



Material use in Vestas turbines

This brochure provides an overview of the materials used in all wind turbines in Vestas' current portfolio.

Main materials used

- Steel and iron materials
- Aluminium and alloys
- Copper and alloys
- Polymer materials
- Glass / carbon composites
- Electronics / electrics
- Lubricants and fluids

By knowing how Vestas' products and materials contribute to the environmental performance of the wind plant, it is possible to make fact-based and informed decisions that will minimise overall environmental impacts. Life Cycle Assessments are used to provide detailed knowledge regarding the material composition of the wind plant.

The figures on the following pages show the typical material breakdown of Vestas' turbines.

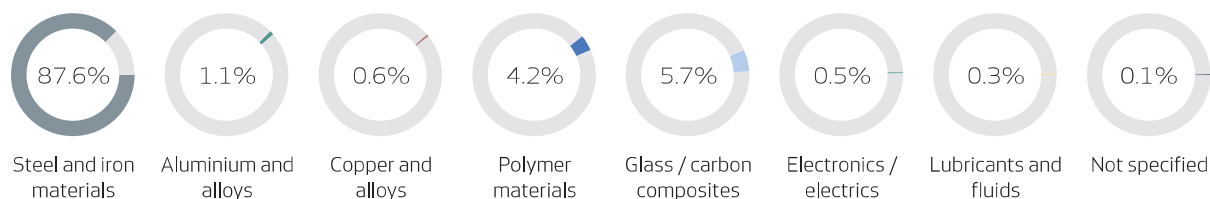
For example, a V162-6.2 MW™ turbine is composed of around 88% metals (e.g. steel, iron, copper and aluminium), 10% polymers and composite materials, and the remainder a mixture of electronics/electrical items, lubricants and fluids, etc.

EnVentus™ Platform Turbines



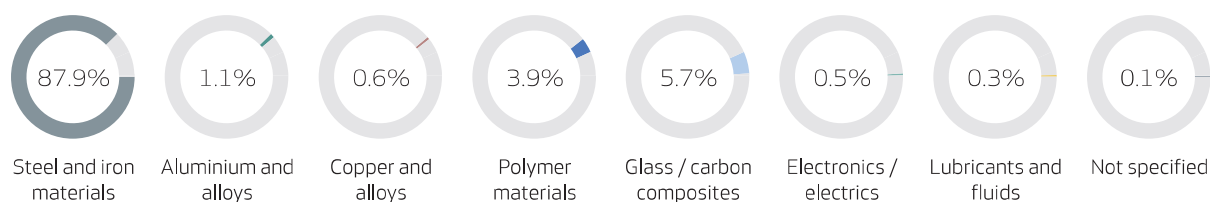
V172-7.2 MW™

166m hub height and wind class IECS. Total mass: 928 tonnes *



V162-7.2 MW™

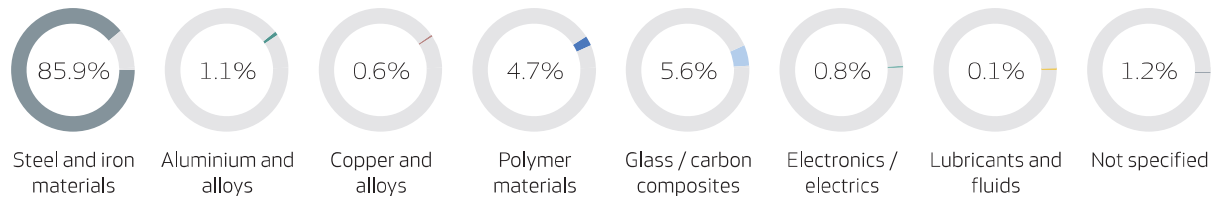
166m hub height and wind class IECS. Total mass: 894 tonnes *



