

# INFLUENCING CULTURAL CHANGE AS A NEW ENERGY MANAGER

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## ABSTRACT

Energy Management positions are becoming more and more prevalent at campuses, large commercial buildings, and manufacturing facilities across the globe. Societal influences, the desire to become more “green” and increasing energy costs are pushing companies to invest more proactively in sustainability and in employees whose jobs are dedicated towards reducing overall energy consumption and costs. When hiring into an Energy Manager position, it is often difficult to establish roles and responsibilities and to influence real cultural change within the organization. An Energy Manager is likely to face a number of barriers when first stepping into a newly created position. These include corporate influences and structure, available capital, and employee pushback. To overcome these potential obstacles it is important to fully understand the major roles and responsibilities of a typical Energy Manager, evaluate existing company energy philosophy, recognize first steps towards establishing your position within the company hierarchy, and recognize the value of establishing allies. Additional strategies toward becoming a successful Energy Manager include establishing goals that align with the company’s overall financial strategy, developing a comprehensive Energy Management Plan, selecting the right first project for implementation, and understanding the true value of measurement & verification (M&V).

## WHERE TO START?

So you’ve just been hired into a newly created Energy Manager position, now what? Whether you’re an experienced Energy Manager or just getting your feet wet in the profession, you’re likely to face a number of barriers that could impede your influence and overall progress. Before the ink dries on your new business cards it’s time to take a brief moment for some soul searching.

### Discover Your Purpose

At one point, someone in the company decided they needed to create your position, where their vision for the Energy Manager’s job responsibilities may not match your own perception. So ask yourself, why were you hired and what are the expectations? There are many reasons to have an Energy Manager on staff; including carbon footprint reduction, public perception, “Green” product labeling,

change in leadership and/or corporate philosophy, preparation for future growth or down-sizing, and, of course, utility cost savings. Understanding the drivers behind your hiring will help you align your goals and focus with those of the business.

Also, take a look at where you’ve been placed on the company’s organizational chart. The department in which you’ve been assigned, and specifically the person to whom you report can be very telling about how the Energy Manager’s position is perceived and your expected functions. An Energy Manager assigned to the facilities group will likely be expected to focus more on the technical aspects of improving energy efficiency related to building systems. Whereas if he or she was assigned to someone in a financial department, the focus may be geared more towards tracking, forecasting and purchasing energy through the utilities.

### Build Alliances

Successful energy management is not a one person job; alliances and teamwork are necessary for identifying issues, developing solutions, performing analyses, obtaining project approvals and implementing solutions. If possible, find out whose idea it was to establish the Energy Manager’s position. They will undoubtedly be one of, if not your biggest supporter, as your successes and failures will reflect directly back on them. Find out who else in the company shares your passion for energy; many of those folks will likely seek you out on their own time within your first few days or weeks on the job.

### Determine How Things Work

Be sure to understand the procedural aspects of how things are done in the company and specifically in what way they relate to your job duties. A good example is the project review and approval process. Does the company have a standard capital expenditure request form and/or procedure, what information is required and at what level of detail? Who is responsible for reviewing project requests and how long does the process typically take? Are there monetary thresholds for the level of scrutiny a project will face? What are the requirements for a project’s simple payback or other financial metrics? Whose budget will the expenditure be funded from and are the funds available?

Answering these questions early on will unquestionably save time and rework efforts when it comes to the point of actually going through the process.

## **EMPLOYEE ENGAGEMENT**

### **Establish a Positive Atmosphere**

A company's employees are often considered one of the most valuable assets within the organization. Engaging and leveraging the existing knowledge is essential towards the short and long term success of energy management. However, since you represent change, it is not uncommon for an Energy Manager to receive a luke-warm welcome by long-time employees; which is unfortunate as they can be some of the most knowledgeable in the organization. Overcoming and changing another's negative perspective can be challenging and it's essential to establish a positive vibe from the very beginning. As an Energy Manager, you are there to help make improvements, not fix mistakes. Avoid focusing on negative actions and be sure to point out where you feel someone has been doing a good job. Furthermore, do your best not to add work or tasks to others as you gather information and develop projects. Lean on your supporters, and support your critics.

