

# MANUFACTURING'S COMMITMENT TO SUSTAINABILITY

SUPPLEMENTAL SURVEY REPORT ON MANUFACTURERS' GOALS,  
ACHIEVEMENTS AND INVESTMENTS IN SUSTAINABLE PRACTICES

MAY 2019



# Manufacturing's Commitment to Sustainability

The National Association of Manufacturers represents 14,000 small, medium and large companies across all industrial sectors in all 50 states. In the wake of record-breaking economic optimism fueled by tax and regulatory reform, manufacturers are keeping our promise to hire more workers, raise wages and benefits and invest in new plants and equipment. We are also keeping our promise to deliver responsible environmental stewardship along with strong economic growth.

This is why the NAM joined with the Department of Energy's nonpartisan Better Plants Program earlier this year to launch the Sustainability in Manufacturing Partnership. Through this partnership, manufacturers have the ability to collaborate with the DOE in exploring emerging sustainability technologies, addressing future energy problems and shining a spotlight on how sustainability is vital to manufacturing in America.

By facilitating the sharing of sustainability success stories like those included here, the program is helping manufacturers gain greater visibility into the sustainability best practices of industry peers. It is also helping Americans gain greater insight into the environmental commitment of a sector that is keeping its promises. Since 1990, **national pollutant concentrations have dropped dramatically**. Carbon monoxide concentrations are down 77 percent; lead 99 percent; nitrogen dioxide 54 percent; ozone 22 percent; coarse particulate matter 39 percent; fine particulate matter 37 percent; and sulfur dioxide 81 percent. The United States also has continued to lead the charge in reducing its greenhouse gas emissions. Notably, manufacturers contributed **19 percent more value** to the American economy over the past decade while releasing **10 percent fewer GHG emissions**. To advance this goal even further, the NAM recently surveyed its members on their sustainability practices, and across the board, manufacturers are demonstrating that sustainability has become mainstream across all industrial sectors.

Everyone wants clean water and clean air. Everyone needs a good job and an economy that delivers new opportunities and a better life. Manufacturers are proving we can deliver both. For more information on the NAM-DOE Sustainability in Manufacturing Partnership, please visit [www.shopfloor.org/2018/04/the-nam-and-doe-better-plants/?\\_ga=2.248172743.1911520976.1538679535-731651861.1532446636](http://www.shopfloor.org/2018/04/the-nam-and-doe-better-plants/?_ga=2.248172743.1911520976.1538679535-731651861.1532446636), and for additional information on how manufacturers are paving the way as leaders in sustainability and energy efficiency, please visit [www.nam.org/issues/sustainability](http://www.nam.org/issues/sustainability).



Jay Timmons  
President and CEO  
NAM

**Energy:** Manufacturers are using cleaner sources of energy and reducing their consumption.

- Global manufacturing company Ingersoll Rand recently extended its climate commitment and signed a purchasing agreement for wind power that will account for **32 percent** of its U.S. electricity use. It is also starting a solar energy initiative that will soon cover **15 percent** of its energy load in both China and the United States.
- In 2017, Union Pacific **reduced its energy consumption by 3.8 million kWh.**

In a recent NAM survey, **71.9 PERCENT** of manufacturers said they had a sustainability policy in place, and another **8.3 PERCENT** are developing one.

**Recycling:** Manufacturers reuse materials in innovative ways.

- The electronics manufacturer Texas Instruments **efficiently uses and reuses** materials generated by its manufacturing process. For example, it regularly cleans and shreds its empty chemical containers for sale to the plastics industry.
- Construction materials manufacturer USG Corporation's Rainier, Oregon, plant has a new **waste reclamation system** that turns job site wallboard waste back into gypsum panels. When new wallboard waste comes into the plant, a machine separates the gypsum core from the paper. The paper is sent to a local dairy farm where it is used as bedding, and the recovered gypsum is put back into the manufacturing process to be recycled into new wallboard. The new system allows USG Corporation to meet increased customer demand for products in post-consumer recycled content.

