# **Environmental** performance indicators

**Our reporting process**

Environmental data is collected and reviewed on a quarterly basis. The 2021 environmental and resource data published in the Novartis in Society Integrated Report are actual data for the period from January through September and best estimates for the period October through December. This data has now been updated with actual data following the criteria set out by the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard.

| | 2019 | 2020 | 2021 |
|---|---|---|---|
| **Energy [million GJ]** | | | |
| Energy consumption (energy used) | 12.8 | 10.9 | 9.8 |
| Renewable energy generated on site | 0.0 | 0.0 | 0.0 |
| Purchased renewable energy | 2.1 | 2.8 | 2.9 |
| **Greenhouse Gas (GHG) emissions [thousand tCO2e]** | | | |
| Scope 1, total | 484.9 | 378.3 | 352.8 |
| Scope 1, combustion and process | 356.6 | 287.0 | 264.1 |
| Scope 1, owned or leased vehicles | 128.4 | 91.3 | 88.7 |
| Scope 2, market-based | 404.0 | 335.5 | 292.7 |
| Total scope 1 and scope 2 (market-based excluding offsets) | 888.9 | 713.8 | 645.5 |
| Scope 1 and scope 2 from energy consumption (market-based excluding offsets)[1] | 876.1 | 700.8 | 632.8 |
| Scope 2, location-based | 564.7 | 487.2 | 439.4 |
| Scope 3, purchased goods and services | 5,867.3 | 5,754.0 | 5,958.4 |
| Scope 3, capital goods | 317.7 | 278.7 | 303.8 |
| Scope 3, fuel and energy related activities | 322.8 | 282.3 | 255.6 |
| Scope 3, upstream transportation and distribution | 308.5 | 319.9 | 199.6 |
| Scope 3, waste generated in operations | 37.4 | 27.9 | 26.4 |
| Scope 3, business travel[2] | 337.1 | 68.3 | 35.9 |
| Scope 3, employee commute | 148.5 | 103.5 | 127.2 |
| Scope 3, downstream transportation and distribution | 160.6 | 145.7 | 62.5 |
| Scope 3, use of sold products | 142.5 | 169.6 | 246.7 |
| Scope 3, end-of-life treatment of sold products | 134.5 | 124.5 | 121.5 |
| Total scope 3 emissions[3] | 7,776.9 | 7,274.5 | 7,337.5 |
| Total scope 1, scope 2 and scope 3 emissions | 8,665.8 | 7,988.3 | 7,983.1 |
| Offsets[4] | 29.8 | 33.6 | -34.7 |
| **Emissions intensity** | | | |
| GHG emissions (market-based Scope 1 and Scope 2) tCO2e per million USD sales | 18.5 | 14.4 | 12.3 |
| GHG emissions (market-based Scope 1 and Scope 2) tCO2e per FTE | 8.4 | 6.6 | 6.1 |
| SO2, intensity per sales (tCO2e per million USD sales) | 0.0 | 0.0 | 0.0 |
| NOx, intensity per sales (tCO2e per million USD sales) | 0.0 | 0.0 | 0.0 |
| **Emissions to air (metric tons)** | | | |
| Halogenated Volatile Organic Compounds (VOCs) | 26.6 | 11.6 | 0.8 |
| Non-halogenated Volatile Organic Compounds (VOCs) | 406.8 | 443.0 | 304.7 |
| Ozone-depleting substances (ODS) emissions caused by losses (metric tons of R11 equivalent) | 0.0 | 0.0 | 0.0 |
| Sulfur Oxides (SO2) | 4.6 | 4.3 | 3.1 |
| Nitrogen Oxides (NOx) | 236.3 | 212.0 | 190.6 |
| Particulates | 12.9 | 11.4 | 7.7 |
| **Water (million m³)** | | | |
| Total water withdrawal from all areas[5] | 66.8 | 54.7 | 47.6 |
| Surface water (total) | 9.1 | 7.0 | 6.5 |
| Groundwater (total) | 48.3 | 41.7 | 35.3 |
| Third-party water (total) | 9.4 | 5.9 | 5.7 |
| Water collected from rain (total) | 0.0 | 0.0 | 0.0 |
| Total water discharged from all areas | 66.7 | 54.5 | 46.6 |
| Discharged directly to surface water (for cooling) | 55.5 | 46.1 | 38.9 |
| Total water consumption[6] | 11.2 | 8.4 | 7.7 |
| **Operational waste[7] (thousand metric tons)** | | | |
| Total waste generated | 170.6 | 130.6 | 103.6 |
| Total non-hazardous waste | 70.6 | 68.7 | 66.7 |
| Total hazardous waste | 100.0 | 61.9 | 36.9 |
| Total waste diverted from disposal | 116.5 | 88.5 | 73.4 |
| % Waste diverted from disposal | 68% | 68% | 71% |
| Non-hazardous diverted from disposal | 57.7 | 59.9 | 56.0 |
| Hazardous waste diverted from disposal | 58.8 | 28.7 | 17.4 |
| % non-hazardous waste diverted from disposal | 82% | 87% | 84% |
| % hazardous waste diverted from disposal | 59% | 46% | 47% |
| Total waste directed to disposal | 54.1 | 42.1 | 30.2 |
| Non-hazardous directed to disposal | 12.9 | 8.8 | 10.7 |
| Incineration | 8.4 | 5.3 | 5.7 |
| Landfilling | 4.1 | 3.0 | 4.7 |
| Other disposal options | 0.4 | 0.5 | 0.3 |
| Hazardous waste directed to disposal | 41.2 | 33.3 | 19.5 |
| Incineration | 37.2 | 31.7 | 18.4 |
| Landfilling | 0.4 | 0.4 | 0.0 |
| Other disposal options | 4.0 | 1.6 | 1.1 |
| | | | |
| Amount of significant HSE fines or penalties [USD] | 13,727.9 | 5,291.1 | 0.0 |

1. Scope 1 combustion, process, and vehicles; Scope 2: purchased energy
2. 2021 data includes indirect emissions from air travel, train travel, car rentals and hotel stays. The methodology changed in 2021, with previous years' data covering emissions from air travel only. This is part of a calculation effort to expand the Scope 3 category 6 emission activities reported and part of a wider Scope 3 calculation review that aims to increase the coverage to more than 90% of the overall Scope 3. New to 2021, air travel emissions now also cover radiative forcing, which multiplies the indirect emissions by 1.9.
3. Scope 3 emissions are reported in accordance with the GHG Protocol. Only the scope 3 categories which are material and relevant to Novartis are reported.
4. Offsets based on data provided by third parties. The Santo Domingo forest carbon offset project in Argentina is due to reach maturity; as projects near this phase, routine operations involve thinning and harvesting. These operations have therefore released $CO_2e$ emissions in 2021.
5. Sum of contact water and non-contact (cooling) water use
6. Water discharged via treatment and water lost
7. Operational waste excludes debris from the demolition or construction of new buildings and any other construction or landscape changes

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