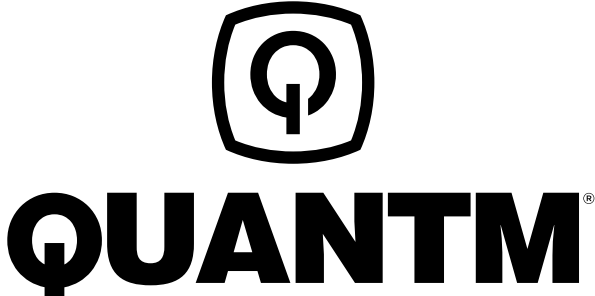


Big Changes Coming to the Factory Floor



# PUMPS AS PROFIT DRIVERS:

Where QUANTM Technology Fits into Manufacturing Sustainability



## Manufacturers Are Discovering Sustainable Paths to Profitability

Manufacturing processes consume roughly one-third of the world's energy, and the industry produces about a billion metric tons of CO2 emissions annually. While statistics like these have been dissected for decades, the massive energy consumption of the world's factory floors is under increasing scrutiny from investors, customers, government agencies and boardrooms. As a result, sustainability is no longer a soft topic. It's a consideration that will increasingly drive profitability and capital investment decisions moving forward.

Investors are being required to demonstrate that their portfolios are comprised of responsible businesses. Consumers are beginning to demand evidence of sustainability throughout the entire supply chain before they commit to buying products. Government agencies are poised to enforce strict regulations regarding energy consumption and carbon emissions. Board members at companies of all sizes are aware of these changes and are pressuring their CEOs and senior company leaders to find answers quickly, especially as it relates to energy consumption and carbon emission of their operations.

Another economic driver is utility companies themselves. In the United States, for example, many of them have access to federal money they can use to fund promising initiatives for their customers — specifically, projects focused on electrification strategies in operations that are currently heavy users of power.

Clearly, sustainability, electrification and carbon reduction are paths that manufacturers of all sizes need to pursue. The key for most organizations is finding a balance of corporate responsibility, business profitability, appeasing investors, and compliance with regulations — and determining what kind of steps are actionable now. The answer to these questions isn't simply just "buy the right product" or "develop a forward-looking strategy." It's a combination of both. This report outlines specific steps manufacturers can take to drive meaningful energy savings and build sustainable, modern operations.



# Table of Contents

- 1 The Economic Case for Energy Savings & Sustainability**
- 2 Quick Cost-Cutting Wins for Energy Saving**
- 3 How New Technologies Cut Energy Costs and Carbon Emissions**
- 4 Replacing Pneumatic Pumps with Electric**
- 5 Creating a Sustainability Plan Built for Your Company**
- 6 How Graco Can Help You Build a Cost-Saving Strategy**

**Beyond good citizenship:  
Sustainability becomes a profit strategy**

Historically, sustainability efforts have been seen as brand-building. Companies would invest in energy-efficient technologies and infrastructures and expect “soft” payback, especially in terms of positive publicity and feel-good statements on websites and in investor meetings. But with the rise of electrification and the escalating cost of power and government funding for energy-saving improvements, sustainability is now a prominent strategy for driving stronger margins and sustained profitability. In fact, in the [2021 survey by McKinsey](#), respondents at value-creating companies said they address sustainability to align with their mission and values or to “make a tangible, positive impact on an issue” that drives customer buying behaviors and investor practices.

*The consumer and investor trends listed above – capital flowing increasingly toward companies that commit to real change – mean that even this shift toward broad-ranging corporate responsibility and environmental accountability has a compelling economic angle.*