**ENERGY**

**93.8%**

*of companies track usage*

**RECYCLING**

**76.3%**

*of companies have a program*

**WATER**

**81.3%**

*of companies track usage*

**Water Conservation:** Manufacturers are taking bold steps to reduce their water consumption.

- Smithfield Foods' conservation efforts saved more than **1.174 billion gallons of water** in 2017.
- Saint-Gobain, one of the world's largest building materials companies and manufacturer of innovative material solutions, started using a cooling tower to save water at its Riverport, Kentucky, facility in 2012. Within three years, it had **eliminated water withdrawal completely** from a well it had used for years (at 131 million gallons in 2012)—**and sealed it up.**

**Manufacturers will continue to lead by minimizing their environmental footprint, reducing air emissions, conserving critical resources, protecting biodiversity, limiting waste and producing safe products and solutions so others in the economy can do the same.**

**Why do manufacturers care about sustainability?**

- **Because it is the best way to do business:** **62 percent** of companies have sustainable policies because it is their preferred business model, according to a recent poll of NAM manufacturers. The next most common reason, consumer demand, was cited by 50 percent of manufacturers.
- **Because everybody wins:** Emphasizing environmental sustainability is both the right thing to do and good business. In the words of Cummins Chairman and CEO Tom Linebarger, it often offers **“a win-win: less environmental impact and cost-reduction benefits.”**

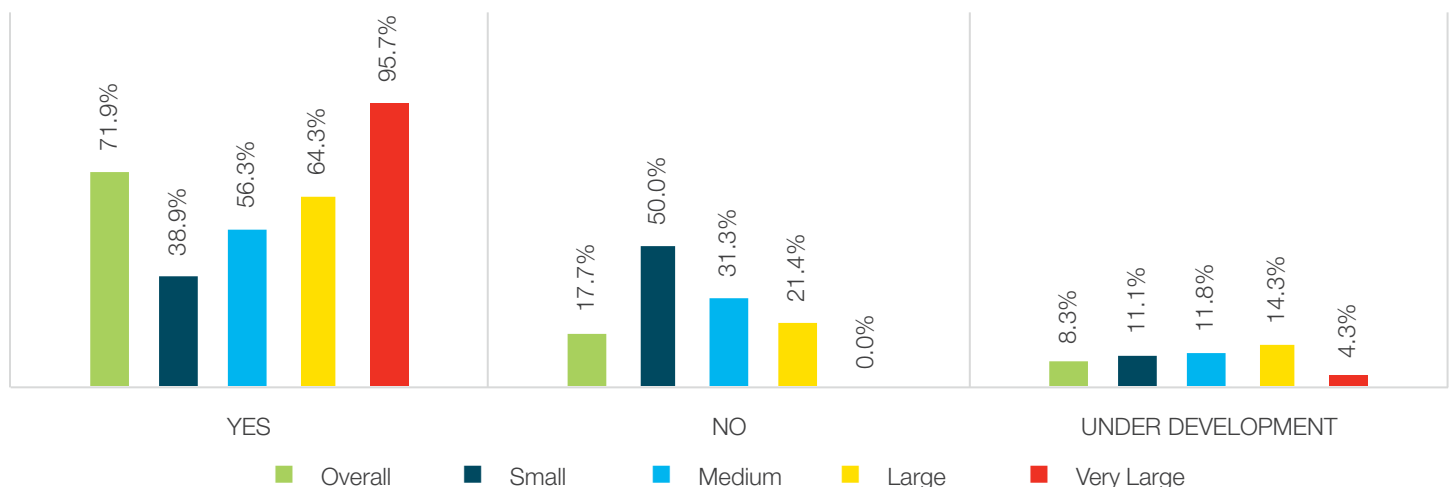
# NAM MANUFACTURERS' SUSTAINABILITY SURVEY

## SUPPLEMENTAL REPORT ON MANUFACTURERS' GOALS, ACHIEVEMENTS AND INVESTMENTS IN SUSTAINABLE PRACTICES

Manufacturers in America are producing products that make modern life possible while simultaneously establishing a strong record in environmental protection. As the foundation of communities, manufacturers make substantial investments over time to minimize their environmental footprint by increasing energy efficiency, saving and recycling water and implementing initiatives to reduce pollution and waste. Recently, the NAM surveyed its member companies to better understand what manufacturers are doing to become more sustainable. The survey results are supplemented in this report with manufacturers' compelling stories about their own efforts to advance environmental stewardship through sustainable practices. Taken together, the data and illustrative examples show how manufacturers are leaders in sustainability.

