

## Novartis Health, Safety and Environment (HSE) Data 2017

26/03/2018

### The Reporting Process

HSE data is collected and reviewed on a quarterly basis. The 2017 environmental and resource data published in the Annual Report and in the Corporate Responsibility Performance 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 in the first quarter of 2018 and there were no significant deviations noted. The Employees and Health/Safety data are actual from January through December 2017.

	Novartis Group <sup>1</sup>				
	REST 2017	2016	2015	2014	2013
HSE personnel	472	475	477	476	468
Total production [1000 t]	187.6	185.6	182.3	176.3	178.2
<b>Safety</b>					
Lost time injury and illness rate (per 200 000 hours worked) <sup>2</sup>	0.12	0.08	0.11	0.12	0.13
Total recordable case rate (per 200 000 hours worked) <sup>2, 3</sup>	0.37	0.31	0.40	0.41	0.44
<b>Energy</b>					
Energy use [million GJ] on-site and purchased	16.22	16.39	16.29	16.03	16.64
• Energy, On-site generated [million GJ]	6.97	7.00	7.02	6.92	7.29
• Energy, Purchased [million GJ]	9.38	9.51	9.39	9.21	9.49
• Energy, Sold [million GJ]	0.13	0.12	0.12	0.10	0.14
Energy, Input from renewable sources [million GJ]	2.33	2.33	2.92	1.21	1.12
Energy, Intensity per employees [GJ/CA]	137.2	140.6	137.6	118.6	123.4
Energy, Intensity per area [GJ/100m <sup>2</sup> ]	332.0	343.3	367.3	374.6	377.3
<b>Water</b>					
Total water use [million m3]	75.7	79.2	79.4	77.6	79.0
• Contact water use, excl. cooling water [million m3]	13.4	14.2	14.4	14.3	14.4
• Cooling water use [million m3]	62.3	65.0	65.0	63.3	64.7
Water purchased from suppliers [million m3]	13.5	14.3	14.5	14.3	14.1
Water abstracted from the aquatic environment [million m3]	62.4	64.8	64.6	63.7	65.4
Water recycled and reused [million m3]	21.6	20.5	22.1	22.0	23.0
Water footprint [million m3] discharged via treatment & lost	15.4	16.1	15.8	15.9	16.0
• Water discharged via treatment [million m3]	13.1	13.4	13.5	13.8	14.1
• Water lost [million m3]	2.3	2.6	2.4	2.0	1.9
<b>Emissions</b>					
GHG emissions, total Scope 1 & Scope 2 [1000 t]	1250.5	1320.4	1308.8	1304.2	1323.0
• GHG Scope 1, Combustion & process [1000 t]	397.6	399.7	396.8	393.8	412.4
• GHG Scope 1, Vehicles [1000 t]	142.6	135.6	138.8	148.2	156.7
• GHG Scope 2, Purchased energy [1000 t] market-based method	710.3	785.1	773.2	762.2	753.9
GHG (scope 1 and scope 2) per sales (tCO2e per mio USD)	25.46	27.21	26.49	24.99	25.51
GHG (scope 1 and scope 2) per associate (tCO2e)	10.28	11.15	11.03	11.07	11.17
GHG offsets [1000 t]	85.6	65.7	68.3	65.8	67.1
GHG Scope 2, Purchased energy [1000 t] location-based method	901.0	1027.8			
GHG Scope 3, business travel [1000 t]	239.2	148.1	217.7	186.2	240.4
Halogenated VOCs [t]	75.58	43.59	66.40	86.02	102.61
Non-halogenated VOCs [t]	508.71	478.14	512.37	625.78	818.27
Sulfur dioxide, SO2 [t]	17.11	16.77	21.25	28.21	61.44
Nitrogen oxide NOx [t]	269.27	258.93	279.48	287.24	279.62
Particulates [t]	62.66	59.61	70.71	73.42	71.30
Ozone-depleting substances, emissions caused by losses [tCFC R11e]	0.05	0.08	0.18	0.22	0.40
<b>Effluents and Waste</b>					
Emissions into Water, TSS Load [t]	363.6	365.3	375.4	419.0	409.6
Emissions into Water, COD Load [t]	3,041.1	3,145.3	3,056.5	2,748.0	2,909.5
Emissions into Water, Nitrogen Load [t]	248.5	260.4	249.9	248.4	256.1
Emissions into Water, Phosphate Load [t]	42.9	50.0	54.0	52.6	44.7
Hazardous waste not recycled [1000 t]	49.2	58.8	55.1	57.9	67.2
Hazardous waste recycled [1000 t]	76.4	63.7	67.7	83.4	81.6
Non-hazardous waste not recycled [1000 t]	18.8	18.1	20.6	21.2	22.1
Non-hazardous waste recycled [1000 t]	67.4	66.9	63.4	64.5	62.9
Non-hazardous waste recycled [%]	78.2%	78.7%	75.5%	75.3%	74.0%
Hazardous waste recycled [%]	60.8%	52.0%	55.1%	59.0%	54.9%
Hazardous Waste to landfill [t]	0.0	0.0	0.0	1.7	1.2

<sup>1</sup> HSE data for Novartis Group reflects continuing operations according to the criterias set out by the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard (one major site divestment in 2016)

<sup>2</sup> Includes Novartis associates and third party personnel managed by Novartis associates

<sup>3</sup> Includes all work-related injury and illness, whether leading to lost time or not