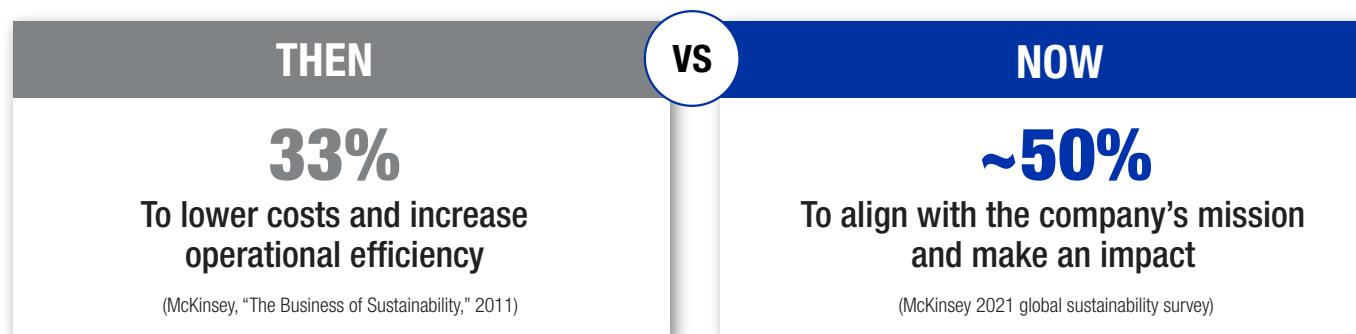
## The Economic Case for Energy Savings & Sustainability

To put a fine point on it: **Energy savings and sustainability are becoming profit drivers.** In addition to investor requirements and consumer behaviors, government agencies are unleashing floods of investment in sustainability. By 2030, the European Union (EU) will deploy more than €1 trillion (approx. \$1.18 trillion) in public and private investments as part of the Green New Deal. The US will spend \$5 trillion on the Climate and Environmental Justice Plan by 2050. China is already spending trillions of dollars to achieve its stated goal of carbon neutrality by 2060. Federal funds in the U.S., for example, are resulting in equipment rebate programs for both greenfield and brownfield projects initiated by manufacturing companies.

In addition to significant financial incentives, manufacturers across multiple industries feel pressure from consumers, investors and regulators to demonstrate meaningful sustainability improvements. No matter where it’s coming from, all that pressure ties back to – you guessed it – your pocketbook.

- **Consumers** are purchasing from suppliers that show a real commitment to sustainability.
- **Investors** are more selective than ever about what brands they support, often based on factors like their sustainability and corporate social responsibility initiatives.
- **Regulators** provide a bevy of incentives like tax credits to manufacturers in exchange for sustainability bona fides, like reduced energy consumption and carbon emissions.
- **Governments** are investing significantly in solutions that help them meet global sustainability benchmarks.

### Companies’ top sustainability motivators have changed



0.5 HP pneumatic tool consuming an  
avg 20.7 cfm of air =

**1320 kWh/year**

VS

An equivalent corded  
electric tool =

**230 kWh/year**

=

**83% more efficient**

For more on how much energy and money compressed air could be costing your facility, read Graco's blogs on ["How to Lower Compressed Air Costs"](#) and ["The Cost of Using an Air Compressor"](#).

## Quick Cost-Cutting Wins for Energy Savings

Government-sponsored funding and rebate programs alone are enough of a financial driver to begin exploring electrification in manufacturing operations. But even if those funds aren't available, the ability for new devices to reduce energy consumption is compelling from a financial perspective.

(For tips on building a long-term strategy on quick wins, see Section 5 of this ebook.)

### Quick Win #1

#### Talk to your energy provider.

Your energy bill is a great indicator of how much you're spending month to month, but a conversation with your energy provider can reveal a lot more than recurring costs. Dig into your energy use over time; cross-reference energy use with the age of your equipment to see how much more it's costing as it ages; compare your annual energy use to your region and industry. Understanding how much energy you're using today is the first step to finding out how much you can reduce it in the future.

### Quick Win #2

#### Determine how much compressed air is costing you.

Compressed air and the electricity to produce it eat up more of your budget than you might think. For perspective, it takes about 7 horsepower of electric power to operate a 1 HP compressed air motor (a high ratio that gets even higher when the pressure is higher than the typical 90 psi).

### Quick Win #3

#### Find out what incentives you qualify for.

In the US, many states offer incentive programs to offset the cost of integrating sustainability initiatives into manufacturing facilities and processes, either in the form of rebates, tax credits, or direct incentives. A [2022 PwC study of the EU Green Deal](#) showed that a majority of environmentally focused improvements to manufacturing equipment and technology in the EU have been made using 'preferential financing' like incentives (40%), grants (31%) and tax credits (26%).

These motivators are often tailored to specific issues and goals, like a rebate for investments into recycling technology or emissions-reducing equipment, and they're not always dependent on an established or wide-ranging commitment to sustainability initiatives. Take stock of your processes, equipment, goals and other factors to make your facility as eligible as possible.

