

# What's driving sustainability in the design and manufacturing industry?



## Introduction

Climate change and the need for sustainable solutions are now playing a critical role in the decision-making of governments and companies. The UN's Sustainable Development Goals (SDGs) increasingly serve as guidance for many companies and are often reflected in country-specific rules and regulations. The Covid pandemic has highlighted the risks inherent in an interconnected global economy and the importance of resilience.

Autodesk commissioned consulting firm Frost & Sullivan to explore how firms in the Design and Manufacturing (D&M) industry in Europe are addressing the sustainability challenge, and the role technology can play. Companies surveyed are involved in consumer products, building products, industrial machinery, and auto & transportation. Here are some key findings from research conducted between 2020-2021.

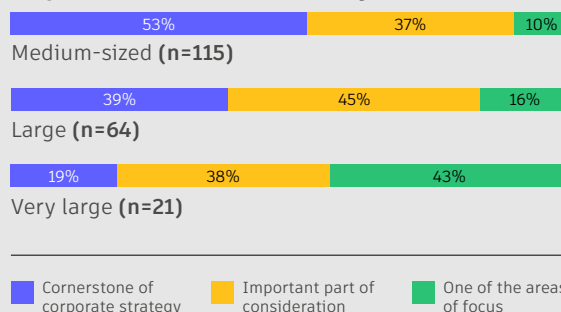
### How do design and manufacturing companies see sustainability?

To take part in the survey, each decision-maker had to work for a company with at least some focus on sustainability (less than 10% were disqualified because of this). 15% of survey participants said sustainability was the cornerstone of their firms' corporate strategy (the highest possible ranking), while another 40% said it was an important part of consideration. Among very large companies (those with 5000 and more employees), a full 43% said sustainability was the cornerstone of their strategy. This might reflect the fact that very large companies are particularly resource-intensive and have a lot to gain from reducing their material costs.

The importance of sustainability is also manifested in official documents. Almost three-quarters of the firms (73%) say it is part of the company vision, purpose, or strategic goals. There is some regional variation here, with the number being 77% in the Nordics and 64% in the UK & Ireland.

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### Importance of sustainability





This focus on sustainability is driven by customers. Respondents name customer retention (89%) and customer expectations (87%) as the top reasons to embrace sustainability at the corporate level. Interestingly, this is followed by the desire to gain a competitive advantage (76%). Other reasons include expectations from supply chain partners (57%), regulation and market forces (56%), attracting talent and employee satisfaction (37%), and investor relations (35%). In the Nordics, regulation and market forces take the top spot (85%), reflecting the maturity of sustainability in these countries.

“Listening to our stakeholders has been a key aspect of our sustainability strategy – both to stakeholders within the community, and to our investors and our customers, where the rise of ESG really is driving new levels of sustainability engagement and disclosure. Addressing ESG issues well is also an important element of attracting and retaining talent. Knowing that your company is walking the talk is extremely important to employees. Take diversity, for example. Even in heavy industry, women expect to be able to pursue highly successful careers. On climate, our leadership now regard this as a top priority for the entire business. This stems from their dedication to the success of the company - they know that we need to stay ahead of the curve on climate change to retain our leading position in the market.”

*Annie Heaton, Head of Sustainability Engagement and Disclosure, ArcelorMittal*

### Sustainability today

Sustainable initiatives are already being widely implemented by manufacturing firms in Europe. Today, roughly 40% of the firms' projects or products, on average, are driven or strongly impacted by sustainability. Benelux countries lead the way, indicating that almost half (48%) of their products fall under this category.

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Among the most important initiatives, companies name reducing material and energy use throughout the manufacturing lifecycle (77%) and low carbon innovation to reduce the environmental footprint (64%). Circular design (37%) and support for vulnerable communities affected by climate change (27%) were also mentioned.

D&M firms are already seeing results from implementing sustainability initiatives; reduced energy consumption (74%) and better use of resources (73%) were cited as the biggest benefits. They also refer to improved project quality, better project margins, and awards and recognition for the projects.

“As a global leader in engineering, most of our solutions are designed to enable customers to operate safely, cleanly and efficiently - and thereby benefit the environment and our communities sustainably. IMI's strategic focus of “Breakthrough Engineering for a Better World” is a purpose-driven initiative that is gaining traction and will increasingly drive our investment and development choices. We also think it's important for every business to minimise its carbon footprint. Since 2015, on a like-for-like basis, we've reduced our CO2 emissions, but we know there is more that we can do. So as a starting point, we've set ourselves the goal of reducing our factory CO2 intensity by 50% (based on 2019 Scope 1 and scope 2 emissions), by 2030.”

*Steve Robins, President Europe Marine & Nuclear, IMI Critical Engineering*



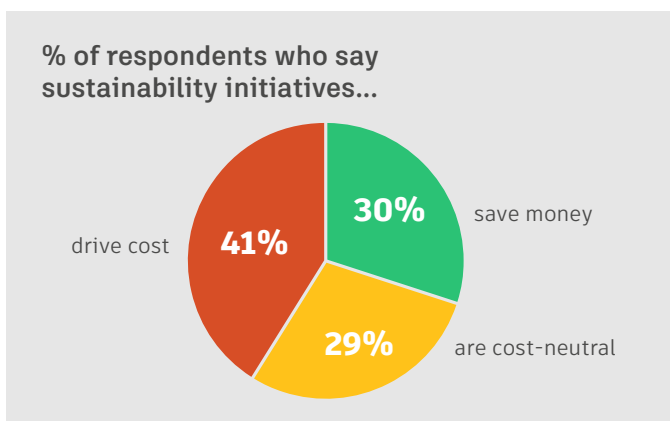
To get these results, companies are investing in improving their capabilities around sustainability. Currently, the main areas of investment are improved workflows, like using less energy and materials (90%), regulatory compliance (81%), and technology and software (78%). This is followed by Research & Development (67%), carbon offsets (55%), recruiting additional staff and training (40%), and corporate social responsibility projects (40%). An impressive 95% of respondents in the Benelux and UK and Ireland said their companies are already investing in improved workflows.

