

THE STATE OF 3D PRINTING

2022 EDITION

Special report:

Sustainability

Each year, Sculpteo conducts a significant study about the Additive Manufacturing industry to get the best insights and predict the future of 3D printing: **The State of 3D Printing.**

This year we decided to go further with a focus on **sustainability**, one of the biggest challenges ahead.

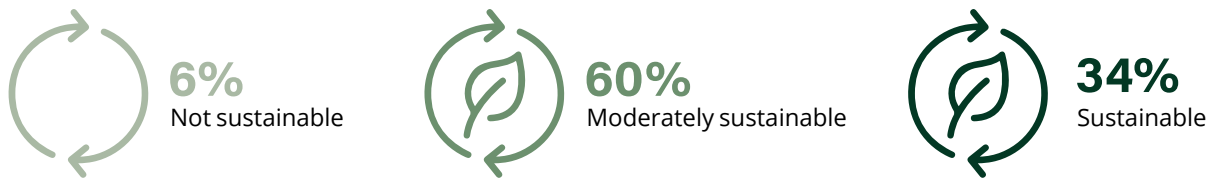
What is the point of view of 3D printing users on this issue? Does additive manufacturing have a role to play in helping businesses reach their sustainability objectives?

To start with, **81% of the respondents have goals in terms of sustainability**, establishing that a significant majority of companies are determined to improve their processes and are ready to take action.

Is your business strategy following sustainable objectives?

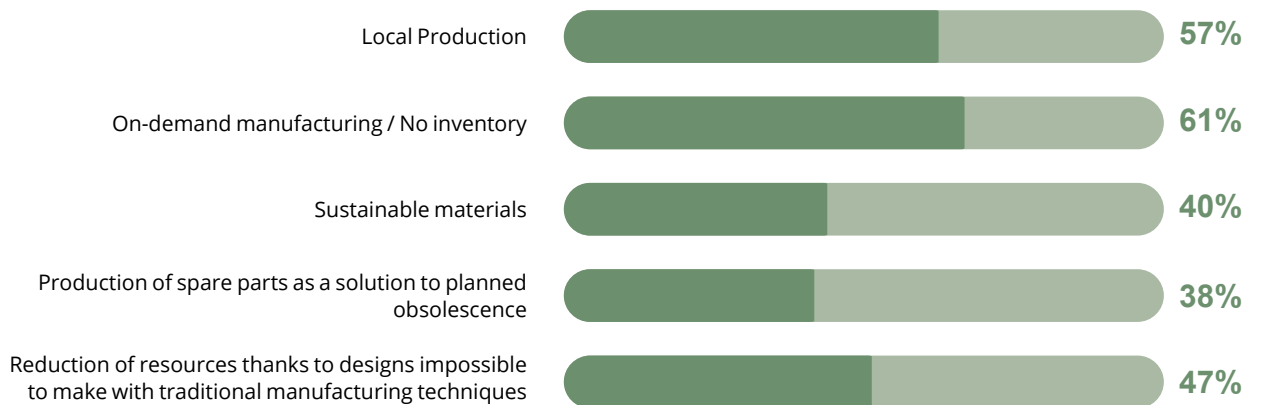


How sustainable is 3D Printing?



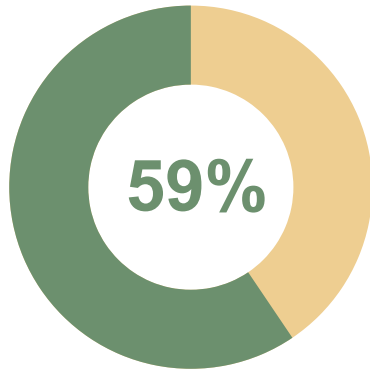
94% of the respondents attest that 3D printing is an ally in improving sustainability. Though recycling parts or using more durable materials is possible with 3D printing, 60% affirm that the technology still has improvements to become more sustainable.

How do you think 3D printing is advantageous to making your business more sustainable?

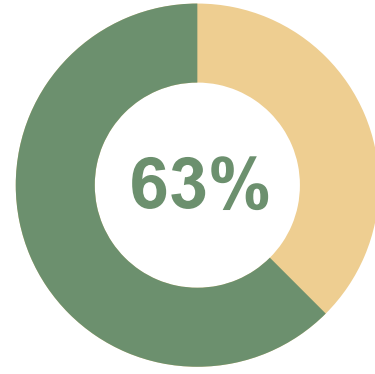


For 61% of the respondents, on-demand manufacturing is a sustainable advantage, followed by local production for 57%. With a digitalized inventory, there is no need to take up space in a warehouse and no need to order minimum quantities. Additive manufacturing allows for the production of parts when needed. While also reducing transportation costs when choosing a local supplier.

