

VSCC Car Build Emissions Calculator - Certified by the Schumacher Institute

NOTES

Emissions Multiplier by Build Type

Completely Hand Built	1.0
Prewar production line; very limited machine tools	1.3
Postwar unitary body assembled by hand	1.3
1945 - 1955 production line; limited machine tools	1.5
1955 - 1965 production line; some machine tools	1.6
1965 - 1975 production line; many machine tools	1.7
1975 - 1985 production line; complex machine tools	1.8
1985 - 1995 production line; early robotisation	1.9
1995 - 2005 production line; significant robotisation	2.0
2005 - 2015 production line; complex robotisation	2.1
2015 - 2025 production line; efficient robotised mftr	1.8

Tonnes of Carbon Dioxide emitted per tonne of metal produced - tCO2e/t

CO2te/t of metal source: clear.eco 4.02

Minimum risk mitigation per project: clear.eco +15%

Minimum Schumacher Institute sign off value is 1:1 + 15% capture & 1:1 + 15% offset, i.e. 2.3:1

Average swarf/waste is raw material discarded during manufacture of vehicle or part.

We are grateful to Dongni Pan, ex-R&D Engineer at Vintage Bentley, for reminding us that

swarf loss increases proportionate to the complexity and weight of the item machined.

The figure chosen is intended as a sensibly representative average.

Version: 4 20/12/2024 Original version 22/01/2023

Tree-V (FBHV official partner) UK capture through environment-species matched tree planting (1t) and peatland restoration (t1t)

Net-Hero (HCVA official partner) Internatinal offset through Upper Amazon basin rain forest restoration (1t) and Choco Darien region moist forest restoration (1t)