The survey results demonstrate that sustainable manufacturing is of prime importance to NAM member companies. According to the data from the NAM's sustainability survey, **approximately 80.2 percent of NAM member companies are either developing or have a corporate responsibility or sustainability policy, program and/or goals (71.9 percent current, 8.3 percent developing)** (Figure 1).

**Figure 1: Does Your Company Have a Corporate Responsibility or Sustainability Policy, Program and/or Goals?**



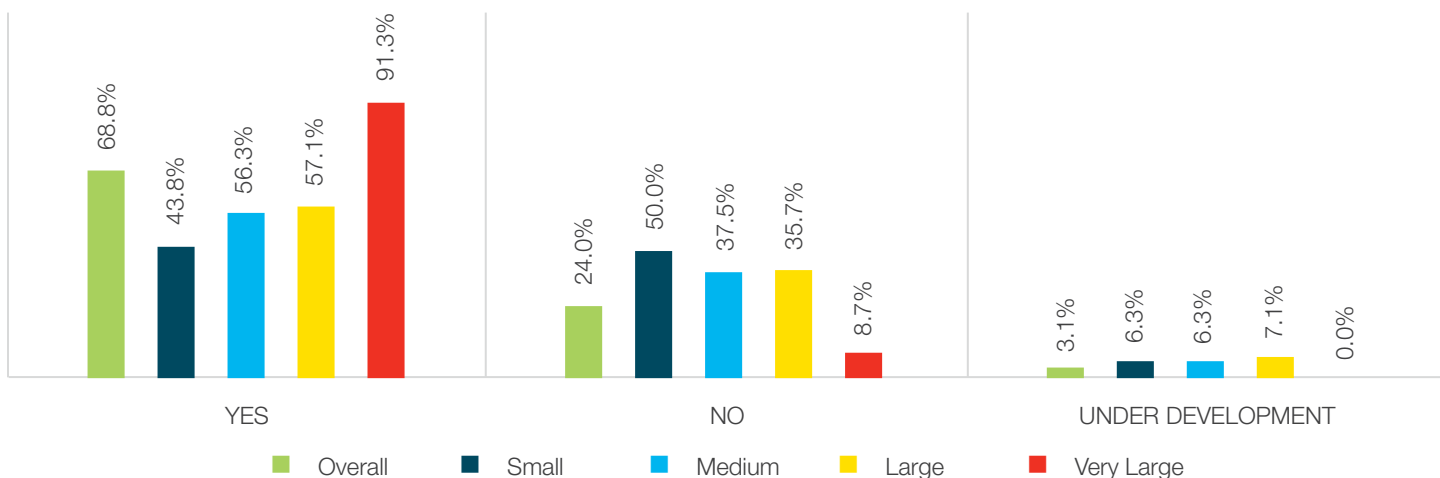
For manufacturers, implementing sustainable practices is integral to their business model and operations. The survey yielded varied results by firm size with a key difference when comparing very large and large companies to medium and small companies.<sup>1</sup> **Very large companies (95.7 percent) that have more than 5,000 employees and large companies (64.3 percent) that have 501 to 5,000 employees are significantly more likely to have a corporate responsibility or sustainability policy, program and/or goals.** Achieving sustainability and energy-efficiency goals helps strengthen manufacturers' competitiveness and fiscal bottom

<sup>1</sup> For the purposes of this survey, firm size breakouts are as follows: small (fewer than 100 employees), medium (100 to 500 employees), large (501 to 5,000 employees) and very large (more than 5,000 employees) manufacturers.

