Capital planning, energy efficiency and renewable energy project financing: Long and short-term solutions to increase your ROI

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Across the U.S. and around the world, energy costs are rising and there are renewed efforts to "green" buildings via benchmarking, disclosure, regulatory mandates, social networking and other market forces. Many of these efforts are not just one-time events since they will require on-going annual reporting, tracking and monitoring of energy consumption.

Capital planning provides building owners the periodic opportunity to look closely at their building envelope (roof, walls, windows, etc.), mechanical (HVAC, boiler, chiller, etc.), electrical (lighting, motors, etc.) and plumbing system needs today and over the next 5-30 years (five-year plans should be updated every year). These studies can now include a unique energy perspective under the framework of this long-term planning effort.

By definition, capital reserve accounts are used for long-term capital investment projects or any other large and anticipated expenses that will be incurred in the future. Reserve funds are internally financed and set aside to ensure that adequate funding is available (or to at least partially finance the project). They allow for financing expensive equipment, modest construction projects and for providing a down payment for major construction projects. These accounts avoid over reliance on debt and help achieve a balance between pay-as-you-go debt and debt sources of capital financing. They can also help improve and maintain credit ratings.

Capital planning documents typically include:

* Reserve schedule providing a detailed list of building and site items grouped by category comparing their current condition versus estimated life and probable replacement cost.
* Expenditure schedule tabulating this work in a prioritized manner with estimates of annual expenditures.
* Cash flow analysis to determine the necessary annualized funding requirements.
* Capital Reserve Calendar presenting an annual itemized project list with estimated expenditures.
* Energy projects typically focus on conservation (i.e. reduce waste, to save) and efficiency (i.e. operate with minimum amount of effort or expense) and then utilization of renewable energy (i.e. wind, solar, etc.). Energy efficiency by itself can't be a way to reduce energy consumption unless accompanied by energy conservation (i.e. limiting consumption to a given level). The overall goal for energy projects is simply, Doing MORE with LESS.

Capital funded projects (without energy focus) typically require design, plans/specifications, bids, and construction services, that are provided by the architect/engineer, and are funded solely by the capital fund.

Instead of just replacing systems one for one/in-kind from a capital project list, energy efficiency (EE) and renewable energy (RE) projects under a preliminary energy assessment or detailed

financial grade energy audit look at a variety of energy saving measures including their cost, annual operating and life cycle savings, payback and financial incentives.

These studies can bring to light deep retrofit energy savings as well as low cost/no cost operating & maintenance opportunities for the building owner that will have a direct impact on OPEX and CAPEX funding requirements.

At the most fundamental level, new energy meters would drive a web-based energy dashboard that tracks and analyzes energy consumption in real-time to provide continuous benchmarking and verification of ongoing energy savings from projects. This allows the building owner and architect/engineer to track EE/RE projects instead of waiting a year or so later to find out if the project was successful and take the necessary steps to correct them if needed.

Energy project bundling and packaging from items listed on the Capital project list can allow for "energy related" projects to be done sooner, utilize renewable energy (where cost effective), pay for the complete or incremental costs of energy related projects and reduce annual energy consumption and related operating costs.

The capital account is funded internally by the building owner(s) to meet annual project needs. Additional incentives and financing options are available to the building owner with these "energy related" projects and new annual energy savings.

They include debt financing (EE/RE loans), lease purchase (Operating or Capital), Energy Service Companies (ESCO), power purchase agreements and energy service agreements (PPA/ESA), government and utility grant/loans and tax deductions, property assessed clean energy (PACE), on-bill utility financing, utility bill savings (tariff, demand response, procurement) and green tags (solar renewable energy credits, etc.)

Capital funded projects (with energy focus) typically require an energy audit, simulation, energy report, design, plans/specifications, bids, construction services, commissioning, and monitoring & verification, which are provided by the architect/engineer and can be funded from a variety of sources including the capital fund.

The best way for the building owner/manager to start this process would be to work with a capital reserve team that includes reserve specialists, licensed architects and engineers who are experienced in energy efficiency and renewable energy from design through construction including financing and building operations.

The capital reserve team will work closely with building owner through these additional steps to make sure they are on schedule, within budget and that the energy savings are verified and on target.

See also:

http://www.dsireusa.org/

http://www.buildingrating.org/

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