

SUSTAINABLE OPERATIONS

Why should organizations invest in

Sustainable

A comprehensive guide for manufacturers

sustainable manufacturing

Sustainable manufacturing practices encompass the entire manufacturing

value chain

• Sustainable procurement of raw materials

- Substituting oil-based raw material with
- natural organic material
- Shifting to low carbon raw material

disposal of waste and

hazardous materials

- design of systems and technologies for enabling and achieving sustainable goals New bio-friendly
- Incorporating green design in the new product development process, green reporting schemes Extending sustainability to supply chain and logistics partners, supplier compliance towards green
- materials • Elimination of unwanted packaging and single-use plastic usage
- Redesigning products to be sustainable Lifecycle assessment of products

• Compliance to standards

such as ISO 14000,

REACH

technology to minimize or reach zero landfill usage Minimizing energy and water usage

initiatives like embracing green energy, adaptation of technologies

free of hazardous waste

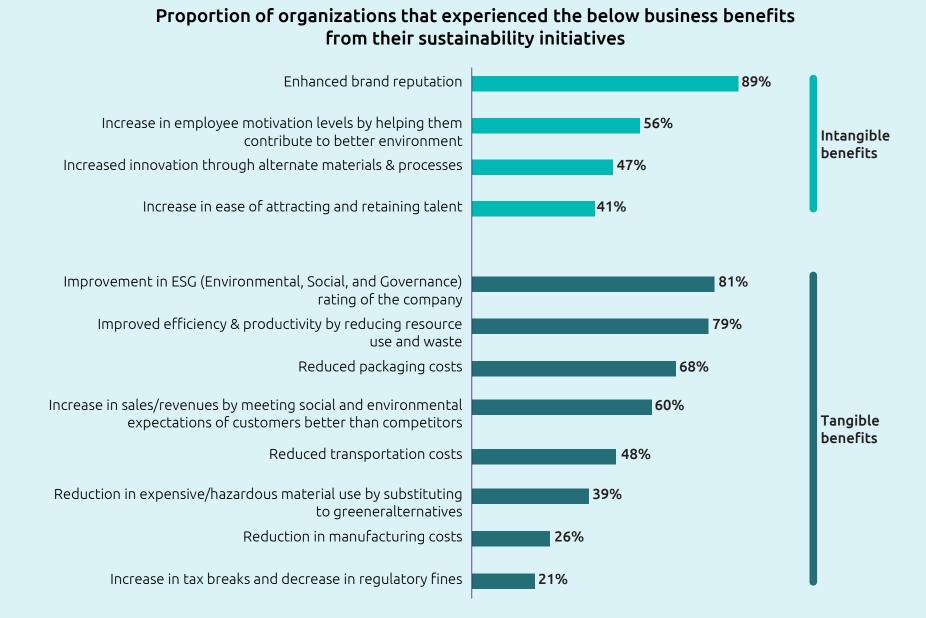
procedures and

Changing

materials Carbon accounting Research & **Product Development/** Sourcing **Process Engineering** Development **Engineering** Distribution & Logistics Rest of the value chain Maintenance & Quality **Production** • Recycling and circular Extending sustainability Zero defect • Minimizing over-production and manufacturing to supply chain and economy wastage in production Improving logistics partners Environmental • Material efficiency (improving resource efficiency, reducing the lifecycle/lifetime of Reducing carbon maintenance products demand on energy for emissions through Environment leakage • Circular approaches to transportation monitoring material/product processing) tackle waste • Incorporating production systems optimization Electricity optimization with environmentally friendly Environmentally safe routines

In the above figure, "Rest of the value chain" covers product usage, disposal and circular economy components. Source: Capgemini Research Institute analysis.

Manufacturers see significant benefits from sustainability initiatives – tangible as well as intangible



N=480 business executives.