lines. However, identifying energy-saving opportunities and sustainability strategies can be challenging for small and medium-sized manufacturers. **The percentage of companies engaged in sustainable practices decreased for medium-sized businesses (56.3 percent) and small businesses (43.8 percent).**

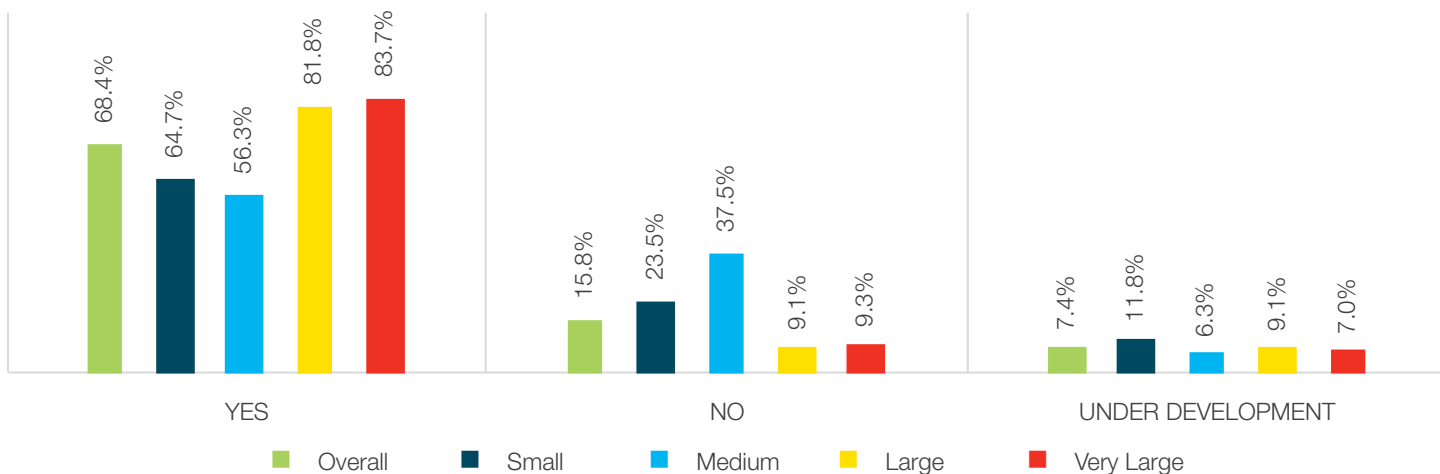
Frequently, implementing a company’s corporate responsibility or sustainability program requires dedicated personnel to carry out this mission. The survey revealed that **71.9 percent of NAM member companies have hired or are hiring senior staff whose primary function is to oversee their company’s corporate responsibility or sustainability program (68.8 percent already hired, 3.1 percent in process of hiring) (Figure 2).** Again, very large (91.3 percent) and large (57.1 percent) companies take the lead in this area with medium (56.3 percent) and small (43.8 percent) companies close behind.

**Figure 2: Does Your Company Have Senior Personnel Whose Primary Function Is to Oversee Your Company’s Sustainability/Corporate Responsibility Program?**



Life-cycle thinking is a key tool for manufacturers making informed decisions and understanding the impacts of their products. **The survey revealed that 75.8 percent of NAM member companies use or are developing a life-cycle approach toward the sustainability of some or all of their products (68.4 already have, 7.4 percent developing) (Figure 3).** Electronics manufacturer Texas Instruments efficiently uses and reuses materials generated by its manufacturing process. For example, it regularly cleans and shreds its empty chemical containers for sale to the plastics industry.