* Values are based on an internal streamlined Life Cycle Assessment

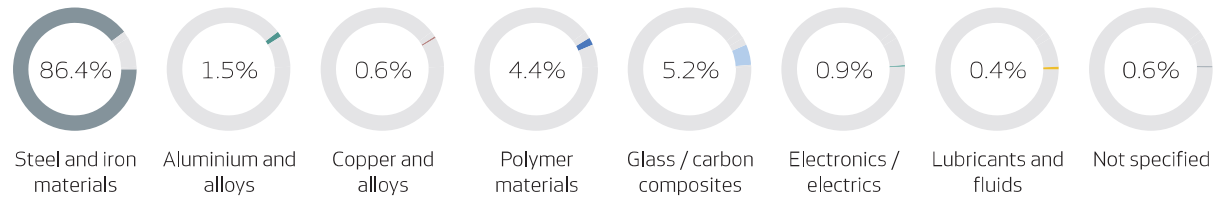
V162-6.2 MW™

149m hub height and wind class IECS. Total mass: 801 tonnes*



V150-6.0 MW™

155m hub height and wind class IECS. Total mass: 773 tonnes*



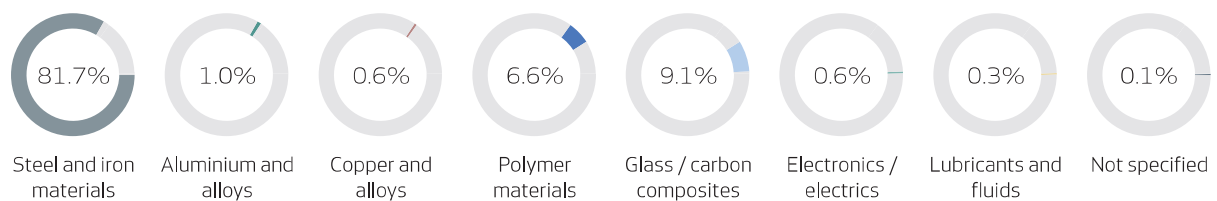
* Values are based on an externally reviewed Life Cycle Assessment available on vestas.com