## How New Technologies Cut Energy Costs and Carbon Emissions

[Transportation accounts for about one-fifth of global CO2 emissions.](#) In 2020, the industry was the single largest contributor of greenhouse gases of any sector in the US with a whopping [30% share of emissions.](#)

With that baseline in mind, consider this: Integration of electric technology into vehicles can [reduce vehicular carbon emissions by as much as 80%.](#) And in pumping-intensive industrial settings, where [pumping systems account for over 50% of electricity consumption,](#) the value of more efficient solutions quickly becomes apparent – both in terms of savings and reduction of energy use.

The point is that yesterday's technology isn't built to help manufacturers capitalize on the opportunities of tomorrow, either in terms of their sustainability goals or economic motivators. Think about the fact that pumping systems, which are only one essential part of manufacturing operations, could be driving almost half of manufacturers' energy costs while preventing them from reaching their sustainability goals.

In a world where [renewable energy is projected to be the US's fastest growing source of energy,](#) today's electric technologies – like QUANTM pumps – prime manufacturers for a more sustainable future.

## How Electric Pump Technology Saves Money and Boosts Sustainability



### Decreased energy use

Facility managers and procurement specialists know that purchase price is only a small part of the overall cost of owning a pump, and that most of the cost of ownership comes from the energy it uses and the maintenance it requires over its lifetime. When you invest in technology that reduces those, including electric pumps, you're kick-starting savings instantly with the initial investment.



### Less use of compressed air

As mentioned before, the cost of compressed air really adds up – especially at scale and in pressure-intensive applications. All-electric pumps don't rely on compressed air to operate, removing this significant (and recurring) cost from the list of concerns.



### Quick installation for less downtime

Downtime on your production line creates supply chain disruptions and cost overruns that put you at a serious disadvantage in an increasingly global marketplace. With plug-and-play integration into existing pump lines, electric pump technology allows you to immediately improve the metrics that matter – cost, productivity, agility and responsiveness.



### Less specialized training & manpower required

Since 2021, manufacturers have been facing alarming labor shortages. The last thing they need now is equipment that takes a long time to install and requires new specialized training to operate and maintain before they start seeing the benefits. QUANTM from Graco is easy to maintain with smaller crews, so your team can spend more time adding value to your manufacturing processes and less time just keeping things running.

## Replacing Pneumatic Pumps with Electric

Because they're so central to your manufacturing operations, pump systems are some of the lowest-hanging fruit for improving sustainability and efficiency in your factory. While replacing AODD pumps with QUANTM ones sounds like a big investment, it's actually a fairly light lift in terms of equipment cost and the steps required to make them part of your manufacturing operations. But if you've ever replaced a traditional incandescent lightbulb with a long-lasting LED bulb, you're already familiar with the concept.



### Just getting started with sustainability?

QUANTM pumps are a great starting point for sustainability – more efficient, more affordable and feature a quicker ROI than ever before.



### Already following a plan?

Electric technology is a great accelerator toward your sustainability goals, helping you meet investor expectations and hit regulatory benchmarks even faster while driving significant energy savings.



| LED bulbs  |                       | QUANTM electric pump  |
|--|-----------------------|---|
| <ul style="list-style-type: none"> <li>✔ 75% less energy use than incandescent</li> </ul>          | <b>Efficiency</b>     | <ul style="list-style-type: none"> <li>✔ Up to 80% less energy use than AODD</li> </ul>     |
| <ul style="list-style-type: none"> <li>✔ Plug-and-play</li> </ul>                                  | <b>Replaceability</b> | <ul style="list-style-type: none"> <li>✔ Plug-and-play into any 110V-240V outlet</li> </ul> |
| <ul style="list-style-type: none"> <li>✔ ~50% more expensive than incandescent per bulb</li> </ul> | <b>Initial cost</b>   | <ul style="list-style-type: none"> <li>✔ Comparable with AODD</li> </ul>                    |
| <ul style="list-style-type: none"> <li>✔ 2-3 months</li> </ul>                                     | <b>ROI</b>            | <ul style="list-style-type: none"> <li>✔ 1 year</li> </ul>                                  |

