# Environmental statistics

| | 2022 | | | 2021 | 2020 |
|---|---|---|---|---|---|
| **Environmental Data** | **Total** | **Europe** | **North America[1]** | **Europe** | **Europe** |
| **Production** | | | | | |
| Board, paper and pulp, ktonnes | 3,831 | 3,017 | 814 | 3,129 | 3,047 |
| **Materials used** | | | | | |
| Wood, thousand $m^3$ sub | 15,660 | 9,959 | 5,701 | 10,100 | 10,351 |
| Pulp, purchased externally, ktonnes | 372 | 334 | 38 | 375 | 300 |
| Pulp, purchased internally, ktonnes | 182 | 129 | 53 | 148 | 160 |
| Chemicals (renewable), ktonnes | 78.9 | 72.9 | 6.0 | 74.3 | 74.1 |
| **Total renewable materials, ktonnes** | **16,293** | **10,495** | **5,798** | **10,697** | **10,885** |
| Chemicals (non-renewable), ktonnes | 662 | 452 | 211 | 416[2] | 420 |
| **Total materials used, ktonnes** | **16,955** | **10,946** | **6,009** | **11,113[2]** | **11,306** |
| **Air emissions** | | | | | |
| Sulphur (S), tonnes | 666 | 352 | 314 | 276 | 371 |
| of which diffuse sources, tonnes | 217 | 217 | – | 166 | 277 |
| Nitrogen oxides (NOx), tonnes | 4,672 | 2,833 | 1,839 | 2,891 | 3,050 |
| Dust, tonnes | 771 | 569 | 202 | 509 | 604 |
| **Water withdrawal** | | | | | |
| Surface water, million $m^3$ | 241 | 183 | 59 | 186 | 190 |
| Groundwater, million $m^3$ | 0.97 | 0.00 | 0.97 | 0.00 | 0.00 |
| Municipal water, million $m^3$ | 0.27 | 0.27 | 0.00 | 0.31 | 0.40 |
| **Total water withdrawal, million $m^3$** | **243** | **183** | **60** | **187** | **191** |
| **Emissions to water** | | | | | |
| Process water, million $m^3$ | 185 | 131 | 54 | 135 | 141 |
| COD (chemical oxygen demand)[3], tonnes | 26,587 | 26,587 | – | 27,156 | 28,249 |
| TSS (total suspended solids), tonnes | 5,066 | 4,095 | 971 | 3,830 | 3,078 |
| BOD (Biochemical oxygen demand)[4], tonnes | 660 | – | 660 | – | – |
| Organically bound chlorine (AOX), tonnes | 288 | 128 | 160 | 131 | 146 |
| Nitrogen (N), tonnes | 441 | 422 | 19 | 434 | 454 |
| Phosphorus (P), tonnes | 81 | 53 | 28 | 49 | 47 |
| **Waste** | | | | | |
| Process waste, tonnes | 151,418 | 66,773 | 84,645 | 61,503 | 90,292 |
| Hazardous waste[5], tonnes | – | 966 | 1 | 1,803 | 1,201 |

1 The North American operations have reported from the date of the acquisition (1 of April 2022) to the end of the year.
2 Reported amount of non renewable chemicals corrected for 2021. From 407 to 416 ktonnes.
3 COD is calculated from TOC. North American operations do not have routines for calculating COD/TOC. Implementation work during 2023.
4 North American operations reported BOD instead of COD for 2022.
5 Different definitions of hazardous waste in North America and Europe.