4 MW Platform Turbines



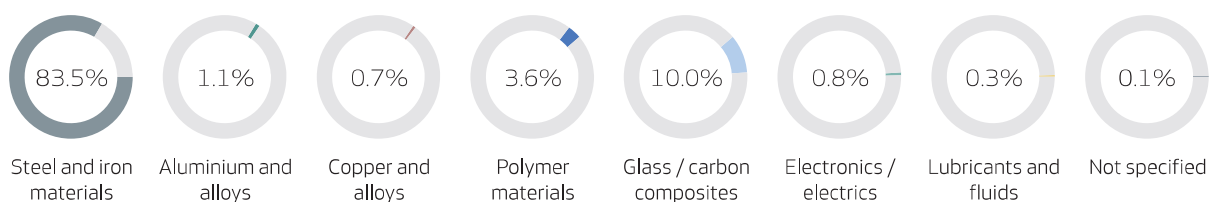
V163-4.5 MW™

98m hub height and wind class IEC3. Total mass: 501 tonnes*



V150-4.5 MW™

105m hub height and wind class IEC3B. Total mass: 446 tonnes**

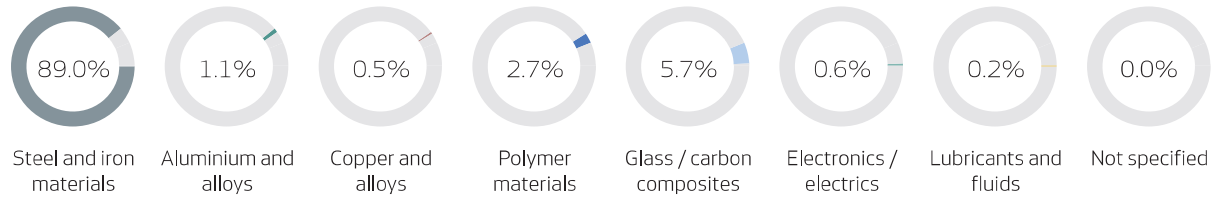


* Values are based on an internal streamlined Life Cycle Assessment

** Values are based on an externally reviewed Life Cycle Assessment

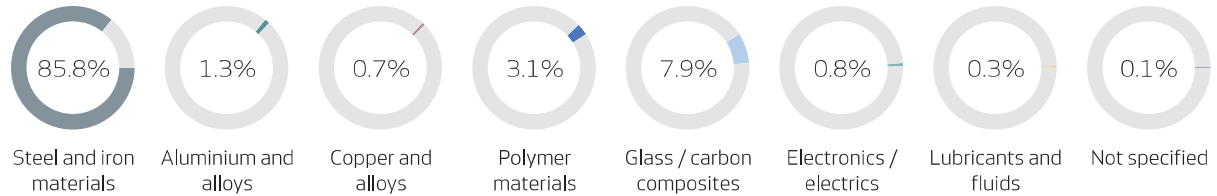
V150-4.2 MW™

155m hub height and wind class IEC3B. Total mass: 682 tonnes*



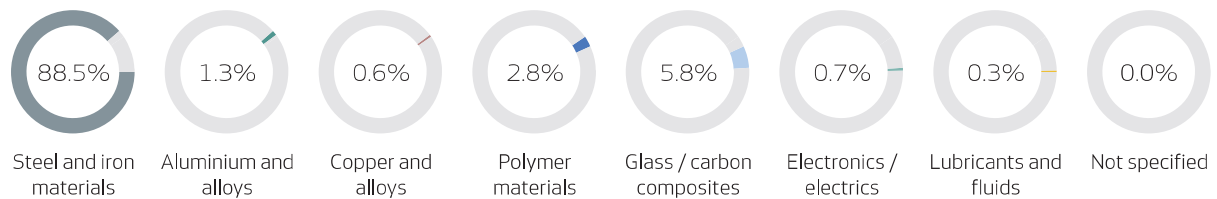
V136-4.5 MW™

112m hub height and wind class IEC2B. Total mass: 466 tonnes*



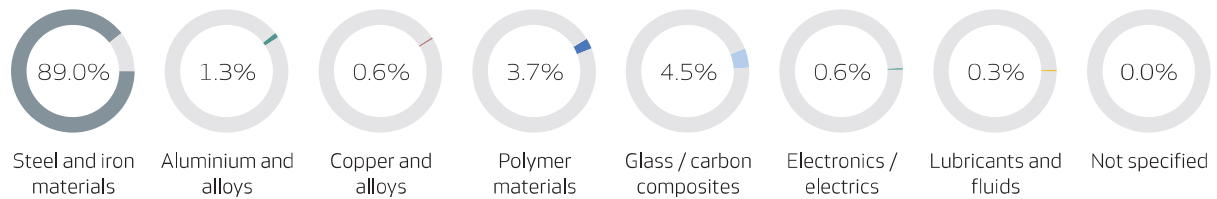
V136-4.2 MW™

112m hub height and wind class IEC2B. Total mass: 544 tonnes*



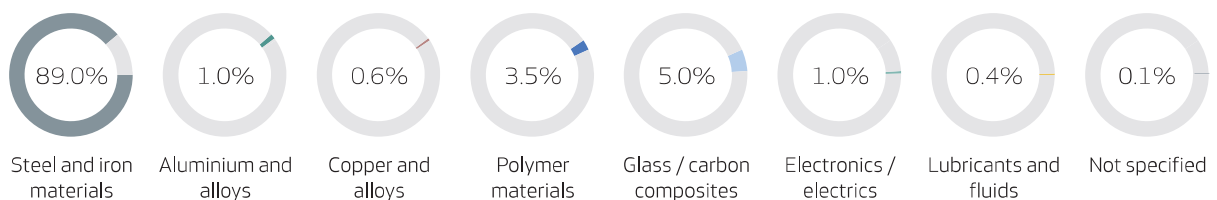
V136-3.45 MW®

112m hub height and wind class IEC3A. Total mass: 570 tonnes*



V126-3.45 MW®

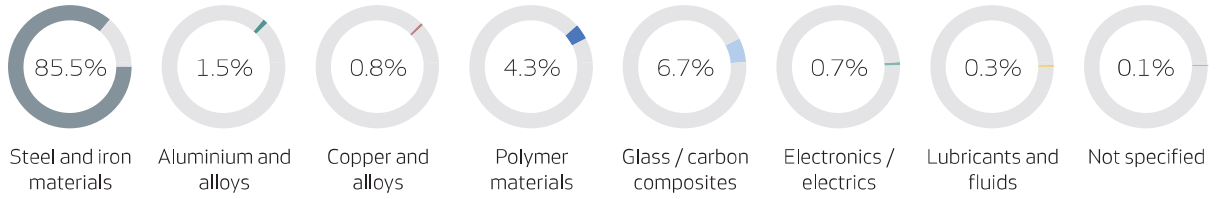
117m hub height and wind class IEC2A. Total mass: 530 tonnes*



*Values are based on an externally reviewed Life Cycle Assessment available on vestas.com

