

EXECUTIVE SUMMARY

HOW TO CALCULATE AND PRESENT DEEP RETROFIT VALUE

A GUIDE FOR OWNER-OCCUPANTS



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TAPPING DEEP RETROFIT VALUE

Deep energy retrofits offer businesses myriad tangible, meaningful benefits beyond energy cost savings alone. But learning how to account for, articulate, and capture those benefits is the key.

This might come as a surprise to some, but energy efficiency is about more than energy, and deep energy retrofits, which achieve superior energy savings over conventional retrofits and can reduce a building's energy consumption by 50 percent or more, offer bottom-line benefits for business beyond energy cost savings alone. They generate substantial additional value that is typically ignored: improved employee health, productivity, and satisfaction; bolstered leadership credentials and reputation; access to tax, finance, and entitlement subsidies; improved risk management; reductions in non-energy operating costs; and higher occupancies, tenant retention, rents, and sales prices.

Accounting for, articulating, and capturing that present-but-overlooked additional value can drive far greater investments in building energy efficiency while generating returns that directly benefit a business's balance sheet. Such non-energy benefits of deep retrofits are not “soft” and intangible but in fact real opportunities for significant, quantifiable business value. Rocky Mountain Institute's *How to Calculate and Present Deep Retrofit Value for Owner-Occupants* (Deep Retrofit Value practice guide) shows how to tap into that value.

The guide helps professionals move forward with and achieve their goals to build business value through highly efficient buildings. It also helps professionals better demonstrate the impact of deep energy retrofits to peers inside and outside their organization.

IS DEEP RETROFIT VALUE FOR YOU?

The guide's basic value framework focuses on owner-occupants but can be applied, with adjustment, to residential spaces and other property types as well as new construction, tenant improvements, equipment replacements, and other types of sustainability investments. The guide is useful to anyone interested in better understanding how deep retrofits create value, but is primarily designed for:

- **corporate real estate executives and their facility management staff** preparing retrofit capital requests;
- **internal corporate finance departments** and others with capital budgeting due diligence responsibilities;
- **architects, engineers, consultants, and other service providers** analyzing and documenting support for energy-efficiency recommendations;
- **company sustainability and energy managers** developing retrofit sustainability strategies and capital budgeting plans;
- **investors and lenders** interested in understanding occupant demand, the most important retrofit value driver for investors; and
- **valuation professionals, appraisers, and accountants** trying to understand the business value implications of an enterprise's retrofit-related energy efficiency and sustainability investment.