Car Make, Model, Year and cwt	Lbs	Kgs	Swarf loss		Prod'n type Multiplier	TOTAL tonnes	kg -> t 0.001	CO2e / t 4.02	Base 1:1 cost	Tree-V/t	£	30.00	AVG	£	19.50	Weight Sources
			Net-Hero/t	£						9.00						
			Min SI sign-off Supportive 2.3:1	Contributive 3:1						Regenerative 4:1						
A.J.S 9hp Saloon, 1930: 16cwt	1792.00	812.84	162.57	975.40	1.25	1.22	4.90	£ 95.58	£ 219.83	£ 286.73	£ 382.31				The Autocar, 1930 p236	
A.J.S 9hp Saloon, 1932: 2-up, 21cwt	2352.00	1066.85	213.37	1280.22	1.25	1.60	6.43	£ 125.45	£ 288.52	£ 376.34	£ 501.78				The Motor, 1932 p278	
AC 12hp, 2-seater, 1924: 14.5cwt	1624.00	736.63	147.33	883.96	1.25	1.10	4.44	£ 86.62	£ 199.22	£ 259.85	£ 346.47				The Autocar, 1924 p999	
Alfa Romeo 22-90 6 cylinder (curb weight)	2350.00	1065.94	213.19	1279.13	1.25	1.60	6.43	£ 125.34	£ 288.28	£ 376.02	£ 501.35				'Alfa Romeo 1920-40'; Clarke	
Alfa Romeo 8-C 2900B, 1939 (curb weight)	2400.00	1088.62	217.72	1306.34	1.25	1.63	6.56	£ 128.01	£ 294.41	£ 384.02	£ 512.02				'Alfa Romeo 1920-40'; Clarke	
Alfa Romeo Henry Birkin 8cyl, 1931: (approx) 22cwt	2464.00	1117.65	223.53	1341.18	1.25	1.68	6.74	£ 131.42	£ 302.26	£ 394.26	£ 525.68				'Alfa Romeo 1920-40'; Clarke	
Alvis 12-60, 1931: 21.25 cwt	2380.00	1079.55	215.91	1295.46	1.25	1.62	6.51	£ 126.94	£ 291.96	£ 380.82	£ 507.76				The Autocar, 1931 p102	
Alvis Avista, 1927: 27 cwt	3024.00	1371.66	274.33	1645.99	1.25	2.06	8.27	£ 161.29	£ 370.96	£ 483.86	£ 645.15				The Motor, 1927 p790	
Alvis Silver Eagle four seater, 1930: 24.5cwt	2744.00	1244.66	248.93	1493.59	1.25	1.87	7.51	£ 146.35	£ 336.61	£ 439.06	£ 585.41				Alvis Gold Portfolio, p39	
Alvis Speed Twenty sports tourer, 1935: [2-up]31.5cwt	3528.00	1600.27	320.05	1920.33	1.25	2.40	9.65	£ 188.17	£ 432.79	£ 564.50	£ 752.67				Alvis Gold Portfolio, p80	
Alvis Supercharged front drive, 2-up: 25cwt	2800.00	1270.06	254.01	1524.07	1.25	1.91	7.66	£ 149.34	£ 343.48	£ 448.02	£ 597.36				The Motor, 1929 p1231	
Amilcar 8hp, 1921: 8.25cwt	924.00	419.12	83.82	502.94	1.25	0.63	2.53	£ 49.28	£ 113.35	£ 147.85	£ 197.13				The Autocar, 1921 p1239	
Armstrong Siddley 20hp, 1934: 34.5cwt	3864.00	1752.68	350.54	2103.22	1.25	2.63	10.57	£ 206.09	£ 474.00	£ 618.27	£ 824.36				The Motor, 1934 p225	
Armstrong Siddley short 15hp, 1932: 25 1/4cwt	2830.00	1283.67	256.73	1540.40	1.25	1.93	7.74	£ 150.94	£ 347.16	£ 452.82	£ 603.76				The Motor, 1932 p320	
Aston Martin Ulster CMC614, 1935: dry weight 18cwt	2016.00	914.44	182.89	1097.33	1.25	1.37	5.51	£ 107.52	£ 247.31	£ 322.57	£ 430.10				AM Ulster, 2018 p28; Archer	
Austin 12-4, 1932: 22.5cwt	2520.00	1143.05	228.61	1371.66	1.25	1.71	6.89	£ 134.41	£ 309.13	£ 403.22	£ 537.62				The Motor 1932 p208	
Austin 16, 1932, 2-up: 29.5cwt	3304.00	1498.67	299.73	1798.40	1.25	2.25	9.04	£ 176.22	£ 405.31	£ 528.66	£ 704.88				The Motor, 1932 p191	
Austin 16-6, 1932, 2-up: 27cwt	3024.00	1371.66	274.33	1645.99	1.25	2.06	8.27	£ 161.29	£ 370.96	£ 483.86	£ 645.15				The Motor, 1928 p461	
Austin 20, 1928, 2-up: 29cwt	3248.00	1473.27	294.65	1767.92	1.25	2.21	8.88	£ 173.23	£ 398.44	£ 519.70	£ 692.94				The Motor, 1928 p62	
Austin 7, 1922 unladen 'between 6cwt and 6.5cwt'	728.00	330.21	66.04	396.26	1.25	0.50	1.99	£ 38.83	£ 89.31	£ 116.48	£ 155.31				The Autocar, 1922 p181	
Austin Big 7, 1937: 14.5 cwt	1624.00	736.63	147.33	883.96	1.25	1.10	4.44	£ 86.62	£ 199.22	£ 259.85	£ 346.47				The Autocar, 1937 p899	
Autin 7 Deluxe Saloon, 1932: (1-up) 11cwt	1232.00	558.83	111.77	670.59	1.25	0.84	3.37	£ 65.71	£ 151.13	£ 197.13	£ 262.84				The Motor, 1932 p208	