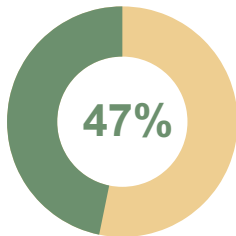
What are the 3 main sustainable aspects 3D printing should improve?



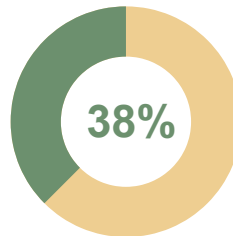
Development of more sustainable materials



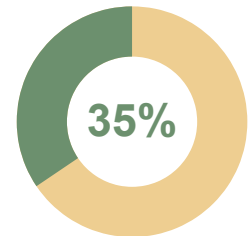
More recycling options for 3D printed end of life parts



Make progress with the reusability of the powder with technologies such as SLS



Transparency of environmental data



Reduction of CO2 emissions

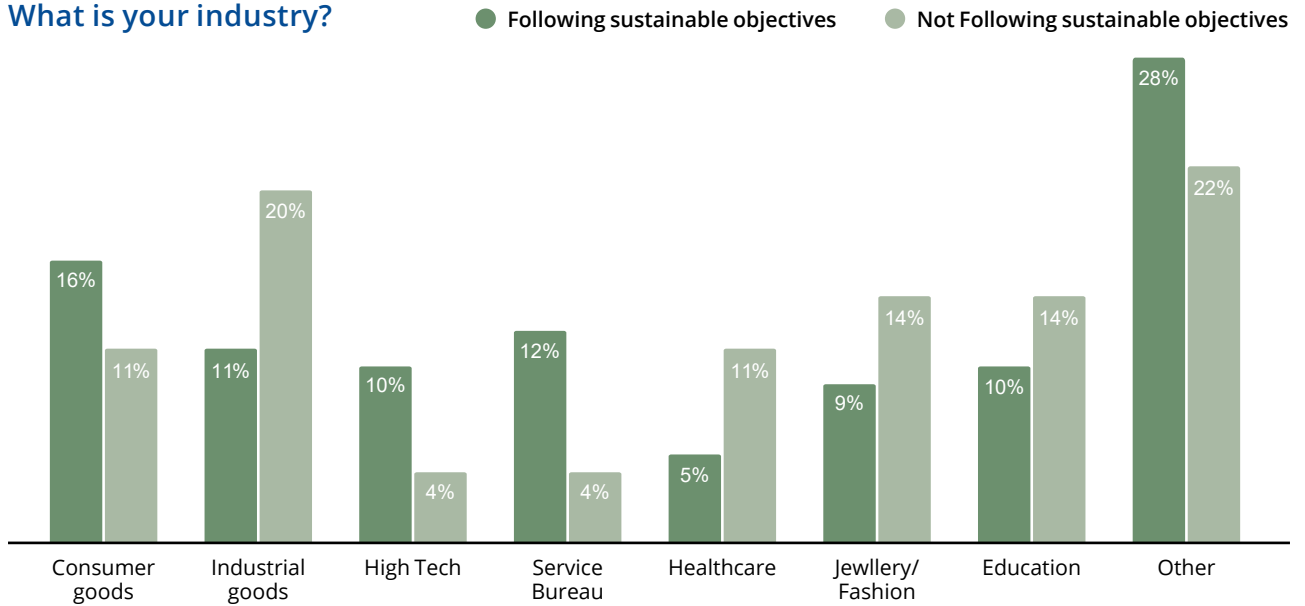
Developing more recycling options for the 3D printed end-of-life part is a real challenge in the industry. Still, it seems to raise the interest of most 3D printing users willing to adopt more sustainable manufacturing habits. Even though most polymers used in 3D printing (powder and filaments) are thermoplastics and therefore are recyclable, their chance to get recycled seems unclear at the end of their lives.

With more sustainable materials having already entered the market, such as rPET, PA11 or PLA, 59% think that a more prominent offer could improve the sustainable development of 3D printing.

These two essential points are followed by the reusability of technologies such as SLS for 47%. An important aspect, as now, only around 40% of the powder can be reused from one batch to another on certain SLS materials.

