempt technologies is that it might fail to include integrated building energy upgrades that do not include specific exempt technologies, but achieve an equivalent energy-saving effect. Our second proposed approach addresses this issue by establishing a whole-building performance-based hurdle for qualification for exemption. In order to avoid triggering a reassessment, the owner would need to prove that the retrofit in question, taken as a whole, would result in reduction of whole building energy use by some given percentage (say, ten or twenty percent) or more relative to a stipulated baseline.

The procedures for verification of expected post-retrofit energy use could be stringently defined; these procedures could employ the same basic calculation rules as required for compliance with Title 24, California’s construction code. The baseline could be defined either as the building’s own level of energy consumption before the retrofit, or alternatively, as the code-stipulated minimum allowed whole-building energy consumption for a new or retrofitted building of the given type.

Actual policy language might appear as follows:

(a) *The term “newly constructed,” as used in subdivision (a) of Section to of Article XIII A of the California Constitution, does not include the construction or addition of certain energy-efficient commercial building components or installations.*

(b) (1) *“Energy-efficient commercial building components or installation” are defined as a set of measures (retrofit) which, when taken together, result in calculated whole-building energy consumption that is at least twenty percent lower than whole-building energy consumption calculated for the building before the retrofit.*

(2) *Calculations of whole-building energy consumption, for the cases both before and after the retrofit, shall be made according to a calculation method approved for compliance with California Code of Regulations Title 24, as defined in Sections 10-109(a) or 10-109(b).*

3. **Exemption of increment of value attributable to energy efficiency.** Another approach would not explicitly change the definition of “newly constructed”, but would instead exempt the portion of value related to new energy-efficiency measures.

Under this approach, the building would not necessarily escape reassessment altogether for major upgrades; instead, the policy would state that tax assessors should determine the value of buildings with new energy-efficient features as if those features were not in place.

In terms of its practical effects, this approach would resemble the first two, in that newly energy-efficient buildings would be treated the same for tax purposes as if they had not undergone any upgrade. The policy would still have to define “energy-efficient”, either in terms of prescribed measures and technologies, or in terms of an overall improvement in energy performance. The difference with this approach is that unlike the others, it defines the exemption in terms of value, instead of technology or energy performance.

This approach would be particularly useful if legislators thought it desirable to separate the energy-related and non-energy value enhancements associated with certain types of upgrades. A building owner may, for example, undertake a major building retrofit, installing skylights for daylighting. The building may warrant a higher appraisal as a result of both the expected energy savings and the increased attractiveness of the building. One could argue that the energy savings generate a public benefit, whereas the benefit of added attractiveness is felt only by the building occupants, and therefore only the energy savings should be rewarded by the policy.

How can an appraisal by a tax assessor separate these effects? If the assessor employs the income capitalization approach to appraising the property, it would be a relatively simple matter to isolate the effect of energy on net operating income — effectively, the exempt portion of building value would be the expected annual energy savings divided by the chosen capitalization rate.

While this approach offers the advantage of greater precision in the application of policy incentives, it does have the significant drawback of greater complexity in implementation. Assessments might require more time, and be subject to greater dispute. Still, we believe that given a clear procedural definition and appropriate adjustment periods, this approach could be implemented nearly as easily as the other two. (Note that this approach is employed in a recently-proposed bill in Oregon [Senate Bill 892] that would amend that state’s tax code to exempt incremental value for buildings with solar, geothermal, wind, water, or methane gas systems.)

Actual policy language for an energy-efficiency exemption might appear as follows:

- (a) *Property equipped with energy-efficient components or materials newly installed after [date] shall be exempt from ad valorem taxation in an amount that equals any positive amount obtained by subtracting the appraised value of the property as if it were not equipped with such components or materials, from the appraised value of the property so equipped.*
- (b) *The calculation of the appraised value difference described in (a) shall be based on capitalization of expected energy savings;*

exempt incremental value shall equal expected energy savings divided by a capitalization rate, defined as appropriate by the assessor;

- (c) *Expected energy savings shall be calculated by means of a calculation method approved for compliance with California Code of Regulations Title 24, as defined in Sections 10-109(a) or 10-109(b).*
4. **Tax credits.** A final policy mechanism for protecting owners from a tax penalty associated with incremental energy-related value is to issue tax credits for energy-efficiency upgrades. This approach is more explicit and more aggressive than any of the previous three; instead of framing the issue as refraining from incremental taxation, this policy method could be considered a state-supported rebate for desired investments.

As with the previous methods, qualifying technologies or levels of whole-building performance would have to be specified. So too, of course, would the actual amount of the credit. (The Oregon Office of Energy awards tax credits totaling up to \$40 million annually, at a level equal to 35% of qualifying project costs.) These incentives may be offered in conjunction with utility programs; in Oregon, some investor-owned utilities offer cash up front to owners pursuing approved energy upgrades; in exchange for this support, the tax credit is transferred from the owner to the utility.

Summary and Conclusions