Avon 16hp close-coupled coupe, 1932: 20cwt (unladen)	2240.00	1016.05	203.21	1219.26	1.25	1.52	6.13	£ 119.47	£ 274.79	£ 358.42	£ 477.89	The Motor, 1932 p189
Bentley 3 ltr Speed 2-up: 33cwt	3696.00	1676.48	335.30	2011.77	1.25	2.51	10.11	£ 197.13	£ 453.40	£ 591.39	£ 788.51	The Motor, 1925 p876
Bentley 4 1/2 4 Seater Sports, 2-up: 35cwt	3920.00	1778.08	355.62	2133.70	1.25	2.67	10.72	£ 209.08	£ 480.87	£ 627.23	£ 836.30	The Motor, 1928 p665
Bentley 4 1/2 Supercharged VdeP, 2-up: 40.5cwt	4536.00	2057.49	411.50	2468.99	1.25	3.09	12.41	£ 241.93	£ 556.44	£ 725.79	£ 967.72	The Motor, 1930 p553
Bentley 6 chassis only: 32cwt	3584.00	1625.67	325.13	1950.81	1.25	2.44	9.80	£ 191.15	£ 439.66	£ 573.46	£ 764.62	The Motor, 1931 p653
Bentley Eight, 1987; 45.3	5073.60	2301.34	460.27	2761.61	1.30	3.59	14.43	£ 281.43	£ 647.28	£ 844.28	£ 1,125.71	Owner's Manual
BMW 328 (Kerb weight with 50 litres of petrol)	1719.61	780.00	156.00	936.00	1.25	1.17	4.70	£ 91.72	£ 210.95	£ 275.15	£ 366.87	From Roadster to Legend' Simons, R.
British Salmson 4 seater tourer, 1936: 21.5cwt	2408.00	1092.25	218.45	1310.70	1.25	1.64	6.59	£ 128.43	£ 295.39	£ 385.30	£ 513.73	The Autocar, 1936
Bugatti Type 22 'petit pur sang', 1910-12 (chassis weight)	900.00	408.23	81.65	489.88	1.25	0.61	2.46	£ 48.00	£ 110.40	£ 144.01	£ 192.01	Bugatti Trust, 2023
Bugatti Type 35A, 1926-29 (approx)	1650.00	748.43	149.69	898.11	1.25	1.12	4.51	£ 88.00	£ 202.41	£ 264.01	£ 352.02	Bugatti Trust, 2023
Bugatti Type 37, 1926-30 (approx)	1600.00	725.75	145.15	870.90	1.25	1.09	4.38	£ 85.34	£ 196.28	£ 256.01	£ 341.35	Bugatti Trust, 2023
Bugatti Type 40 Roadster, 1926-30 (approx)	2200.00	997.90	199.58	1197.48	1.25	1.50	6.02	£ 117.34	£ 269.88	£ 352.02	£ 469.35	Bugatti Trust, 2023
Bugatti Type 41 Royale, 1929-33 (approx)	7000.00	3175.14	635.03	3810.17	1.25	4.76	19.15	£ 373.35	£ 858.70	£ 1,120.05	£ 1,493.40	Bugatti Trust, 2023
Bugatti Type 43, 1927-32 (approx)	2400.00	1088.62	217.72	1306.34	1.25	1.63	6.56	£ 128.01	£ 294.41	£ 384.02	£ 512.02	Bugatti Trust, 2023
Bugatti Type 44 Tourer, 1927-30 (approx)	2400.00	1088.62	217.72	1306.34	1.25	1.63	6.56	£ 128.01	£ 294.41	£ 384.02	£ 512.02	Bugatti Trust, 2023
Bugatti Type 57, 1937-40 (chassis weight approx)	2100.00	952.54	190.51	1143.05	1.25	1.43	5.74	£ 112.00	£ 257.61	£ 336.01	£ 448.02	Bugatti Trust, 2023
Citroen 12-24 [2-up?]: 23cwt	2576.00	1168.45	233.69	1402.14	1.25	1.75	7.05	£ 137.39	£ 316.00	£ 412.18	£ 549.57	The Motor, 1927 p321
Crossley 2ltr Sports Saloon, 1934: 22cwt	2464.00	1117.65	223.53	1341.18	1.25	1.68	6.74	£ 131.42	£ 302.26	£ 394.26	£ 525.68	The Motor, 1934 p736
Daimler 16-20hp, 1932: 37cwt	4144.00	1879.69	375.94	2255.62	1.25	2.82	11.33	£ 221.02	£ 508.35	£ 663.07	£ 884.09	The Motor, 1932 p612
Delage 14hp: (31cwt)	3472.00	1574.87	314.97	1889.85	1.25	2.36	9.50	£ 185.18	£ 425.92	£ 555.54	£ 740.73	The Autocar, 1924 p1010
Fiat 501 4 seater open body with accesories: 18cwt	2016.00	914.44	182.89	1097.33	1.25	1.37	5.51	£ 107.52	£ 247.31	£ 322.57	£ 430.10	Owner's Manual, 1920-21
Fraser Nash T.T. Replica, 1933: 17cwt	1911.00	866.81	173.36	1040.18	1.25	1.30	5.23	£ 101.92	£ 234.43	£ 305.77	£ 407.70	'The Chain Drive', 1965 p200
Hudson Peacemaker 4ltr, 1932: 33cwt	3696.00	1676.48	335.30	2011.77	1.25	2.51	10.11	£ 197.13	£ 453.40	£ 591.39	£ 788.51	The Motor, 1932 p316