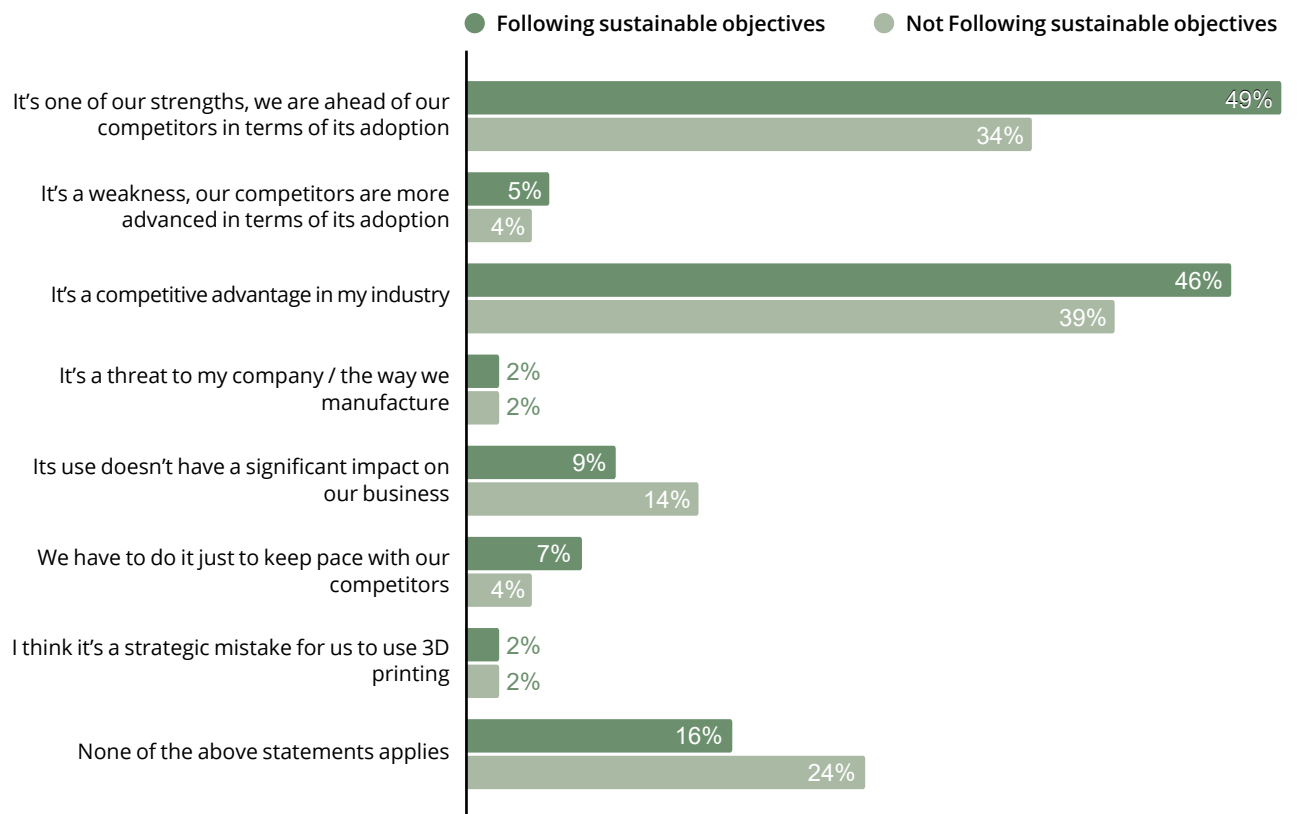
Now, let's compare users' responses following sustainability objectives in their business strategy and those who don't..

What is your industry?



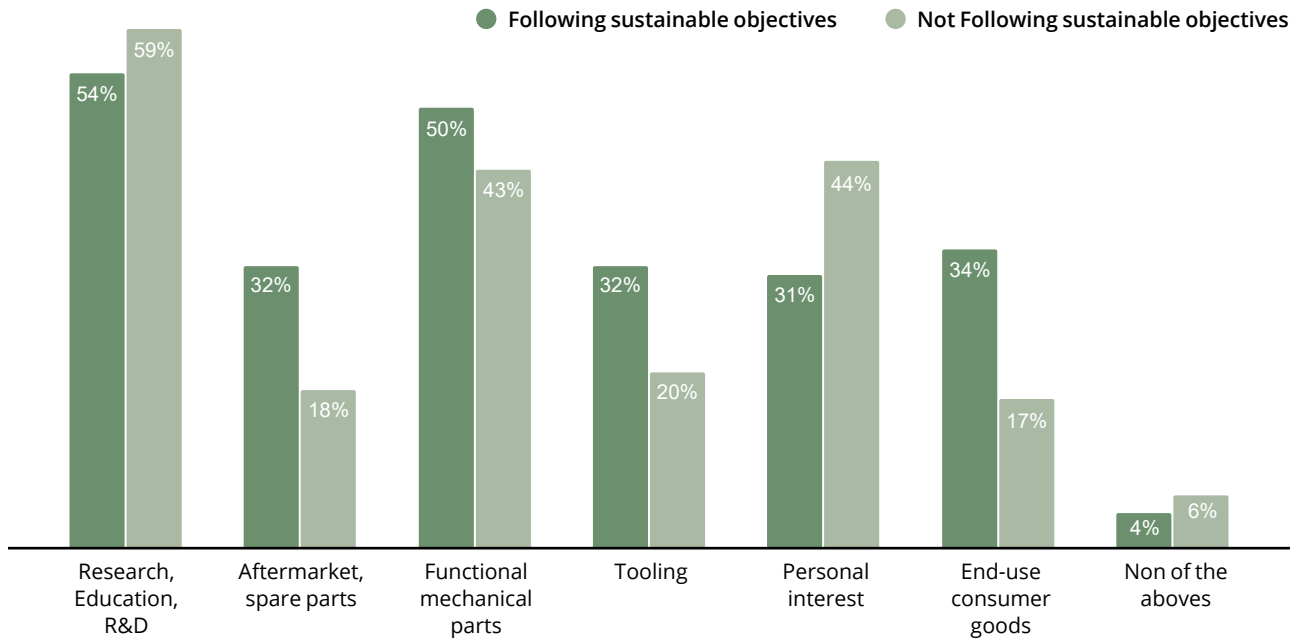
In consumer goods, high-tech, and service bureaus, more 3D printing users are involved in projects or companies where sustainability is an objective. Their customers might request this sustainable aspect, driving companies to provide a more sustainable approach or product. In contrast, in the industrial goods sector, 20% of users are not following any sustainability objectives.