**Figure 3: Does Your Company Use a Life-Cycle Approach Toward the Sustainability of Some or All of Its Products?**



The act of being sustainable varies across industrial sectors and among individual companies, and we asked respondents to provide additional details about what their company is doing to be environmentally conscientious. **The survey revealed that the majority of companies (93.8 percent) track their energy use (Figure 4).** Union Pacific Corporation reduced its energy consumption by 3.8 million kilowatt hours in 2017.<sup>2</sup>

Caterpillar aims to reduce its energy intensity by 50 percent from 2006 to 2020. Through the installation of hybrid energy solutions particularly for its facilities where the local grid is insufficient or unreliable, Caterpillar is able to rely on a combination of renewable photovoltaic solar modules, energy storage and traditionally fueled generators to provide its facilities with reliable, more sustainable energy.

For the Volvo Group, 2017 was a banner year. The company's "total CO<sub>2</sub> emissions from production facilities, including scope 1 – direct emissions and scope 2 – indirect emissions, decreased from 408,000 tons to 399,000 tons, i.e. 2%, which is more than the reduction in total energy used. This reduction is a result of [its] transition to low CO<sub>2</sub> energy sources. More than 40% of [the Volvo Group's] total energy use came from low-carbon renewable sources, including hydropower electricity and biomass heating."<sup>3</sup>

**Manufacturers are prioritizing tracking waste generation (82.5 percent) and water use (81.3 percent) and are taking bold steps to reduce their waste and conserve water (Figure 4).**

Saint-Gobain Corporation, one of the world's largest building materials companies and manufacturer of innovative material solutions, started using a cooling tower to save water at its Riverport, Kentucky, facility in 2012. Within three years, it had eliminated water withdrawal from a well it had used for years (at 131 million gallons in 2012)—and sealed it up.

In addition, Smithfield Foods' conservation efforts saved more than 1.174 billion gallons of water in 2017.

**Administering a recycling program (76.3 percent) and operating a program to address the reduction of product packaging, product reuse or recyclability (53.8 percent) are key factors of a manufacturer's sustainability program (Figure 4).** Recycling continues to be an environmental, economic and societal success story led by manufacturers, many of which use recycled materials daily to make new products that add value to the economy. The private and public sectors have invested billions of dollars in infrastructure enabling citizens and businesses to reduce, reuse and recycle efficiently. Continued research and development are key, and innovation is critical to advancing their sustainable practices.

Pfizer, for instance, is innovating with sustainable packaging by creating a new medicine bottle that ultimately will reduce approximately 1 million pounds of plastic resin per year.

At USG Corporation's plant in East Chicago, Indiana, the company founded a "Center for Manufacturing Excellence . . . to pilot 'next generation' manufacturing strategies. These advanced controls provide real-time production data to reduce waste, downtime, energy and effort, and enable USG Corporation to make higher quality products faster, safer and at a lower cost."<sup>4</sup>

<sup>2</sup> "Investing in Conservation." Web Blog Post. Manufacturing a Sustainable Future. National Association of Manufacturers. 30 July 2018.

<sup>3</sup> The Volvo Group. Annual and Sustainability Report 2017: Driving Performance and Innovation. 13 March 2018.

<sup>4</sup> USG Corporation 2016 Sustainability Report. Published in 2016.

Moreover, USG Corporation’s Rainier, Oregon, facility has a new waste reclamation system that turns job site wallboard waste back into gypsum panels. When new wallboard waste comes into the plant, a machine separates the gypsum core from the paper. The paper is sent to a local dairy farm where it’s used as bedding, and the recovered gypsum is put back into the manufacturing process to be recycled into new wallboard. The new system allows USG Corporation to meet increased customer demand for products higher in post-consumer recycled content.<sup>5</sup>

However, these sustainable activities and the degree to which they are performed varied by firm size.