In the next two years, companies expect to increase their investments in all the above areas, with improved workflows and technology and software slated for the biggest increase.

Firms plan to continue investing in sustainability initiatives, with an average spend of 1.2 million euros over the next 5 years. Unsurprisingly, the larger the company, the more it plans on spending, with very large companies earmarking 3.5 million euros for sustainability investment.

### Overcoming sustainability challenges

Companies face challenges on their road to achieving sustainability goals. Respondents indicate lack of financial resources (37%), access to skills and training (35%), and lack of a strong business case (30%) as the top issues. The emphasis differs slightly across the regions, with companies in the Benelux highlighting access to skills and training as their top challenge (52%), while in the Nordics it is the lack of a strong business case (32%), and in the UK and Ireland, it is a tie between lack of financial resources and lack of customer buy-in (41%).



While cost is still seen as a challenge on the way to achieving sustainability, almost 60% of survey respondents said sustainability initiatives save money (30%) or are cost-neutral (29%). Overall, 41% of participants think that sustainability initiatives drive higher costs for their company. In the Benelux, this number is only 21%. It is important for companies to have the right tools to track the longer-term and non-financial benefits of sustainability.

The Coronavirus pandemic has also been a major challenge for the industry. Design and manufacturing firms, like many others, have had to switch to remote or socially distanced work. This drove the rapid adoption of digital tools and wider acceptance of remote work, both of which are set to continue and shift the way the industry collaborates. Additionally, during the qualitative interviews, respondents acknowledged that the pandemic had made them and their clients more aware of systemic risks like climate change and the need to prepare for them.

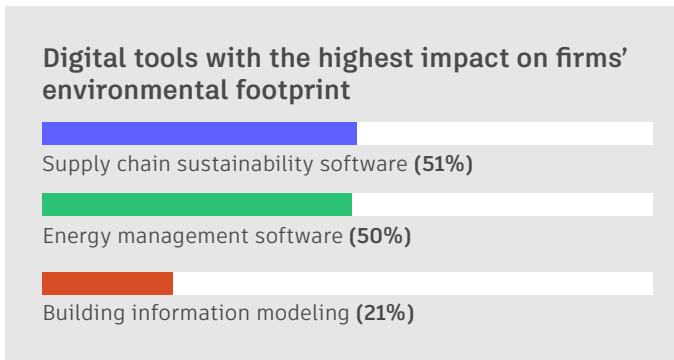
### The role of technology

The pandemic accelerated the ongoing transition towards a more digital way of working in the D&M industry. This supports sustainability initiatives, too.

“Digital technology will massively improve industrial processes. You can see this happening already in safety, where you’ve got drones being used to do dangerous monitoring tasks. And AI technology could be applied to air emissions. For example, in Spain, we have air quality detectors around a plant to monitor ambient emissions, and we have cameras. You can use camera intelligence to capture, analyse, and even predict what is going to happen in terms of air emissions.”

Annie Heaton, Head of Sustainability Engagement and Disclosure, ArcelorMittal

Among digital tools, firms indicate that supply chain sustainability software has the most impact on their environmental impact (51%). This is closely followed by energy management software (50%). Other important tools include waste minimisation software (28%), BIM (21%), and digital twins (12%).



### Future opportunities

When asked about top opportunities to improve sustainability for their own company, respondents indicated that improving their processes to become more energy-efficient had the most potential. This was followed by switching to renewable energy sources and identifying process improvements.

When asked about specific sustainability-related trends impacting their industry, businesses singled out a few that they expect to grow in impact in the next two years. They are carbon neutral manufacturing (59% say it will increase in impact), factory energy optimisation (57%), material alternatives (54%), product energy efficiency and

material efficiency and lightweighting (52%).

“The number one focus for sustainability in the playground sector is on materials, and we’ll start to see governments pushing forward guidelines in tenders in terms of the sustainability metrics of the resources being used. There’ll be far greater scrutiny on the constitute components that make up a product, as well as its lifecycle and recyclability. We’ll also see greater emphasis on the use of digital technology that enables greater efficiency in manufacturing, as well as outcomes-driven technology. We believe by focusing on these aspects as a business, we can help drive the sustainability agenda much further in the sector.”

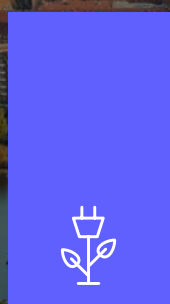
*Barry Leahey, CEO and Managing Director at Playdale*

### Sustainability in D&M: a win-win

Design and manufacturing companies in Europe are already implementing sustainability initiatives and expect to do more in the coming years. They are also beginning to see the benefits of this approach both in their operations and in the projects they deliver for clients.

Technology can support this transition to more sustainable and net-zero buildings by helping companies gather and analyse data, enabling better collaboration. The result is clear impact today, from lower energy usage and carbon footprint reduction, to get the industry closer to its critical sustainability goals.

### Impact of sustainability-related trends on industries:



**Carbon neutral manufacturing**  
(59%)



**Factory energy optimisation**  
(57%)



**Material alternatives**  
(54%)

### Research setup

- Quantitative survey of 200 Design & Manufacturing (D&M) companies, all with some focus on sustainability. Participating companies are from Benelux (Belgium, the Netherlands, and Luxembourg), Nordics (Denmark, Finland, Norway, and Sweden), the UK and Ireland. Companies of various sizes are represented.
- Qualitative one-on-one interviews with six decision-makers representing D&M firms across the region