

Simplifying Progress

Capital Markets Tutorial Environmental Sustainability

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SVIDUL

At the core of our business: "Good health and well-being"



Our mission

We empower scientists and engineers to simplify and accelerate progress in life science and bioprocessing, enabling the development of new and better therapies and more affordable medicine.



Health is one of the most relevant global topics



1 United Nations: World Population Prospects, 2019



The challenge: Many innovative biotech medications are very expensive





Sartorius' technologies enable researchers to achieve results faster, ...

Example: digitalization and automation of laboratory processes





... to increase yield and efficiency in biopharma production ...

Example: new, innovative bioprocess technologies





... and to improve the customers' eco-footprint through single-use technologies



1 Based on data from Flanagan et al (2011). LCA of a mAb process at 2,000 L scale.



Intensified processes as additional lever to increase resource efficiency in customers' operations

- Innovative technologies enable intensified processes in drug manufacturing
- The result: higher efficiency and reduced energy and water consumption and less greenhouse gas emissions
- Overall environmental impact of a drug is measured in "Process Mass Intensity":

PMI =	Total raw materials, consumables and water (kg)				
	Drug product (kg)				



Data from in-house case study: a) 300 kg/year throughputs. Data was generated using BioSolve modeling software

PMI: metric employed within the biopharmaceutical industry to measure resource efficiency of the drug substance



Sartorius actively manages its sustainability impacts, risks and opportunities along the value chain





Environmental data collection a challenge; Reporting in line with regulation

Reporting topics

Climate	
Water	of Co
Pollution	
Biodiversity	
Resources	
Own workforce	
Workers in the value chain	ዯ፟፟፟፟፟፟ዯ፟፟ኯ፟ ፝፞፝፝፝፝፝፝፝ዯ፟ኯ፟፟፟፟ዯ፟፟፟፟፟፟፟፟፝ዯ፟፟፟፟
Communities	
Consumers	○ ○
Business conduct	



Reporting partially based on external data which can be subject to changes and specifications; therefore, continuous and retrospective restatements of certain data might be necessary



Our environmental fields of action





Ambitious climate targets until 2030

1 Process emissions from membrane manufacturing are currently considered unavoidable based on available technology; base year 2019

Zero

Avoidable¹ emissions in Scope 1 and 2 until 2030



2019 2022 2030e

g CO₂/€





$\rm CO_2$ reduction levers across the value chain



Upstream (Scope 3)		Production Scope 1&2		Downstream (Scope 3)		
Purchased goods & services	Upstream incl. int. transportation	Business travel	Manufacturing & warehousing	Down-stream transportation	Product use & end of life	Other (capital goods, employee commuting, buildings)
Eco-design products & packaging	Eco-design packaging	Reduce travel	Improve energy efficiency	Eco-design packaging	Eco-design products & packaging	Buildings & construction
Efficiency in manufacturing Supplier engagement	Transport Frequency Distance Fright mode Fuels Production process steps	travel	Produce clean energy Procure renewable energy	Transport Frequency Distance Fright mode Fuels	Process intensification	Capital goods Commute sustainably





Expanding renewable energy capacity at our sites worldwide











Initiatives to improve waste management in Aubagne







Waste Processing



1 Figure taken from: Vachette, Elisabeth & Fenge, Christel & Cappia, Jean Marc & Delaunay, Lucie & Greller, Gerhard & Barbaroux, Magali. (2014). Robust and convenient single-use processing: The superior strength and flexibility of flexsafe bags. 12.



SVIECTENS

Water and wastewater: Improve water efficiency in our operations

Our ambitions

- Reduce use of drinking water, increase use of rainwater
- Decrease wastewater, increase water recycling
- Optimization of production cycles with solvents

Water is primarily used in BPS for membrane production and modification

Yauco, PR

- Distillation plant for almost closed solvent cycles
- Cistern system for collected rainwater





Solvent and water reuse at the Yauco plant



4 distillation columns Processing capacity: 16,500 kg/day of spent solvent (oldware) **3.9** million kg of oldware processed for reuse of water processed for reuse



90% recovery of 2-pyrrolidone (2P) from oldware

98% recovery of Isopropanol (IPA) from oldware

SVIECTEVS

Base April 2022

Supply chain due diligence act: Risk assessment





*Coverage in terms of spend June 2023







Disclaimer

This presentation contains statements concerning the future performance of the Sartorius Group. These statements are based on assumptions and estimates. Although we are convinced that these forward-looking statements are realistic, we cannot guarantee that they will actually materialize. This is because our assumptions harbor risks and uncertainties that could lead to actual results diverging substantially from the expected ones. It is not planned to update our forward-looking statements.

Throughout this presentation, differences may be apparent as a result of rounding during addition.

