

Energy Action Checklist



Sustaining energy savings after a capital retrofit project is a familiar challenge. By taking a strategic approach to energy management, commercial, industrial, and institutional organizations can make energy savings part of everyone's job rather than the responsibility of just the facility manager or the energy director. This Energy Action Checklist is a compendium of best practices for progressively implementing an organizationwide, cross-cutting energy management strategy.

Step by Step

Assessing your energy management strategy doesn't have to be complicated. The following steps will get you started.

- Print the checklist, which begins on the next page, and quickly complete a preliminary assessment. Highlight the boxes that best depict the current status of your organization's energy management strategy. In what areas are you a Novice or a Superstar? (Mark "NA" in the Superstar box for items that are not relevant for your organization.)
- Review the checklist with your energy provider's account representative to gather background information that can inform the evolution of your strategy. Your account rep can help to interpret items on the checklist, recommend relevant utility programs, and assess which issues may be addressed in-house or with third-party assistance.
- Share the checklist with other staff in your organization, representing a variety of levels and functions. Have them review the checklist in advance, and then come to a consensus as a

Other Energy Management Assessment Tools

There are tools similar to this Energy Action Checklist that you could use to evaluate your energy management strategies. EnVINTA's One-2-Five Energy™ software lets you benchmark your strategy against those of others in your industry (www.envinta.com). Trained facilitators help you conduct an initial assessment. Georgia Tech's Management System for Energy is designed to align with the documentation requirements of ISO 14000 certification (<http://webstore.ansi.org>, ANSI/MSE 2000:2005). Energy Star's Energy Program Assessment Matrix is a one-page spreadsheet that focuses on energy efficiency (www.energystar.gov). And the Building Research Establishment's Energy Management Matrix delves into some technical procedures in its 14 pages of matrices (www.thecarbontrust.co.uk, "Good Practice Guide 306").

group in a kick-off meeting. Recruit participants to continue regular meetings as an "energy team."

- Select the most-critical issues to address, and review your progress with this checklist at energy-team meetings and at regular intervals with your energy provider's account representative.

One crucial element of a successful companywide energy management strategy is to compose a concise mission or policy statement that relates energy to other top-level goals for your organization. This policy statement, if endorsed by upper management, will be a source of authority and momentum as you implement an energy management strategy.

Energy Action Checklist

	Novice	Contender	Professional	Superstar
Goals and mandates				
Energy budgeting	No annual budget specifically for energy.	Annual energy budget based on previous year.	Annual baseline ^a for energy costs established companywide; annual energy budget based on past performance, targets, and market expectations.	Annual energy budget set according to targets and market expectations, statistically normalized for weather and operations by facility.
Energy consumption reductions	No stated energy-use reduction goal or mandate.	General companywide energy-use reduction goal.	Annual baseline ^a for energy use and annual energy-use reduction target established companywide.	Individual facility annual energy-use reduction targets set based on analysis of historical performance and linked to operations and investment planning.
Greenhouse gas (GHG) emissions reductions	No GHG reduction goal or mandate.	General GHG reduction goal, may be integrated in energy-use reduction mandate.	Annual baseline ^a for GHG emissions and annual GHG reduction target established companywide.	Individual facility annual GHG reduction targets set based on historical performance and linked to operations and investment planning.
Responsible parties	No specific assignment of responsibility for energy or GHG targets.	Energy or facility manager(s) assigned responsibility for goals such as savings from procurement and savings from capital projects.	In addition, regular cross-functional staff meetings on energy topics (an energy team).	Visible high-level commitment to energy management with responsibility fully disseminated throughout organization.
Monitoring, targeting, and assessment				
Bill data and key performance indicator^b (KPI) tracking	Only energy expenditure data maintained electronically (energy usage data not entered into spreadsheets or other data warehouse).	Facility bill data (cost and usage) entered monthly into spreadsheets or data warehouse software and regularly checked against previous bills. Annual companywide budget versus actual review.	In addition, monthly facility bill data adjusted for square footage, production, or revenue (using "divide by" calculation) and checked against past adjusted usage. Some tracking of companywide KPIs.	In addition, facility bill data regularly checked against budgets and KPIs for each facility, and benchmarked in Energy Star Portfolio Manager or by using other statistically normalized benchmarking process.
Interval meter and submeter data tracking^c	No meter data tracking.	Periodic, unscheduled inspection of meter data.	Regular inspection of meter data by staff familiar with normal patterns; some problem diagnosis and correction. Some use of temporary submeters.	Procedures and results documented for regular inspection of meter data, with problem diagnosis and correction. Some automated alerting.

Notes: a. Setting a baseline refers to calculation of energy performance in a normal year, to be used as a comparison metric.

b. A key performance indicator may be energy usage per square foot or per ton of production, or other metric.

c. Interval meter data tracking is relevant for facilities with interval meters.

