

# Environmental performance

## Operational efficiency

Novozymes strives to decouple environmental impact from business growth, and aims to define targets and metrics that measure and drive our sustainability performance.

In previous years, we have measured resource efficiency relative to gross profit, but this has proved not to be optimal, as non-sustainability-related changes in gross profit, such as currency fluctuations and product mix, distort the picture of the actual sustainability performance. We have therefore decided to explore a better way of measuring our sustainability performance and aim to finalize this work in 2019.

While exploring better long-term sustainability measures, we have introduced annual targets for energy and water consumption and CO<sub>2</sub> emissions, where we aim to keep growth in resource consumption and CO<sub>2</sub> emissions lower than our organic sales growth.

## Climate change

Novozymes' total CO<sub>2</sub> emissions were 472,000 tons in 2018, an increase from 447,000 tons in 2017. Our target measures the increase in part of the total CO<sub>2</sub> emissions (scope 1+2 only), which increased by 7% from 408,000 tons in 2017 to 437,000 tons in 2018. This means the target was not met.

Despite this, Novozymes' net overall impact on climate change remains positive, as its products result in lower CO<sub>2</sub> emissions over their life cycles compared with conventional technologies. In 2018, our customers avoided an estimated 88 million tons of CO<sub>2</sub> emissions by applying our solutions in their products or processes, up from 76 million tons in 2017. This is equivalent to taking 37 million cars off the road.

## Energy

In 2018, Novozymes' energy consumption was 4,831,000 GJ, an increase of 1% compared with 2017. Renewable sources accounted for 23% of the energy consumption in 2018, down from 24% in 2017. All our electricity in Denmark and Brazil comes from offshore windfarms and hydropower.

Energy by source 2018 (2017)



- Electricity - conventional **38%** (37%)
- Electricity - renewable **22%** (23%)
- Steam **21%** (20%)
- Fuels - conventional **14%** (15%)
- Heat - conventional **4%** (4%)
- Fuel and heat - renewable **1%** (1%)

## Water

In 2018, Novozymes' water consumption increased by 1% from 8,106,000 m<sup>3</sup> in 2017 to 8,205,000 m<sup>3</sup>.

The total volume of wastewater generated in 2018 increased by 2%.

In 2018, Novozymes established a wastewater treatment plant at its new production site in Patalganga, India, designed to reuse 100% of the treated process water in production.

## Waste

Novozymes recovered 97% of biomass generated in 2018 from landfill, on par with 2017.

For solid waste, the rate of recycling across our global production sites increased to 44%, compared with 43% in 2017.

## Environmental compliance

The number of breaches of regulatory limits recorded worldwide increased to 27 in 2018 from 24 in 2017. Most of these breaches relate to wastewater treatment. Novozymes is addressing these incidents. In addition, we received 11 neighbor complaints in 2018, compared with 12 in 2017, mostly related to air pollution and waste management.

# Consolidated environmental data

	Note		2018	2017
<b>Climate change</b>				
Estimated CO <sub>2</sub> reductions from customers' application of Novozymes' products in their products or processes	7.1	Million tons	88	76
Greenhouse gas emissions	7.1	1,000 tons CO <sub>2</sub> -eqv.	472	447
<b>Energy</b>				
Energy consumption	7.2	1,000 GJ	4,831	4,760
Renewable energy	7.2	%	23	24
<b>Water</b>				
Water consumption	7.3	1,000 m <sup>3</sup>	8,205	8,106
Volume of wastewater	7.3	1,000 m <sup>3</sup>	6,306	6,182
<b>Waste</b>				
Solid waste	7.4	1,000 tons	14	14
Recycling rate for solid and hazardous waste	7.4	%	44	43
Biomass volume	7.4	1,000 tons	509	602
Recycling rate for biomass	7.4	%	97	98
<b>Environmental compliance, etc.</b>				
Breaches of regulatory limits	7.5	No.	27	24
Neighbor complaints	7.5	No.	11	12
<b>References to notes without data</b>				
Bioethics & biodiversity	7.6		n.a.	n.a.
Product stewardship	7.7		n.a.	n.a.