

COMMERCIAL PARTNER

FORESTCITY

Implementation Model: Enterprise-Wide Coordination

ORGANIZATION TYPE

Real estate ownership, management and development

BARRIER

A lack of a centralized approach to energy management led to missed opportunities for energy savings and value creation

SOLUTION

Creation of an Energy and Sustainability Group, development of energy action plans (EAPs) and resources to prioritize and present EAPs for upper management approval

OUTCOME

Enterprise-wide coordination of energy management activities and strategic implementation of energy-efficiency projects

Overview

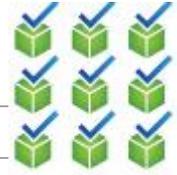
Forest City was committed to improving the energy efficiency of its portfolio and new developments but did not have the organizational structure or processes in place to prioritize and evaluate energy management projects, set goals or drive continuous improvement. The company revised its Energy Management Plan, convened an Energy and Sustainability Group to oversee the plan's implementation and developed Energy Action Plans (EAPs) to organize the effort.

Forest City Enterprises' Playbook

Policies



- Development of revised Energy Management Plan.
- Creation of an Energy and Sustainability Group within the Sustainability Department to provide “center-led” services to all sub-business units.
- Requirement that energy management goals align with corporate objectives.
- Requirement that energy efficiency projects costing more than \$25,000 be reviewed by the Energy and Sustainability Group.



Process

Forest City believes that optimizing energy management requires a well-structured organization with a clear definition of roles, responsibility and accountability at every level of the enterprise. The company brought together associates in existing corporate and property management positions with external resources to serve together on a new Energy and Sustainability Group. Led by the vice president of Energy and Sustainability, the group is comprised of the following roles:

- Manager of Energy Supply & Utilities
- Director of Energy Strategic Programs
- Energy Services Coordinator
- Analyst of Data Governance
- Tenant Energy Analyst
- Intelligent Buildings Analyst

Guided by the new Energy Management Plan promoting operational excellence and incorporating energy management best practices, the Energy and Sustainability Group developed Energy Action Plans (EAPs) in four operations:

1. **Energy Program Management** - addressing efficiency and maintenance issues.
2. **Internal Budgeting and Contract Management** - including vendor and energy audit contracts.
3. **Supply-side Utility Management** - reviewing issues such as aggregate utility purchasing opportunities, load/demand management, and utility bill audits to identify trends in usage that can help drive changes in behavioral practices.
4. **Data Management and Systems** - including building energy analytics, M&V plans, and improvements to energy management systems.

Two types of EAPs were developed: enabling EAPs and tactical EAPs. **Enabling EAPs** are initiatives that set the foundation for unlocking quantitative value from Tactical EAPs, but may not have direct energy savings associated with them (e.g. building energy audits). Buildings slated for capital projects and/or those with high energy intensities were prioritized for audits and evaluation. **Tactical EAPs** are initiatives that drive tangible economic value for Forest City, either through reductions in operating expenses or increases in revenue (e.g. lighting retrofits). Forest City collected additional ideas for EAPs from individual building managers. EAPs identify and address specific energy management opportunities at Forest City to create savings, avoid costs or generate incremental revenue. In order to secure corporate buy-in, EAPs had to be justified from a financial perspective. Financial indicators depend on the project description, but common financial hurdles include simple payback, statement of 10-year positive

cash flows, and overall one-year cash savings vs. project cost expressed as a return percentage. Each Tactical EAP has a projected value impact attached to it.

Once developed, EAPs were prioritized based on several categories:

- High return on investment (ROI).
- Foundational initiatives to enable growth.
- Holds strategic value and supports core markets.
- Projects that provide long-term opportunities to develop high-performance buildings.

By grouping EAPs in these areas, Forest City could prioritize and strategically implement each EAP and justify specific projects to upper management. Forest City also developed a timeline outlining when various EAPs should be initiated. Most related EAPs are sequenced to ensure that Enabling EAPs are underway or completed before the Tactical EAPs they support.

Click [here](#) to view the Energy Action Plan timeline.