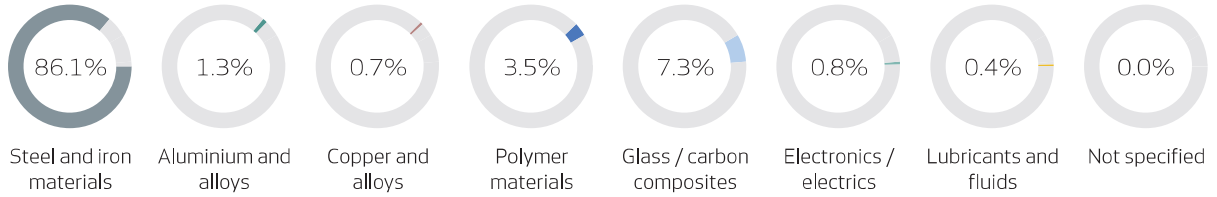
V117-4.2 MW™

91.5m hub height and wind class IEC1B. Total mass: 425 tonnes*



V117-3.45 MW®

91.5m hub height and wind class IEC1B. Total mass: 436 tonnes*



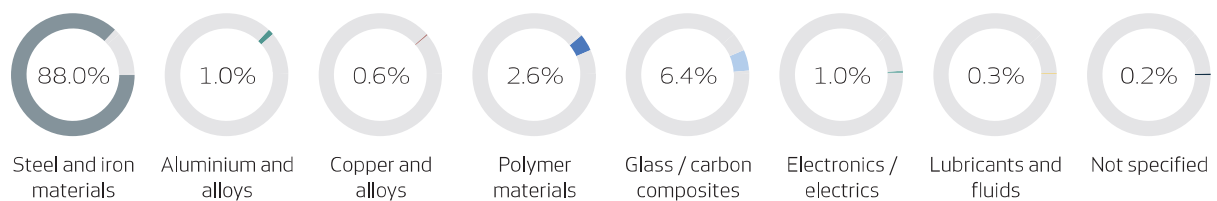
* Values are based on an externally reviewed Life Cycle Assessment available on [vestas.com](https://www.vestas.com)

2 MW Platform Turbines



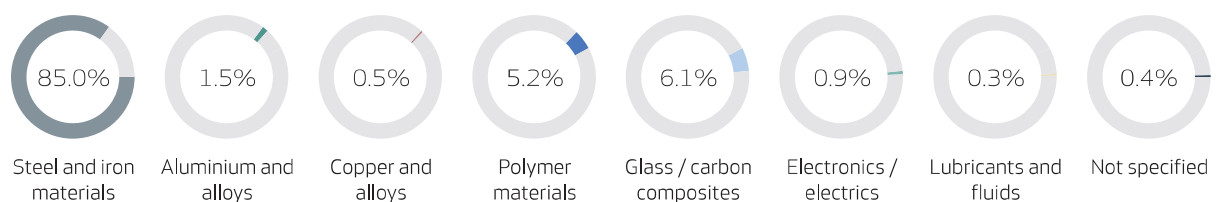
V120-2.2 MW™

122m hub height and wind class IEC3. Total mass: 317 tonnes *



V110-2.0 MW™

80m hub height and wind class IEC3A. Total mass: 248 tonnes *



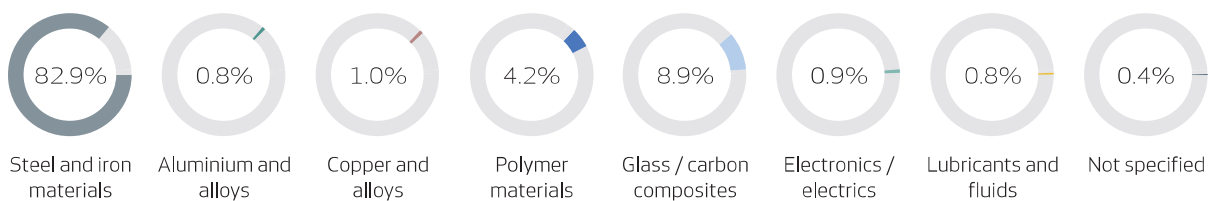
* Values are based on an externally reviewed Life Cycle Assessment available on [vestas.com](https://www.vestas.com)

Offshore Platform Turbines



V236-15 MW™

143m hub height and wind class IECS. Total mass: 1622 tonnes*



* Values are based on an externally reviewed Life Cycle Assessment available on [vestas.com](https://www.vestas.com)