### **Create a Cross-Functional Energy Team**

Cross-Functional Energy Teams are a highly proven and effective means of pooling knowledge and ideas while providing a more interactive platform for including all facets of the company's operations in the overall energy management initiative. Having insight from each area and/or department offers a more comprehensive view of how energy efficiency is approached across the enterprise. The main objectives of a Cross-Functional Energy Team could include the following:

- Improve energy awareness across the company.
- Drive improvements that lead to lower energy intensity across the site.
- Develop energy efficiency and operational improvement projects.
- Discuss the feasibility of projects, identify potential road blocks, and solutions.
- Offer an additional platforms for employee suggestions towards improvement strategies.
- Develop ideas and facilitate employee education/training as it pertains to energy efficiency.
- Discuss successes, failures and lessons learned.
- Develop energy related news releases to be shared with the entire organization.

### **Listen**

Many companies already have an established practice of encouraging employees to submit their ideas to management. However, it is not uncommon for these ideas to go without action or response, leaving the employees feeling ignored. If an active suggestion mechanism is already in place, request management to forward energy

related items to you and follow up with the submitters so they know you are reviewing their ideas. If no employee suggestion box exists, create one and get the word out.

## **ESTABLISH YOUR BASELINE & GOALS**

### **Facility Baseline**

As the Energy Manager, at one point or another, you will be asked how things have progressed since you started. Depending on your facility and the person asking, this could be in reference to a number of different metrics including monetary savings, actual energy savings, energy intensity improvements, project performance, etc. No matter which metric being referenced in the question, the only way to answer with any certainty is to first have a firm understanding of the facility's baseline. There are many ways to establish baseline energy performance and it is important that you select the one(s) which represent the specific site or operation. For example, a high-rise office building may choose to baseline their building using annual energy consumption as a function of occupied or rented space. Whereas a manufacturing facility would likely establish their baseline as a function of production volume. Whichever method is chosen, it is essential that the calculation utilizes reliable and easily obtainable data; the most basic of which being utility meter readings.

### **Key Performance Indicators**

Identifying and tracking Key Performance Indicators (KPIs) is essential to the overall energy management initiative. Values relating to specific energy consumption (i.e. Btu/widget) should be identified as KPIs for performance and energy intensity which can be applied at both the macro (i.e. overall system) and micro (i.e. individual equipment) levels. The advantage of utilizing KPIs in this manner is that you are able to identify which systems and components are the most energy intensive and offer the best opportunities for improvement. Additionally, these KPIs can be used to track performance going forward and identify possible issues when irregularities are discovered.

### **Energy Reduction Goals**

Establishing overall energy reduction goals can be approached from several angles. Some choose to take the more conservative tactic of under-promising in hopes of over-achieving. Others may choose to be more aggressive with their goals in hopes of encouraging themselves to "stretch" for a possibly unattainable goal. Each strategy carries its own risks and rewards, and therefore choosing energy reduction goals that fall in the median is typically preferred.

When possible, energy reduction goals should align with business financial goals. A typical financial metric

primarily used to track overall performance is earnings before interest, tax, depreciation, and amortization (EBITDA). Companies often set goals to increase EBITDA by a specific percentage or monetary amount over a period of time. A simple method for aligning energy reduction goals with EBITDA goals is to determine total annual energy spend as a percentage of the total annual company operating expenses. Then apply that percentage to the overall EBITDA goal to determine your energy goal. For example, if energy accounts for 25% of the total annual operating expenses, and there is a goal to increase EBITDA by \$100,000 over a one year period, then energy reduction should account for \$25,000 of the overall goal.