| Energy Balance | 2022 Total | 2022 Europe | 2022 North America[1] | 2021 Europe | 2020 Europe |
|---|---|---|---|---|---|
| Solid biofuels, self-generated, GWh | 2,788 | 2,002 | 786 | 2,081 | 2,068 |
| Waste liquor, GWh | 13,576 | 10,191 | 3,385 | 10,241 | 10,419 |
| Raw tall oil, GWh | 0 | 0 | 0 | 0 | 1 |
| Other (e.g. soap, gas, turpentine, methanol), GWh | 135 | 135 | – | 135 | 139 |
| **Total self-generated biofuels, GWh** | **16,504** | **12,328** | **4,176** | **12,457** | **12,627** |
| Solid biofuels, purchased, GWh | 1,664 | 1,082 | 582 | 832 | 759 |
| Tar oil, GWh | **928** | **902** | **26** | 916 | 875 |
| **Total purchased biofuels, GWh** | **2,592** | **1,984** | **608** | **1,748** | **1,633** |
| **Total biofuels, GWh** | **19,096** | **14,312** | **4,784** | **14,205** | **14,260** |
| Heavy and light fuel oil, GWh | 239 | 217 | 23 | 191 | 165 |
| LPG, GWh | 112 | 112 | – | 113 | 110 |
| Natural gas, GWh | 1,743 | – | 1,743 | 92 | 109 |
| Coal, GWh | 6 | – | 6 | – | – |
| TDF[2], GWh | 94 | – | 94 | – | – |
| **Total purchased fossil fuels, GWh** | **2,194** | **328** | **1,865** | **396** | **384** |
| **Total fuel consumption, GWh** | **21,290** | **14,640** | **6,650** | **14,602** | **14,644** |
| **Proportion fossil fuels used, %** | **10** | **2.2** | **28** | **2.7** | **2.6** |
| Steam, bio-based, GWh | 197 | 197 | – | 273 | 211 |
| Steam, fossil-based, GWh | 2.6 | 2.6 | – | 1 | 2 |
| Hot water, GWh | 24.4 | 24.4 | – | 23 | 18 |
| **Total purchased steam and hot water, GWh** | **224** | **224** | **–** | **297** | **231** |
| Sold primary energy, GWh | 486 | 486 | – | 460 | 364 |
| Sold secondary energy (waste heat), GWh | 438 | 438 | – | 516 | 571 |
| **Total sold energy, GWh** | **925** | **925** | **–** | **976** | **935** |
| Purchased electricity, GWh | 2,226 | 1,928 | 298 | 1,953 | 1,981 |
| Self-generated electricity, GWh | 2,018 | 1,401 | 617 | 1,407 | 1,393 |
| Sold electricity, GWh | 53 | 53 | – | 55 | 52 |
| **Total electricity, Gwh** | **4,191** | **3,275** | **915** | **3,305** | **3,322** |
| **Total energy consumption[3], GWh** | **22,029** | **15,926** | **6,103** | **16,008** | **16,121** |
| **Energy intensity, GWh/tonne** | **5.75** | **5.28** | **7.50** | **5.12** | **5.29** |

[1] The North American operations have reported from the date of the acquisition (1 of April 2022) to the end of the year.
[2] TDF = Tire-derived fuel. Use terminated in 2022.
[3] Use of electricity and energy minus fuel for self-generated electricity and sold energy.

**Comments**
Billerud used 10% fossil fuels in 2022, which is an increase compared to the previous year, due to the acquisition of the North American operations. The European operations used 2.2 % fossil fuels, which is a decrease from 2021 mainly due to the divestment of Beetham in 2021.

| Greenhouse Gas Emissions | 2022 Total | 2022 Europe | 2022 North America[1] | 2021 Europe | 2020 Europe |
|---|---|---|---|---|---|
| Biogenic emissions[2], ktonnes $CO_2$ | 6,407 | 4,807 | 1,600 | 4 635 | 4 937 |
| **Scope 1 - Direct emissions** | | | | | |
| From biofuels[3], ktonnes $CO_2e$ | 53 | 40 | 13 | 39 | 40 |
| From fossil fuels, ktonnes $CO_2e$ | 454 | 85 | 370 | 96 | 91 |
| **Total emissions Scope 1, ktonnes $CO_2e$** | **507** | **124** | **383** | **135** | **131** |
| **Scope 2 - indirect emissions[4]** | | | | | |
| Purchased electricty and steam (market based)[5], ktonnes $CO_2e$ | 84 | 1 | 83 | <1 | <1 |
| **Scope 3 - indirect emissions** | | | | | |
| Purchased goods (chemicals), ktonnes $CO_2e$ | 368 | 275 | 93 | 274[6] | 256 |
| Upstream transports, ktonnes $CO_2e$ | 58 | 46 | 12 | 48 | 54 |
| Business trips, air and rail, ktonnes $CO_2e$ | 1 | <1 | <1 | <1 | <1 |
| Car commuting, employees, ktonnes $CO_2e$ | 6 | 4 | 2 | 4 | 4 |
| Downstream transports, ktonnes $CO_2e$ | 217 | 155 | 62 | 157 | 139 |
| **Total emissions Scope 3, ktonnes $CO_2e$** | **649** | **480** | **169** | **483[6]** | **453** |
| **$CO_2e$ intensity, Scope 1+2** | | | | | |
| From fossil fuels, kg $CO_2$/tonne | 119 | 27.7 | 459 | 30.5 | 30.0 |
| From biofuels, kg $CO_2e$/tonne | 14.0 | 13.1 | 17.0 | 12.5 | 13.0 |
| From purchased electricity and energy, kg $CO_2e$/tonne | 22 | 0.4 | 103 | 0.9 | 3.4 |
| **Total emissions per tonne of product, kg $CO_2e$/tonne** | **154** | **41** | **579** | **44** | **46** |