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Turbine type	Nominal capacity (MW)	Hub height (m)	Tower Type (Tubular Steel Tower, Large Diameter Steel Tower, Hybrid Tower)	Date for definition of costs	Decommissioning	Cranes	Foundation Disposal	Other disposal (GRP parts, oils, transformer/Transformer Station)	Total estimated costs (excl. VAT)
V110	2.0 / 2.2	95	TST	May 2011	€ 12,300	€ 33,100	€ 10,500	€ 9,000	€ 64,900
		100	TST	May 2011	€ 12,300	€ 33,100	€ 10,500	€ 9,000	€ 64,900
V117	3.0 / 3.3 / 3.45 / 3.6 / 4.0 / 4.2 / 4.3	91.5	TST	January 2022	€ 15,170	€ 40,480	€ 12,850	€ 12,850	€ 81,350
		116.5	TST	January 2022	€ 17,470	€ 51,980	€ 16,880	€ 12,850	€ 98,980
		142	LDST	January 2022	€ 19,320	€ 54,280	€ 16,880	€ 14,000	€ 104,280
V126	3.3 / 3.45 / 3.6	87	TST	January 2022	€ 17,470	€ 40,480	€ 16,880	€ 12,850	€ 87,480
		117	TST	January 2022	€ 19,770	€ 51,980	€ 16,880	€ 12,850	€ 101,280
		137	TST	January 2022	€ 29,670	€ 54,280	€ 17,830	€ 15,150	€ 116,930
		149	LDST	January 2022	€ 33,120	€ 54,280	€ 20,130	€ 15,150	€ 122,680
		166	LDST	December 2021	€ 36,570	€ 77,280	€ 21,280	€ 15,150	€ 150,280
V136	3.0 / 3.3 / 3.45 / 3.6 / 4.0 / 4.2 / 4.3	82	TST	December 2021	€ 19,320	€ 40,480	€ 15,530	€ 15,150	€ 90,480
		112	TST	November 2021	€ 28,520	€ 42,780	€ 15,530	€ 15,150	€ 101,980
		132	TST	December 2021	€ 29,670	€ 54,280	€ 17,830	€ 15,150	€ 116,930
		149	TST	November 2021	€ 33,120	€ 54,280	€ 21,280	€ 15,150	€ 123,830
		166	TST	November 2021	€ 36,570	€ 77,280	€ 21,280	€ 15,150	€ 150,280
V150	4.0 / 4.2 / 4.3	125	TST	November 2021	€ 29,670	€ 54,250	€ 18,980	€ 15,150	€ 118,050
		145	LDST	November 2021	€ 31,970	€ 56,580	€ 20,130	€ 15,150	€ 123,830
		166	LDST	December 2021	€ 36,570	€ 77,280	€ 21,280	€ 15,150	€ 150,280
V150	5.6 / 6.0	105	TST	November 2024	€ 29,730	€ 58,830	€ 18,980	€ 16,920	€ 124,460
		125	TST	November 2024	€ 32,640	€ 59,710	€ 21,380	€ 16,920	€ 130,650
		148	TST	November 2024	€ 35,170	€ 62,240	€ 22,650	€ 16,920	€ 136,980
		166	CHT	December 2024	€ 40,230	€ 85,010	€ 20,240	€ 16,920	€ 162,400
		166	LDST	December 2024	€ 40,230	€ 85,010	€ 23,910	€ 16,920	€ 166,070
		169	LDST	November 2019	€ 31,800	€ 67,200	€ 18,900	€ 13,370	€ 131,270
V162	5.6 / 6.0 / 6.2	119	TST	October 2024	€ 31,690	€ 58,440	€ 21,640	€ 22,680	€ 134,450
		148	TST	October 2024	€ 35,490	€ 62,240	€ 22,900	€ 22,680	€ 143,310
		166	CHT	January 2025	€ 52,560	€ 91,330	€ 20,880	€ 22,680	€ 187,450
		166	LDST	November 2021	€ 36,280	€ 77,280	€ 21,970	€ 20,620	€ 156,150
V162	6.8 / 7.2	119	TST	October 2024	€ 36,440	€ 67,210	€ 24,880	€ 26,080	€ 154,610
		169	CHT	October 2024	€ 60,450	€ 105,030	€ 24,010	€ 26,080	€ 215,570
V172	6.8 / 7.2	114	TST	October 2024	€ 36,440	€ 67,210	€ 24,880	€ 27,390	€ 155,920
		165	CHT	October 2024	€ 60,450	€ 105,030	€ 24,010	€ 27,390	€ 216,880
		175	CHT	October 2024	€ 63,470	€ 120,780	€ 25,210	€ 27,390	€ 236,850
		199	CHT	October 2025	€ 73,000	€ 126,820	€ 29,000	€ 27,390	€ 256,210

PLEASE NOTE: all costs are indicative and require indexation. No rights can be derived based on above information.

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