How do you assess your use of 3D printing as a part of your business strategy?



3D printing users following sustainable objectives are more likely to identify Additive Manufacturing as one of their strengths or competitive advantage.

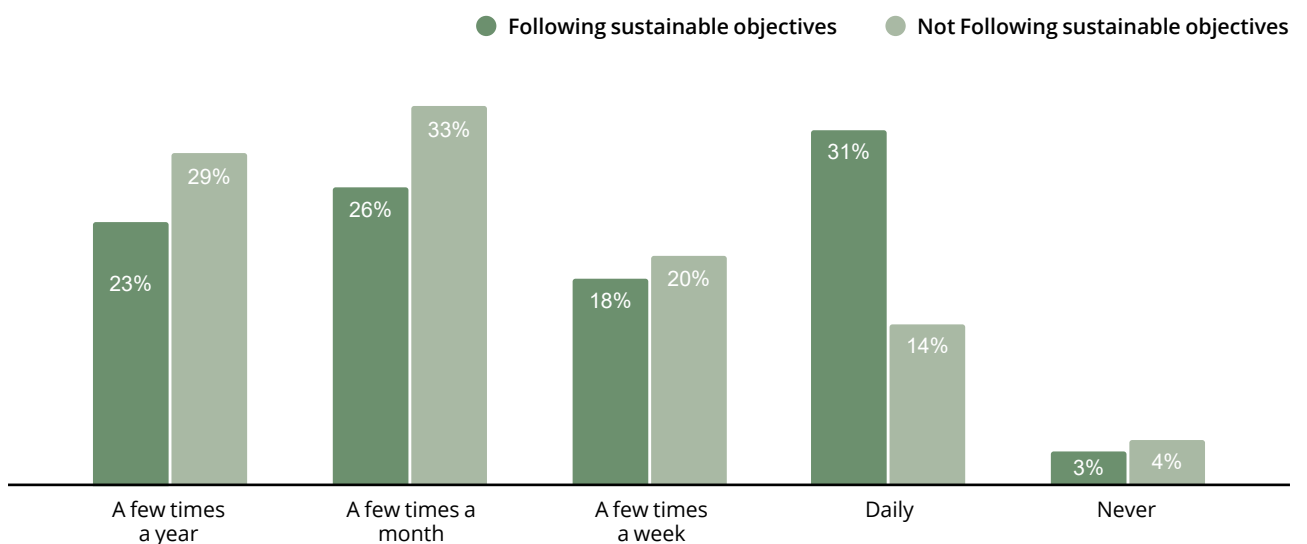
What are the goals of your 3D printing activities?



50% of the respondents following sustainability objectives use this technology for functional mechanical parts, and 32% for aftermarket, an essential aspect for companies looking to combat obsolescence. We can notice a minor interest in Aftermarket and tooling for users with no sustainable goals.

For users who have direct contact with end users (such as those in the end-use consumer goods and functional mechanical parts sectors), the pressure from consumers to have products that meet environmental requirements is greater. This helped raise their awareness and set sustainability goals. And they use 3D printing to achieve them.

How often do you use 3D printing?



Users involved in sustainable strategies tend to use additive manufacturing more frequently. We notice that 49% of people with sustainability objectives use Additive Manufacturing daily or at least a few times a week ; which is more than the average of other users in the study. These users might make the most of this technology to 3D print fewer parts more frequently, as they're pointing out on-demand production as the strength of additive manufacturing.

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