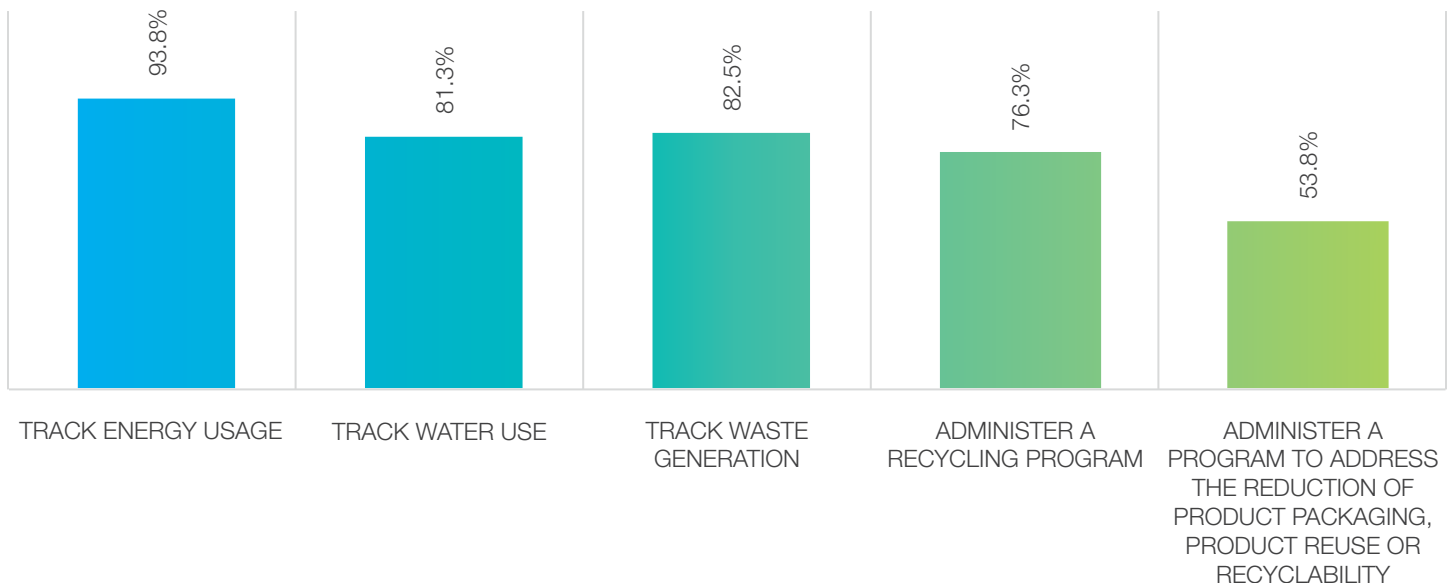
**Tracking greenhouse gas emissions (86.7 percent) and energy usage (86.7 percent) ranked equally high among very large companies that have more than 5,000 employees.**

Global manufacturing company Ingersoll Rand recently extended its climate commitment and signed a purchasing agreement for wind power that will account for 32 percent of its U.S. electricity use. It is also starting a solar energy initiative that will soon cover 15 percent of its energy load in both China and the United States.<sup>6</sup>

Notably, tracking water usage (84.4 percent) and waste generation (82.2 percent) also rank high among very large companies. A key similarity between large (78.6 percent) and medium-sized (82.4 percent) companies is that they both consider tracking energy usage as a top-tier sustainable activity. Interestingly, the survey results differed for small companies that have fewer than 100 employees. **Tracking waste generation (92.9 percent) is of great importance among small companies, followed by energy usage (78.6 percent) and recycling (71.4 percent).** For example, Epcon Industrial Systems, LP engineers and manufactures custom process heating equipment and air pollution control systems for numerous applications and industries. By using heat recovery methods, Epcon is able to supply the most energy-efficient systems on the market. Epcon eliminates volatile organic compounds and other forms of air pollution, while recycling the energy in manufacturing processes.

#### Figure 4: Does Your Company Engage in the Following Activities?

Note: Respondents were able to check more than one response; therefore, responses exceed 100 percent.



<sup>5</sup> USG Corporation 2016 Sustainability Report. Published in 2016.

<sup>6</sup> Sultana, Keith. “Advancing Our Climate Commitment with Renewable Energy Investments.” Web blog post. Manufacturing a Sustainable Future. National Association of Manufacturers. 25 July 2018.