Humber 12, 1933: 26cwt	2912.00	1320.86	264.17	1585.03	1.25	1.98	7.96	£ 155.31	£ 357.22	£ 465.94	£ 621.25	The Motor, 1933 p400
Invicta Supercharged Saloon 12hp, 1932: 24.5cwt	2520.00	1143.05	228.61	1371.66	1.25	1.71	6.89	£ 134.41	£ 309.13	£ 403.22	£ 537.62	The Autocar, 1932 p483
Jaguar Mk VII, 1953; 34.5cwt	3864.00	1752.68	350.54	2103.22	1.50	3.15	12.68	£ 247.31	£ 568.81	£ 741.92	£ 989.23	Skilleter, Peter (1988) 'Jaguar Saloon
Jaguar SS 3.5 Saloon, 1938; 35cwt	3528.00	1600.27	320.05	1920.33	1.25	2.40	9.65	£ 188.17	£ 432.79	£ 564.50	£ 752.67	Official maintenance guide, VSCC Li
Lagonda Rapier, 1934; 17cwt	1904.00	863.64	172.73	1036.37	1.00	1.04	4.17	£ 81.24	£ 186.85	£ 243.72	£ 324.96	Autocar, 20th July 1934 road test
Lancia Augusta: 16 1/4 cwt	1820.00	825.54	165.11	990.64	1.25	1.24	4.98	£ 97.07	£ 223.26	£ 291.21	£ 388.28	Owner's Manual, 1934
Lincoln V12, 1932: 53.75cwt	6020.00	2730.62	546.12	3276.75	1.25	4.10	16.47	£ 321.08	£ 738.48	£ 963.24	£ 1,284.32	The Motor, 1932 p972
Little Scotsman Saloon 11.9hp, 1930: 20.75cwt	2324.00	1054.15	210.83	1264.98	1.25	1.58	6.36	£ 123.95	£ 285.09	£ 371.86	£ 495.81	The Autocar, 1930 p112
MG J.1 and J.2, 2-seater, 1934: complete car 13cwt	1456.00	660.43	132.09	792.52	1.25	0.99	3.98	£ 77.66	£ 178.61	£ 232.97	£ 310.63	MG Manual 1952 p469; Blower
Minerva 22-28 Limousine, 1930: 39cwt	4368	1981.29	396.26	2377.55	1.25	2.97	11.95	£ 232.97	£ 535.83	£ 698.91	£ 931.88	The Autocar, 1930 p924
Morris Ten Saloon, 1932: 19.75cwt	2212	1003.35	200.67	1204.01	1.25	1.51	6.05	£ 117.98	£ 271.35	£ 353.94	£ 471.91	The Motor, 1932 p199
Peugeot 6hp (Bugatti Type 19), 1912	727.525	330.00	66.00	396.00	1.25	0.49	1.99	£ 38.80	£ 89.25	£ 116.41	£ 155.21	Bugatti Trust, 2023
Railton 28.8hp Saloon, 1936: 24cwt 11lbs	2699	1224.24	244.85	1469.09	1.25	1.84	7.38	£ 143.95	£ 331.09	£ 431.86	£ 575.81	The Autocar, 1936 p319
Railton Sports Model, 1934: 22cwt	2464	1117.65	223.53	1341.18	1.25	1.68	6.74	£ 131.42	£ 302.26	£ 394.26	£ 525.68	The Motor, 1934 p142
Riley 1.5ltr Falcon Saloon, 1935: [1-up] 27cwt	3024	1371.66	274.33	1645.99	1.25	2.06	8.27	£ 161.29	£ 370.96	£ 483.86	£ 645.15	The Motor, 1935 p1091
Riley 16hp Adelphi, 1938: 30cwt (unladen)	3360	1524.07	304.81	1828.88	1.25	2.29	9.19	£ 179.21	£ 412.18	£ 537.62	£ 716.83	The Motor 1938 p1152
Riley 9 Kestral, 1933 22wt	2464	1117.65	223.53	1341.18	1.25	1.68	6.74	£ 131.42	£ 302.26	£ 394.26	£ 525.68	The Motor, 1934 p241
Rolls Royce 20, 1920: chassis weight 22.5 cwt	2520	1143.05	228.61	1371.66	1.25	1.71	6.89	£ 134.41	£ 309.13	£ 403.22	£ 537.62	The RR 20, 1979 p528; Fasal
Rover Speed Model Saloon, 1931: 27.25cwt	3052	1384.36	276.87	1661.24	1.25	2.08	8.35	£ 162.78	£ 374.39	£ 488.34	£ 651.12	The Motor, 1931 p870
Singer 14-34 Saloon [2-up]: 44cwt	4928	2235.30	447.06	2682.36	1.25	3.35	13.48	£ 262.84	£ 604.53	£ 788.51	£ 1,051.35	The Motor, 1927 p159
Singer Junior 4 seater, 1926: 12.25cwt	1372	622.33	124.47	746.79	1.25	0.93	3.75	£ 73.18	£ 168.31	£ 219.53	£ 292.71	The Motor, 1926 p839
Singer 'Nine' Saloon, 1932: 15.5 cwt (unladen)	1736	787.44	157.49	944.92	1.25	1.18	4.75	£ 92.59	£ 212.96	£ 277.77	£ 370.36	The Motor, 1932 p96
Sunbeam 25 limousine, 1930: 46cwt	5152	2336.91	467.38	2804.29	1.25	3.51	14.09	£ 274.79	£ 632.01	£ 824.36	£ 1,099.14	The Motor, 1930 p739

