

# How to Save on Energy Costs in Manufacturing

*Industrial manufacturers are the biggest consumers of power. Find out how to manage energy consumption and save on cost.*

AUSTIN, TEXAS, UNITED STATES, December 2, 2020 /EINPresswire.com/ -- Industrial manufacturers are among the biggest domestic users of energy — consuming more than 24,000 Tera BTU annually according to the most recent US government surveys. When you add up the numbers, it's equivalent to powering over 450 million homes a year with electricity. But with careful analysis and proper investment, you can reduce your industrial energy consumption and improve your bottom line. Here is how to get started.

Total Energy Use By US Domestic Industrial Manufacturers (2014 EIA Survey)

To be honest, it's pretty hard to wrap your head around how big these numbers are. To put them into perspective, we made the following calculation: the total annual US manufacturing energy use (24,084 Tera BTU) is enough to power nearly 460 million homes with electricity. That's quite a lot, especially considering there are currently only 128 million households in the US.

Given the scale of these numbers, finding savings of even a few percentage points can make a big difference to the bottom line. Let's get started!

How To Save Money On Energy Use In An Industrial Setting

The logo for FORMASPACE, featuring a blue circular icon with a white 'S' shape inside, followed by the word "FORMASPACE" in black.

Formaspace custom manufactured these mobile stainless steel chemical resistant workbenches for a sterile work environment.

Here are four practical steps you can take to reduce your energy use at your industrial plant.

### Step 1. Identify The Energy Champions On Your Team

Do you already have an existing process or quality improvement program (such as Six Sigma) in place at your [manufacturing facility](#)? If so, you are one step ahead of the game.

Why?

Improving quality and productivity is an ongoing process – so too is managing your energy use. In other words, this is not a ‘one and done’ operation – you need to treat energy management as a serious ongoing project – just like any other continuous improvement process.

 FORMASPACE



Shown here is an extra-long workbench made for an organization conducting scientific research and advanced technology development in maritime applications.

That’s why modeling your energy saving initiative after some well regarded (proven) continuous improvement programs, such as lean manufacturing, agile programming, Six Sigma, and the like will help you achieve long-term success. (If you need a primer or a refresher on these programs, take a look at our [guide to lean manufacturing here](#).)

“

Your initial energy audit needs to identify your current gross energy usage, which can be used to compare to available industry benchmarks in your particular sector.”

*Formaspace*

While it’s true that everyone at your manufacturing facility is collectively responsible for saving energy, step one will be to identify a team of “energy champions” within your organization who are empowered to investigate existing costs and find ways to achieve new levels of energy efficiency.

### Step 2. Scope Out A Project Plan For A Thorough Energy Audit And Identify Relevant Benchmarks

Conducting a thorough energy audit is a challenging task – it requires the sleuthing skills of

Sherlock Holmes and the inventiveness (and electrical skills) of Thomas Edison.

Your initial energy audit needs to identify your current gross energy usage, which can be used to compare to available industry benchmarks in your particular sector. (Later we'll be looking at parsing out energy use by specific production processes and by time of day.)

Fortunately, the EPA, the Department of Energy, and the Energy Information Agency provide free energy consumption benchmarks for many different industrial sectors to help you get started.

Light Industry Example:  
Pharmaceutical Manufacturing



Here is a stainless steel top we built for a large pharma supplier that features a stainless steel top workbench with a built-in cutout for custom scale.

Let's start with a light industry example: pharmaceutical manufacturing.

The EPA reports that, on average, domestic pharmaceutical manufacturers expend 70% of their energy costs on electricity (totaling \$806 million nationally in 2013) and 30% on fuels (totaling \$349 million in 2013).

Most of your energy use will either fall into process-related (e.g. energy used for powering equipment and production lines) or non-process related categories (e.g. the energy used to power lighting, heating and cooling, the office, etc.).

Of course, your actual energy use is highly dependent on the size of the plant. As we'll see in the next step, there is also a big variation in energy use between the two main types of pharmaceuticals plants – those that process bulk pharma chemicals (more energy-intensive) or operating a fill-finish facility (less energy-intensive.)

Heavy Manufacturing Examples: Iron And Steel, Chemical Manufacturing

No industrial energy audit is easy – but it can be even more challenging in the heavy manufacturing sector.

Why? There are many reasons, but for starters, many heavy manufacturing plants require evaluating three different energy “buckets” that are closely tied together:

#### A. Onsite Energy Generation

Onsite power plants supplement the external electric power grid. Examples include Conventional Boilers / Steam Plants, Combined Heat and Power (known as CHP or Co-Generation), Renewables, and more.

#### B. Process Energy

Energy systems used to turn raw materials into usable products. (Examples include blast furnaces and smelters for iron and steel production as well as intensive heating and cooling processes used in chemical manufacturing.)

#### C. Non-Process Energy

Energy systems used for maintaining the building HVAC environment, lighting, office support, etc.

To get an overview of how this works in practice, take a look at the energy flow diagrams below.

The first diagram is for a chemical manufacturing plant, followed by one for an iron and steel plant.

Step 3: Quantify Energy Use By Equipment Type, As Well As By Production Process And Time Of Day.

In the previous step, we introduced the idea of scoping an energy audit and comparing your energy use to available industry benchmarks.

But there is much more work to be done to really understand your unique industrial energy usage and to uncover potential beneficial energy savings. We need to go deeper – in three areas:



Major oil and gas customers also choose custom Formaspace furniture for their upstream and downstream applications. Shown above are heavy-duty workstations we manufactured for reworking oil field drilling equipment.

## A. Measure Your Energy Use By Individual Equipment Or System

The more granular the information, the better decisions you can make. That's why it's important to meter energy use for specific equipment as it's used in the real-world conditions of your plant. (The factory specs are helpful to a degree, but they may be unrealistic, or you may discover a machine is way out of spec.)

[Read more...](#)

Julia Solodovnikova

Formaspace

+1 800-251-1505

[email us here](#)

Visit us on social media:

[Facebook](#)

[Twitter](#)

[LinkedIn](#)

---

This press release can be viewed online at: <https://www.einpresswire.com/article/531945007>

EIN Presswire's priority is source transparency. We do not allow opaque clients, and our editors try to be careful about weeding out false and misleading content. As a user, if you see something we have missed, please do bring it to our attention. Your help is welcome. EIN Presswire, Everyone's Internet News Presswire™, tries to define some of the boundaries that are reasonable in today's world. Please see our Editorial Guidelines for more information.

© 1995-2020 IPD Group, Inc. All Right Reserved.