Outreach

The Energy and Sustainability Group met monthly over nearly a year with the Operational Excellence Steering Committee, consisting of the most senior executives in the organization, to walk through the plan development process and receive guidance on direction. These meetings assured the Energy and Sustainability Group that their strategy was meeting executives' expectations and helped all levels of the organization feel comfortable enough with the EAPs to approve their implementation. The Steering Committee also made sure the Energy and Sustainability Group's goals and objectives were aligned with Forest City's overall strategic plan.



Tools and Resources

Sample Energy Action Plan (EAP) - Describes creation of a corporate energy management function (enabling EAP).

Energy Project Tracking Spreadsheet - Spreadsheet for tracking the status, costs and anticipated savings from multiple energy efficiency projects.

Monthly Executive Scorecard for Energy Projects - Slide providing high-level overview of EAPs underway and associated costs and savings.

Energy Asset Inventory - Multi-tab spreadsheet that can be used to inventory organizational energy-related assets and information.

Alignment Roadmap - A worksheet and guide for aligning energy management objectives with the core corporate mission.

Energy Analyst Description - Description of desired skillset, background, and responsibilities for an energy analyst serving as part of the Energy and Sustainability Group.

Tools:

- [Sample Energy Action Plan \(EAP\)](#)
- [Energy Project Tracking Spreadsheet](#)
- [Monthly Executive Scorecard for Energy Projects](#)
- [Energy Asset Inventory](#)
- [Alignment Roadmap](#)
- [Energy Analyst Description](#)



Measuring Success

In order to track success, Forest City manages an Excel-based energy project tracking document that itemizes each energy savings project, sortable by EAP, building, technology or project description and project year. The tool also tracks information on potential projects and savings, funding status (approved by upper management) and funding source (capital resources, operational budget, or alternate financing). Once a project is deemed complete, Forest City begins a performance-year analysis compared to a previous-year baseline to determine actual savings. For projects that cannot be tracked using utility data, Forest City has used modeled savings. The tracking document will be loaded to an internal employee Team Site for all property manager and engineers to easily access and utilize its reporting capabilities.

Tools:

- [Energy Project Tracking Spreadsheet](#)



Outcomes

Forest City has developed 35 individual EAPs and implemented plans including:

- Utility Bill Audits (see below to learn more)
- High Return Efficiency Projects (see below to learn more)
- Demand Management (see below to learn more)
- Best Practice Awareness & Communications with Building Managers and Tenants
- Property Assessments
- Incentive Management
- Data Collection & Assessment

Utility Bill Audits

Forest City recognizes that having efficiency projects, planned replacements and the right equipment is only part of the equation. Maintenance and control is a major contributor to high performance. One of the best ways to monitor trends and anomalies is through an extensive audit of utility bills. Forest City's data governance analyst reviews high-use bills monthly, comparing usage to the previous month and previous year, and creating alerts in the billing software system for further review by property managers, who are expected to research the issues and provide feedback on whether it is a one-time occurrence or an identification of a facility operations trend that could be corrected.

Demand Management

Demand charges on a utility bill and capacity charges on an electric bill typically make up about 40-50 percent of the bill. Managing the peak-demand profile is therefore crucial to expense reduction. Real-time data loggers were installed at Forest City's largest properties to monitor demands so that building management staff could better manage HVAC, back-up generation and lighting loads on peak days. Forest City participates in demand response markets as an additional incentive for load management.

High Return Efficiency Projects

At the onset of the Strategic Plan, the ESG group contacted each property to determine their wish list of projects, given unlimited resources and no constraints. Based on past experience and industry norms, Forest City assigned a potential savings value to each project. Forest City then prioritized high-return projects to recommend for immediate funding. This perspective allowed Forest City to avoid implementing temporary solutions where a more holistic approach was needed. For example, if a building manager requests replacement of a rooftop air conditioning unit because it is not meeting space comfort requirements, the Forest City team would look first at the heat load in the building and consider solutions like lighting retrofits and increased shading. These projects may be more affordable with better paybacks, and may better address the underlying load issue. The RTU can then be evaluated to determine if it is performing better under reduced loads.