Sunbeam 3ltr Weymann saloon, 1928: 36.5cwt	4088	1854.28	370.86	2225.14	1.25	2.78	11.18	£ 218.04	£ 501.48	£ 654.11	£ 872.14	The Motor, 1928 p155
Trojan Saloon 10hp, 1931: 19.25cwt	2156	977.94	195.59	1173.53	1.25	1.47	5.90	£ 114.99	£ 264.48	£ 344.97	£ 459.97	The Autocar, 1931 p379
Vauxhall 14-40, as tested [2-up]: 27cwt	3024	1371.66	274.33	1645.99	1.25	2.06	8.27	£ 161.29	£ 370.96	£ 483.86	£ 645.15	The Motor, 1925 p886
Vauxhall Cadet (2048cc), 1932: [2-up] 27cwt	3024	1371.66	274.33	1645.99	1.25	2.06	8.27	£ 161.29	£ 370.96	£ 483.86	£ 645.15	The Motor, 1932 p432
Wolesely 16, 1932: 28 1/4 cwt	3164	1435.17	287.03	1722.20	1.25	2.15	8.65	£ 168.75	£ 388.13	£ 506.26	£ 675.02	The Motor, 1932 p131
Wolseley 21/60 saloon, 2-up: 35cwt	3920	1778.08	355.62	2133.70	1.25	2.67	10.72	£ 209.08	£ 480.87	£ 627.23	£ 836.30	The Motor, 1928 p663
Wolseley Hornet Saloon 6 cyl, 1932: 19cwt	2128	965.24	193.05	1158.29	1.25	1.45	5.82	£ 113.50	£ 261.05	£ 340.49	£ 453.99	The Motor, 1932 p131
Wolseley Hornet Special 6 cyl, 1932: 15.5cwt	1736	787.44	157.49	944.92	1.25	1.18	4.75	£ 92.59	£ 212.96	£ 277.77	£ 370.36	The Motor, 1932 p979