

ENSPiRE SESSION 5

Developing a Retrofit Strategy for Your Building(s). Your Roadmap.

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Engineering You to Save

This webinar explored the development of retrofit strategies for commercial and institutional buildings, emphasizing the importance of aligning retrofit planning with the building lifecycle. The presenters introduced a four-phase roadmap—Assess, Plan, Implement, and Maintain—designed to guide participants through identifying opportunities, building business cases, and executing retrofit projects.

The webinar covered retrofit categories, stakeholder engagement, financial modeling, and commissioning, while also addressing behavioral barriers to decision-making and highlighting tools to support implementation.

Why Retrofit Planning Matters

Retrofit projects offer a wide range of benefits, including:

- Direct and indirect energy savings
- Improved comfort and safety
- Reduced environmental impact
- Enhanced equipment reliability



A key takeaway is that retrofitting within the building lifecycle allows for strategic timing of upgrades, particularly during recommissioning, asset renewal, or capital planning phases.

This approach helps to lower incremental costs while maximizing the benefits of energy projects. Retrofits should be viewed as investments organizations can make that contribute to long-term operational performance and climate resilience.

Types of Retrofits

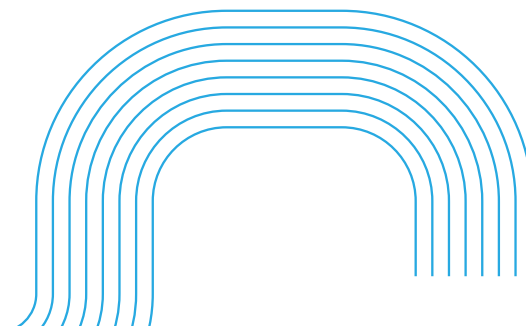
Retrofits were categorized into three levels: minor, major, and deep.

1. **Minor retrofits** involve one-off measures such as lighting upgrades or insulation improvements.
2. **Major retrofits** take a holistic approach, replacing systems like HVAC and windows, and often serve as a stepping stone to deep retrofits.
3. **Deep retrofits** involve complex and extensive system replacements and integration of renewable energy technologies, aiming for substantial reductions in energy use and greenhouse gas emissions.

For deep retrofits, careful staging and alignment with long-term capital plans is emphasized.
Retrofit Roadmap Framework

The roadmap framework encompasses four key phases:

1. **Assessment:** includes benchmarking building performance and conducting energy audits or EBCx to identify opportunities.
2. **Planning:** involves consolidating and prioritizing opportunities in alignment with Building Condition Assessments, staging retrofit measures, and building business cases with detailed financial savings estimates.
3. **Implementation:** where and when the retrofit project (or measure) is executed. It's important to employ effective project management fundamentals along with a sustained and collaborative commissioning process to ensure that retrofits deliver long term value.
4. **Maintenance:** Where training, operator engagement and ongoing commissioning is paramount to retrofit success over time.



Building the Business Case

Participants were guided through financial modeling techniques and tools including Life Cycle Costing Analysis (LCCA), which evaluates total ownership costs over the entire life cycle of the asset. RETScreen Expert was also presented as a tool offering a comprehensive platform for modeling energy, carbon, and financial impacts. To build a strong business case, it is important to use clear communication such as a one-page proposal to summarize retrofit benefits persuasively to decision-makers. Any proposals should include financial metrics, strategic alignment, and operational impacts.

Stakeholder Engagement & Behavioral Insights

Present bias, loss aversion, status quo bias, and confirmation bias are all Cognitive Bias barriers to energy efficiency adoption and approvals for retrofits. Strategies to overcome these biases included reframing benefits, emphasizing avoided losses, and preparing a rigorous project pitch.

A key takeaway is to make energy efficiency the default option and to present retrofit benefits in ways that are accessible, compelling, concise and relevant to decision-makers.

Implementation & Commissioning

Effective project management is essential to retrofit success. A five-step process—initiating, planning, executing, monitoring, and closing—was outlined, with comparisons made between in-house delivery models and third-party approaches such as Energy Performance Contracts (EPC) and Energy-as-a-Service (EaaS).

Commissioning is a continuous, integrated process that ensures building systems perform as intended from design through operation. It relies on collaboration, early engagement, and sustained feedback to close performance gaps and maximize long-term results.

Monitoring & Optimization

Commissioning evolves from a one-time setup to continuous performance management. As buildings advance through these stages, the focus shifts from ensuring design compliance to achieving long-term operational excellence through EBCx and ongoing monitoring and data-driven optimization. Engaging all levels of your organization – crucially building operators - throughout the retrofit process ensures stakeholders remain



Access Resources and the session tool kit [here](#):

Access the Session recording [here](#):

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