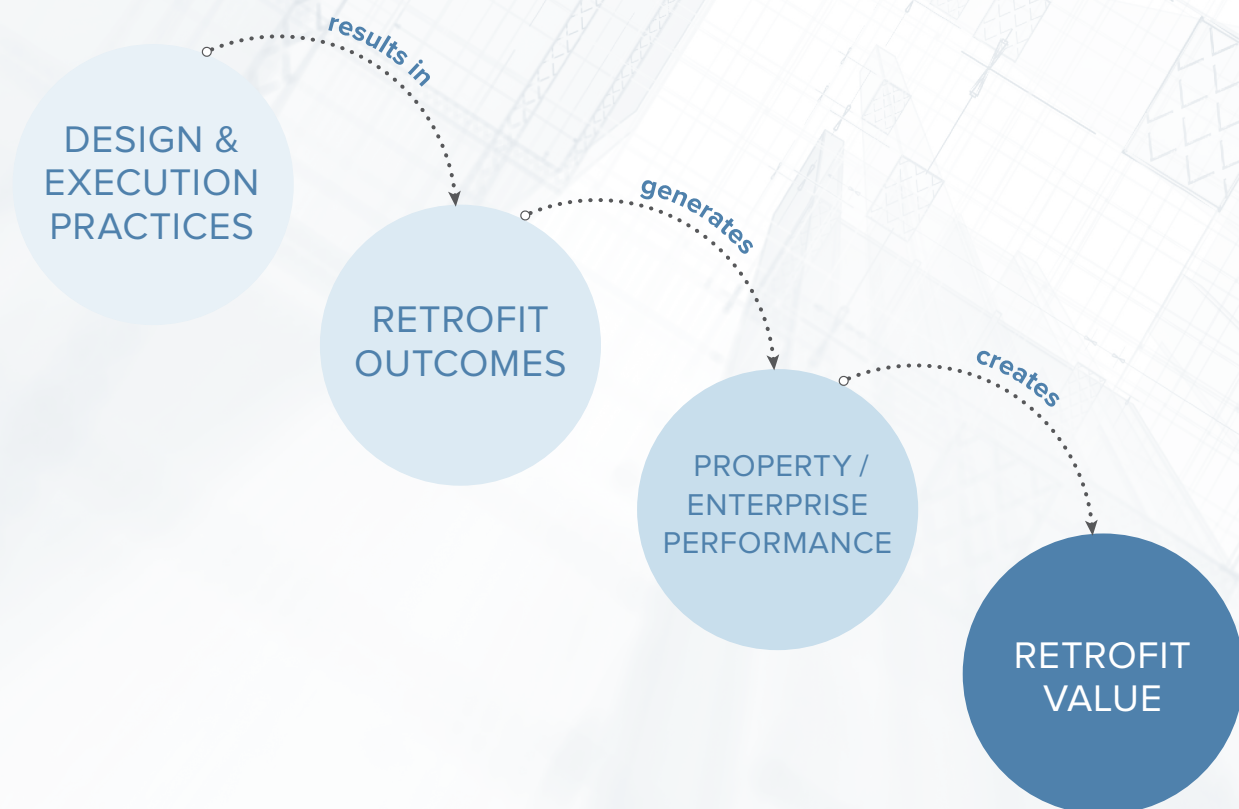
RMI'S RETROFIT VALUE MODEL

Deep Retrofit Value is based on the four pieces of RMI's Retrofit Value Model (see figure). That model shows, at a high level, the evaluation process business leaders should make of deep retrofit investments.

For example, consider the installation of an updated air ventilation system (a design & execution practice). This system uses less energy, improves air circulation, and creates better indoor air quality (direct retrofit outcomes). Because air circulation is improved, employees are more comfortable; because air quality is better, employees get sick less often (indirect

retrofit outcomes). The ventilation system provides benefits with direct implications for an organization's bottom line: greater comfort and fewer sick days creates a context whereby employees are more engaged and productive—meaning more work is accomplished and more innovations are fostered—as well as reduces the costs associated with absenteeism and the recruitment of new employees to replace those that leave the organization (property/enterprise performance). And that improvement in property/enterprise performance has quantifiable value that can be directly tied back to the deep energy retrofit (retrofit value).

RMI RETROFIT VALUE MODEL



THE NINE ELEMENTS OF DEEP RETROFIT VALUE

The non-energy cost aspects of Deep Retrofit Value fall into nine discrete value elements. They serve as a menu of the potential types of value a retrofit can create:

1. **Retrofit Development Costs:** These costs are critical because they represent the initial capital investment against which future cost savings and other benefits are measured. Many retrofit projects have little cost premium if timed correctly with other capital improvement projects and if the project follows Deep Retrofit Value best practices.
2. **Non-Energy Property Operating Costs:** Deep retrofits can reduce these costs (e.g., maintenance, water, insurance, and occupant churn rate) and can add more occupied space in a building through equipment downsizing and better occupant use of space.
3. **Retrofit Risk Mitigation:** Deep retrofits are often subject to the standard and relatively high real estate risks of a “to-be-built” project where development costs and future operating cost savings are forecast to determine return on investment. These risks can be compounded by additional risks like new products and systems, new specialized service providers, new contracts and design processes, complex financing requirements, and potential savings underperformance from building energy simulation models. Following Deep Retrofit Value best practices and fully presenting the risks enables risk mitigation.
4. **Health Costs:** There is substantial evidence that intelligently retrofitted and operated buildings improve the health of building occupants and users, directly reducing health costs, for example through moisture and pollutant control, improved ventilation and access to outside air, access to the natural environment and daylighting, and temperature control.
5. **Employee Costs:** There is strong evidence that deep retrofits can reduce employee costs by lowering recruiting, retention, and employee compensation costs.
6. **Promotions and Marketing Costs:** The substantial expenses associated with promotions and marketing—typically in the range of 10 percent of revenues—often do not include all the time spent by non-marketing staff in promotions and marketing activities. Deep retrofits can provide the content many companies are looking for in order to shape their branding story, offsetting money that would otherwise be spent developing other approaches to sustainability branding.



7. Customer Access and Sales: Deep retrofits contribute to improved customer access and sales because customers of all types—consumers, businesses, and governments—are beginning to require demonstrated sustainability performance and leadership as part of their decision to purchase. Deep retrofits also increase sales potential since more healthy, productive, and satisfied workers are more engaged and innovative.

8. Property-Derived Revenues: Deep energy retrofits can provide additional company revenues from the enhanced demand for deep retrofit properties from potential tenants in the event a company must lease some of its space or from potential buyers of the property in the event a company must sell. Other revenues can come from purchase agreements, energy services agreements, renewable energy certificates, and government or utility tax credits, rebates, or other subsidies.

9. Enterprise Risk Management/

Mitigation: Deep retrofits can significantly contribute to mitigating some of the more pressing business risks facing companies today, primarily by contributing to an enterprise's performance as measured by sustainability reputation and leadership; individual occupant health, productivity, and satisfaction; and space flexibility.

To assess a deep retrofit project, a professional must evaluate the outcomes of a deep energy retrofit on a given value element and then address how the outcomes create business value. But professionals need not evaluate and present each of the nine value elements. It may make most sense to select the most promising value elements for initial analysis and then proceed to the others, if possible, for a more complete analysis.

For more information on Deep Retrofit Value, download RMI's How to Calculate and Present Deep Retrofit Value at http://www.rmi.org/retrofit_depot_deepretrofitvalue.

If you have any questions about Deep Retrofit Value, please contact Mike Bendewald (mbendewald@rmi.org) or Douglas Miller (dmiller@rmi.org).