Source: E SOURCE



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Energy supply management and procurement				
Supply contract management	Renew contracts as they expire.	Evaluate contracts prior to expiration; assess alternatives. Rely on flat-rate contracts.	Regularly track energy market and evaluate contract performance. Hedge energy price risk with on-site generation, time-of-use contracts, renewable energy purchases, and/or fuel switching.	In addition, hedge energy price risk with financial and physical instruments.
Regulated rate management	Unable to anticipate monthly bill variations. No investigation of rate alternatives.	Annually confirm regulated rates and review market trends with utility account manager. Assess regulated rate alternatives.	In addition, hedge energy price risk with on-site generation, renewable energy purchases, and/or fuel switching. Consider time-based rates.	In addition, put methodology in place for estimating future bills, including fuel cost adjustments.
Load management	No load management to control demand charges or participate in demand-response programs.	Some load management strategies to control demand charges.	Load management coordinated with time-based rates or peak-shaving/-shifting programs.	Centrally monitored and remote-controlled or automated load management.
Power quality and reliability	No power quality or reliability tracking. Cost of outages and power quality problems unknown.	Review power interruption events with energy provider.	Proactively discuss power failure response plan and power quality issues with energy provider. Estimate cost of outages. Uninterruptible power supply and/or on-site generation in place for critical load.	In addition, estimate cost of power quality problems. Conduct facility power quality audit or identify sensitive equipment; install appropriate buffering equipment.
Capital project planning for energy savings				
Project planning and tracking	No energy-saving projects identified.	Facility manager conducts walk-through audit. Compile list of potential energy-saving projects with estimated cost and payback; compare and prioritize projects.	In addition, based on professional full-facility audits, calculate estimated energy savings in a spreadsheet, and/or measure actual energy savings.	Maintain central database of projects implemented and proposed; regularly reprioritize and update opportunity list based on operational or energy market changes.
Project financing	Implement projects as utility, governmental, or other rebates and grants become available.	Corporate policy clearly defines financial evaluation criteria for energy-efficiency investments.	Corporate policy ensures that energy-efficiency investments are assessed equally with other capital investments.	Funds annually allocated for energy-efficiency investments (may be loans, revolving funds, or shared savings mechanisms).
Equipment procurement	Equipment replacement and procurement policies do not include energy considerations.	Policies for some types of equipment procurement specifically include energy considerations.	All capital-equipment purchase, retrofit, or replacement decisions include energy considerations.	Capital-equipment condition assessments and replacement schedules are maintained centrally and regularly updated.

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Operational and behavioral measures				
Internal communications for energy awareness	No internal broadcast to staff on amount of energy used or energy spending.	Sporadically inform staff of energy spending (or usage) and general energy-use reduction goal.	Regularly and prominently inform all staff of companywide energy spending or usage level, plus trends, goals, and some key performance indicators.	In addition, provide organized and accessible mechanisms for sharing facility-level KPI trends and best practices for saving energy.
Behavioral campaigns for energy savings	No internal initiatives promoting specific energy-saving behaviors.	Distribute posters and/or stickers to promote energy-saving behavior.	In addition, broadcast energy-saving behavior reminders by e-mail, newsletter, or "energy monitors."	In addition, host regularly occurring contests to promote energy-saving behavior.
Training	Training does not specifically mention energy issues.	Training for facility operations staff includes energy-saving procedures.	Provide energy-saving training for all employees, for example, on lighting procedures, temperature settings, computer power settings.	Training is also provided for external contractors.
Equipment scheduling and controls^d	Operating schedules are adjusted by manual controls or integral plant controls (for example, boiler thermostat).	Some discrete sensors and programmable controls, such as zonal temperature measurement and control, are used.	Building management system installed and operated according to occupancy estimates. Use of occupancy sensors. Procedures in place to shut down processes not in use.	Additional controls such as CO ₂ sensors and variable-speed drives. Automated process interruption and shutdown to reduce unnecessary equipment operation.
Equipment maintenance^d	No preventive maintenance.	Minimal preventive maintenance.	Regularly scheduled preventive maintenance with documentation of repairs, tuning, replacement, and servicing. Manuals specify maintenance procedures.	Regular maintenance followed by performance monitoring. Maintenance procedures (manuals) documented based on commissioning.
System diagnostics and commissioning	No commissioning performed on facility.	Individual system commissioning and/or HVAC testing and balancing performed occasionally.	Full commissioning performed, plus regular HVAC testing and balancing.	In addition, ongoing monitoring, diagnosing, and adjusting, such as Continuous Commissioning [®] . ^e
Achievement and incentives				
Assessment and recognition	No procedures for recognition of energy-saving achievements.	Post-project evaluation of results and identification of successful projects.	Recognize facilities and/or managers that improve energy performance and/or meet targets.	In addition, provide bonuses corresponding to energy performance targets.

Notes: d. Any equipment that uses energy to operate may be relevant here.

e. Continuous Commissioning is a process developed by Texas A&M University.

Source: E SOURCE