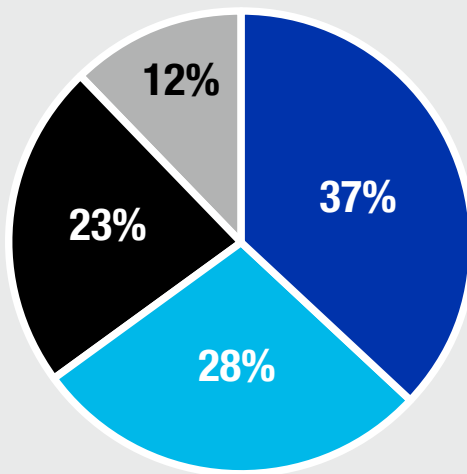
With investment costs that are comparable to AODD, efficiency that starts paying off immediately, and minimal retrofitting, QUANTM technology is ideal for any manufacturer interested in reducing energy use, saving money and satisfying key stakeholders. Graco's QUANTM pump is perfectly suited to bring any facility's pumping system into a sustainable future.

## Creating a Sustainability Plan Built for Your Company

In [Section 2](#), we mentioned that even the most conservative sustainability commitment needs a strategic backbone. That's because even the most well-intentioned initiatives tend to fizzle out without accountability, goals and ways to measure progress.

Having a sustainability plan is also part of remaining competitive in the modern era. In a [2021 survey](#), 37% of respondents from manufacturing companies said they don't yet have a sustainability strategy but planned to have one within two years. For context, 28% said they already have one in place, 23% considered their sustainability strategy critical to their business and only 12% said they had no plans for sustainability at their companies.

### Here's how you can set up your company's sustainability initiatives for success.



- Don't have a sustainability strategy, plan to have one within two years.
- Already have one in place
- Consider their sustainability strategy critical to their business
- They have no plans for sustainability

**If you're just getting started, get some quick wins under your belt.** Just like replacing your home's lightbulbs with LEDs, every sustainability plan (whether you call it that or not) starts somewhere – often somewhere small, especially for small- to mid-size manufacturers. That's why it's a good idea to start with tactical, actionable changes that will make an impact you can see.

- **Establish baselines.** Know how much energy you use today, even if it's just a ballpark.
- **Invest in efficient equipment and practices.** From pumps to lighting, the electric technologies outlined in this ebook are great places to start outfitting your facility for the sustainability-focused future.

**Align quick wins with the big picture.** Here's where it all comes together. With the opportunities identified under your strategy (no matter how simple it is), you can start to leverage the equipment and practices you currently have to capitalize on them – or justify more investment in the resources you need.

**Sketch out a long-term strategy.** In a silo, buying better equipment and remembering to turn off the lights will make a difference in your sustainability efforts – but you can only get so close to sustainability leadership without a roadmap.

- **Collect and interpret data.** If you're replacing equipment, know how much energy and money it's saving you. It'll show you where your investments are having the most impact and identify more areas of opportunity.
- **Set specific goals.** Once you start saving, don't rest on your laurels. Using the information you collect, set milestones for your company to hit next, like kWh caps and recycling volume.

**Create messaging.** Taking a flexible approach to solid goals lets you discover what combinations of solutions work for your company, which can help position your company as a sustainability thought leader in your space. Quantify and position your sustainability efforts and their results to show you're making a difference (or at least progress) for the audiences that care the most: the investors looking for focused partners, conscious consumers and advocates seeking out the most environmentally motivated manufacturers.





## How Graco Can Help You Build a Cost-Saving Strategy

Graco is currently working with manufacturers across multiple industries to drive measurable and sustainable energy savings in their operations. The recent development of our electric-operated double diaphragm (EODD) pump allows us to bring cost-saving ideas to manufacturers of all sizes. We've collected data from plants around the world that shows air-operated double diaphragm (AODD) pumps drove the large — if not the largest — consumption of electricity in a manufacturing operation.

Graco sustainability and electrification experts can help you calculate current energy costs and potential energy savings if you transition old AODD pumps to modern electric alternatives. We also can help you explore incentive programs offered by utilities, power aggregators and government organizations that help pay for — or entirely cover — the deployment of sustainable new pump technology.

### Arrange a Consultation

If you're ready for a sustainability program that drives significant cost savings and enhances your reputation as an environmentally responsible organization, contact Graco at (phone number) or send email inquiries to (address). You also can learn more at [graco.com/quantm](https://www.graco.com/quantm).