#### **DEVELOP AN ENERGY MANAGEMENT PLAN**

A comprehensive Energy Management Plan (EMP) will act as the framework for your efforts as an Energy Manager. Many of the items to be included in the EMP have been previously discussed; and include a facility profile, employee engagement plan, energy baseline assessment and analysis methodology, energy goals, target areas, project development and implementation processes, M&V approaches, and reporting strategies.

In order for energy management to be truly successful, it has to be a part of company culture, and that starts with the executive leadership. Once an EMP is completed, an effective tactic to show executive commitment to energy reduction is to have company leadership physically sign the EMP document. This simple act demonstrates to the overall organization that the company leaders have taken notice and fully support the energy initiative.

#### **PICK THE RIGHT FIRST PROJECT**

Like a first look on a blind date, your first energy project is going to set the tone for your experience as an Energy Manager by leaving a lasting impression on rest of the organization. Your initial energy project should be one that can be taken through all stages of development; including analysis, feasibility review, capital expense request, presentation to management, funding, execution, and finally M&V. Another item to consider is the level of capital required for the project. Avoid larger, more expensive projects as they typically require more intensive development efforts, face higher scrutiny during the approval process, and take a longer time to implement.

Look for a project that offers added benefits such as replacing faulty equipment, reducing maintenance efforts, correcting comfort issues, improving production output, or reducing product scrap. Furthermore, select a project based on proven technology with a high probability of success. Your worst nightmare is having your initial project either not function or not produce energy savings. Finally, it should be re-emphasized that M&V can be performed on

the selected project so you are able to definitively prove its success.

#### **THE VALUE OF MEASUREMENT & VERIFICATION**

The value of performing M&V is often overlooked after a project is implemented. Completing a period of M&V enables the project's true energy savings to be determined as well as establishing new system efficiencies and baselines. M&V can also identify when a project is not performing as intended, which can indicate potential issues with the installation or perhaps with the analysis used to estimate the energy savings. Understanding true energy performance is especially important for determining the real value of repeatable projects that could be implemented on other systems and areas.

M&V should be performed on all projects whenever possible and utilize any available trend data or cost-effective monitoring techniques. Larger projects (i.e. capital investment of \$250,000 or more) will often include metering equipment as part of the project. However, smaller projects may be associated with systems that lack existing monitoring or where it is not economical to install permanent monitoring equipment. In these cases, spot readings and/or temporary data loggers should be deployed for short term M&V. The Energy Manager is often responsible for establishing a standard protocol for M&V plan development and execution. Each M&V plan should be finalized and implemented on a project specific basis, maximizing any available monitoring equipment while most accurately replicating baseline conditions. Once completed, share the results, especially with those involved in the project.

#### **AUTHORS' BIOGRAPHY**

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Mr. Avalone is a Project Manager and Mechanical Engineer at CHA Consulting where he is responsible for the engineering design of mechanical and industrial systems, conducting energy audits in commercial and industrial facilities, managing energy efficiency improvement projects, managing design and construction projects and performing Industrial Outreach and project management duties on behalf of NYSERDA's Industrial & Process Efficiency and FlexTech programs.

Mr. Avalone has extensive experience providing industrial energy management solutions, including conducting and managing energy studies, developing energy management

plans and implementing energy conservation solutions. He has worked with over 100 different manufacturing companies at facilities throughout the U.S. including the automotive, electronics, pharmaceuticals, textiles, mining, food & beverage, glass & optics, petroleum, defense, paper, power plants and plastics industries.

Mr. Avalone received his B.S. in Mechanical Engineering from Union College. He is a registered Professional Engineer in NYS, a Certified Energy Manager and LEED Accredited Professional. He is a member of the American Society of Heating Refrigeration & Air Conditioning Engineers and the Association of Energy Engineers, and serves on the board of directors for the Rochester Chapter of the Association for Facilities Engineering, where he is currently the President.

Mr. Avalone is the 2017 Northeast Region Young Energy Professional of the Year by the Association of Energy Engineers (AEE), presented at the 2017 World Energy Engineering Congress in Atlanta.