It is important to understand what motivates companies to get engaged in sustainability. **The survey reveals that business model preference (62.0 percent) and market/consumer demands (50.7 percent) are the predominant factors that drive a company to engage in sustainable practices (Figure 5).**

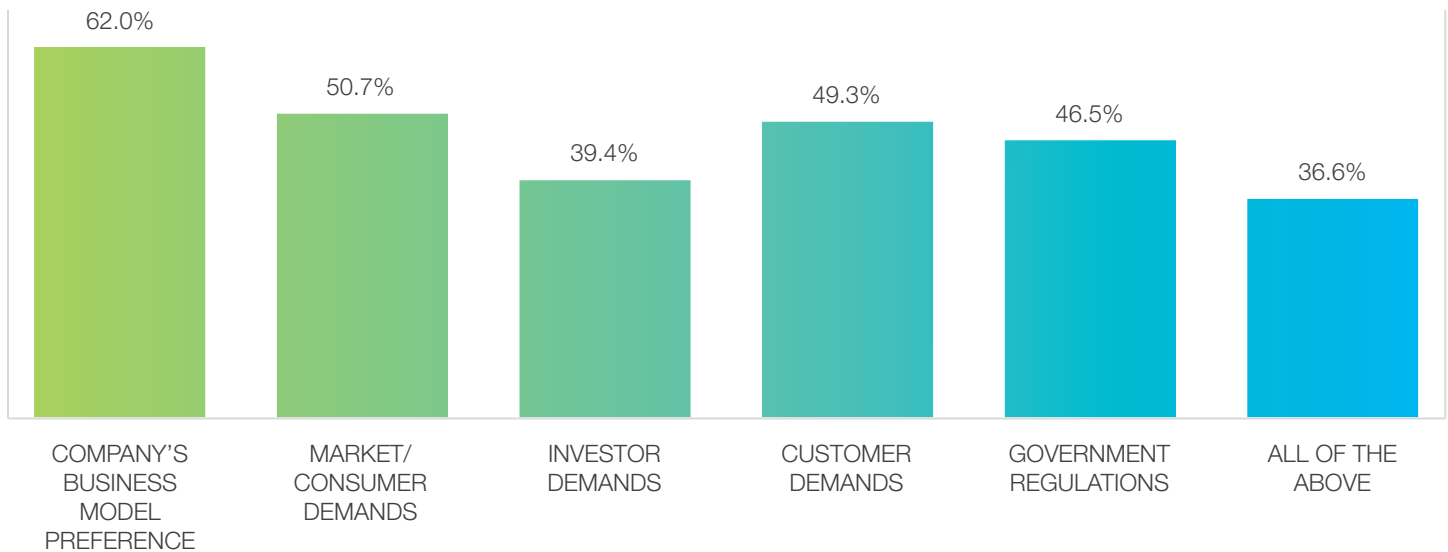
Samsung integrates sustainability into its daily business operations, which through the innovative development of today’s most sustainable mobile devices and home appliances—coupled with its commitment to renewable energy—strengthens the company’s environmental stewardship and helps its consumers reduce their environmental impact.<sup>7</sup>

However, customer demands (49.3 percent), government regulations (46.5 percent) and investor demands (39.4 percent) do not fall too far behind and are also strong contributing factors. Not surprisingly, 36.6 percent of survey participants checked “all of the above” as they felt that no single element listed in this survey question dominated their decision to implement sustainable practices.

According to Cummins Chairman and CEO Tom Linebarger, “From our point of view, emphasizing environmental sustainability is the right thing to do, but we also think it is good business. There’s no question that our focus on environmental innovation and leadership has caused our company to grow, to become more profitable and to increase our appeal with big companies that would like to partner with us because of our leading technologies. At our facilities, we’ve installed environmentally sustainable technologies that offer a win-win: less environmental impact and cost-reduction benefits.”<sup>8</sup>

**Figure 5: What Drives Your Company to Get Engaged in Sustainability?**

*Note: Respondents were able to check more than one response; therefore, responses exceed 100 percent.*



<sup>7</sup> Godfrey, John. “Samsung Continues Raising the Bar on Environmental Stewardship.” Web blog post. Manufacturing a Sustainable Future. National Association of Manufacturers. 13 Aug. 2018.