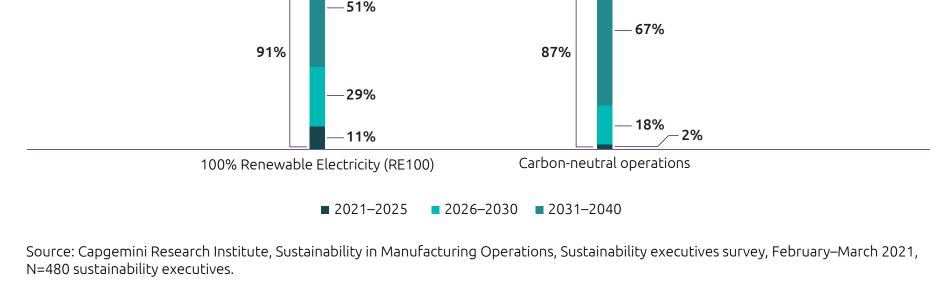
Source: Capgemini Research Institute, Sustainability in Manufacturing Operations, Business executives survey, February–March 2021,

Manufacturers have set ambitious targets for the next decade

In which year do you aim to achieve, or have achieved this goal?

Significant majority aim to have 100% Renewable Electricity and to be

Carbon-neutral in their operations by end of next decade



94% of organizations, on average, By 2040, all organizations aim to reduce 55% of plastic usage expect to achieve zero waste for 68%





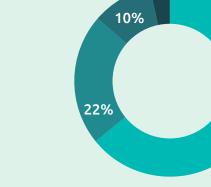
However, the maturity of the sustainability initiatives is not at pace with the ambitions

of their operations by 2040

51% of manufacturers aim to Only one in ten are holistically align with temperature objective approaching sustainable manufacturing

Lean manufacturing (focusing on "Reduce")

"Redesign", and "Remanufacture")



3%

64%

of Paris Agreement



■ Green manufacturing (focusing on "Reduce", "Reuse", and "Recycle")

■ None of the given options – our main target is saving costs

Sustainable manufacturing (focusing on "Reduce", "Reuse", "Recycle", "Recover",

Foremost priority of manufacturing operations





High-tech

More than half agree that technology is a key part of their strategy Percentage of organizations focusing on technology as a key focus area in their sustainability strategy

Consumer products

Only 1 in 5 of organizations agree

that sustainability is fully integrated

into their manufacturing strategy



of the organization Technology is playing a key role in sustainability initiatives

43%

Automotive

56%

Global

Less than 1 in 3 organizations are

internally aligned on the importance

of sustainability across different parts

73% 58%

51%

Aerospace

51%

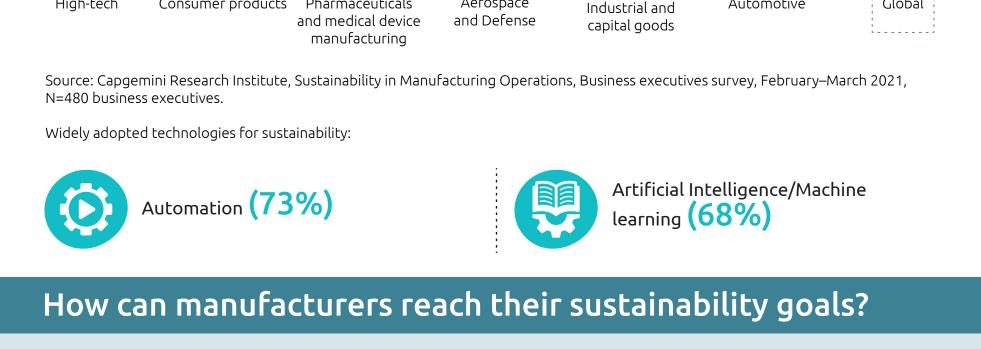
Align business teams and sustainability executives to explain synergies between

performance and sustainability, and anchor the joint agenda

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55%

Pharmaceuticals



Work with customers and suppliers to reduce indirect emissions



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