[1] The North American operations have reported from the date of acquisition (1 of April 2022) to the end of the year.
[2] Bio-generated carbon dioxide only.
[3] $CO_2e$ (nitrous and methane) from biofuels. Bio-generated carbon dioxide from bio-generated fuels is not included in Scope 1.
[4] Purchased electricity and steam (location based), ktonnes $CO_2e$. 2022 (total): 257, 2021: 126, 2020: 103.
[5] Emission caluculations for steam corrected for 2021 and 2020. Value changed from 3 to <1 ktonne $CO_2e$ 2021 and from 10 to <1 ktonne $CO_2e$ for 2020.
[6] Reported amount of chemicals and indirect emissions from chemicals corrected for 2021. From 251 to 274 kt $CO_2e$ for purchased chemicals. Total emissions in Scope 3 2021 corrected from 460 to 483 $CO_2e$.

**Comments**
Our Greenhouse gas emissions have increased due to the acquisition in North America. Emissions in Scope 1 and 2 from our European operations has decreased, mainly from fossil fuels due to the divestment of Beetham in 2021. The emissions from transports has decreased, and the emissions from chemicals has increased slightly during 2022 - ending up on the same level in total for scope 3 as in 2021 for our European operations.

**Managed forest land**

Billerud manages the forestry holding of Bergvik Skog Öst entailing almost 300,000 hectares of productive forest land in middle Sweden. The forestry management assignment includes all harvesting, forestry measures and all other practical issues related to the forest holding. Billerud also manages forestland for private smallholders in middle and northern Sweden. Some of them have chosen to certify their forest according to PEFC and FSC® by becoming members of Billerud group certification. The group consists of 223 members and a total managed productive forest area of approximately 104,400 hectares of forest land, including Marma Skog.

| Forest owners and timber suppliers, 2022 | Bergvik Skog Öst AB | Certified small-holders | Marma Skog |
|---|---|---|---|
| Forest land EU/FAO, ha | 317,872 | 88,540 | 26,300 |
| Low productive forest land set aside, ha | 21,562 | 7,069 | 1,785 |
| Productive area voluntarily set aside, ha | 22,731 | 6,203 | 6,600 |
| Area left for nature conservation on harvest site, ha | 18,175 | 8,484 | 3,000 |
| Forest formally set aside, ha | 2,222 | | 2,667 |
| Total area of forest set aside, % | 20 | 25 | 53 |

| Biodiversity indicators | 2022 | 2021 | 2020 |
|---|---|---|---|
| *Follow-up of considerations, about 60 sites* | | | |
| Acceptable sites in terms of consideration for social values, such as trails and tracks | 100 | 97 | 100 |
| *Quality of nature conservation and cultural considerations in follow-up:* | | | |
| Sites without rutting with a major or moderate impact >85% | 90 | 88 | 63 |
| Sites with acceptable buffer zones >90% | 90 | 100 | 77 |
| Acceptable buffer zone area, % | 92 | 99 | 90 |
| Acceptable handling of sensitive habitats >85% | 94 | 96 | 56 |
| Acceptable sensitive habitat area, % | 98.8 | 99.6 | 87 |
| Correct handling of high stumps >95% | 92 | 97 | 97 |
| Average no. of high stumps/ha | 4.9 no./ha | 4.8 no./ha | 4.14 no./ha |
| Correct handling of green/living/preservation trees >90% | 93 | 97 | 97 |
| Correct handling of open areas >85% | 98 | 98 | 97 |
| Correct handling of cultural relics >90% | 100 | 100 | 88 |
| Acceptable handling of individual cultural relics, % | 100 | 100 | 93 |
| Correctly handled ancient relics 100% (0, 1 and 2 means handled correctly) | 100 | 100 | 100 |
| Acceptable handling of individual ancient relics, % | 100 | 100 | 100 |

The table above shows some of the results of the monitoring of operational indicators for biodiversity in our own forest management in Sweden 2020-2022.