<sup>8</sup> Counsel, Laurie. “How Cummins Is Emphasizing Environmental Sustainability in Its Manufacturing Sites.” Web blog post. Manufacturing a Sustainable Future. National Association of Manufacturers. 17 May 2018.

## Detailed Survey Responses

The NAM conducted this survey among its membership from June 13 to July 13, 2018. In total, 104 manufacturers from all parts of the country, in a wide variety of manufacturing sectors and in varying size classifications, responded. Aggregated survey responses appear below.

1. **Please provide official company name.**
2. **Please provide parent company name (if applicable).**
3. **What is your company's primary industrial classification?**
  - a. Chemicals – 17.5%
  - b. Electrical equipment and appliances – 5.8%
  - c. Fabricated metal products – 16.5%
  - d. Food manufacturing – 3.9%
  - e. Machinery – 4.9%
  - f. Nonmetallic mineral products – 3.9%
  - g. Paper and paper products – 4.9%
  - h. Petroleum and coal products – 3.9%
  - i. Plastics and rubber products – 4.9%
  - j. Primary metals – 3.9%
  - k. Transportation equipment (including automotive) – 5.8%
  - l. Wood products – 1.0%
  - m. Other – 23.3%
4. **What is your firm size (e.g., the parent company, not your establishment)?**
  - a. Small (fewer than 100 employees) – 23.4%
  - b. Medium (101 – 500 employees) – 19.2%
  - c. Large (501 – 5,000 employees) – 17.0%
  - d. Very large (more than 5,000 employees) – 40.4%
5. **Please provide the full name and job title of the person responsible for the completion of this survey.**
6. **In the event we need to ask clarifying questions, please provide the email address of the person responsible for the completion of this survey.**
7. **Does your company currently have a corporate responsibility or sustainability policy, program and/or goals?**
  - a. Yes – 71.9%
  - b. No – 17.7%
  - c. Under development – 8.3%
  - d. Unsure – 2.1%
8. **Does your company have senior personnel whose primary function is to oversee your company's sustainability/corporate responsibility program?**
  - a. Yes – 68.8%
  - b. No – 24.0%
  - c. Under development – 3.1%
  - d. Unsure – 1.0%
  - e. Not applicable – 3.1%
9. **Does your company use a life-cycle approach toward the sustainability of some or all of its products?**
  - a. Yes – 68.4%
  - b. No – 15.8%
  - c. Under development – 7.4%
  - d. Unsure – 5.3%
  - e. Not applicable – 3.2%
10. **Does your company engage in the following activities? (Check all that apply.)**
  - a. Track energy usage – 93.8%
  - b. Track water usage – 81.3%
  - c. Track waste generation – 82.5%
  - d. Administer a recycling program – 76.3%
  - e. Administer a program to address the reduction – 53.8%
11. **For the issues checked in Question 10, please provide additional information on the following: What are your company's internal reduction targets for each area, if applicable? By what amount have you made reductions in years past? And what were your metrics of success?**
12. **If your company is not currently engaged in sustainable activities listed in the previous question, please indicate if your company is considering and/or developing initiatives that would. (Check all that apply.)**
  - a. Track energy usage – 42.9%
  - b. Track water usage – 50.0%
  - c. Track waste generation – 50.0%
  - d. Administer a recycling program – 35.7%
  - e. Administer a program to address the reduction – 50.0%
13. **What drives your company to get engaged in sustainability? (Check all that apply.)**
  - a. Company's business model preference – 62.0%
  - b. Market/consumer demands – 50.7%
  - c. Investor demands – 39.4%
  - d. Customer demands – 49.3%
  - e. Government regulations – 46.5%
  - f. All of the above – 36.6%
14. **What are some ways your company shares sustainability best practices and meets reporting obligations?**
15. **Describe some of the ways in which your company is being sustainable.**



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