

biocoal 1/2 1/10 2/5
Tim Flannery
2015
volumetric heat capacity 2000
90C 50C
300C
300C 300C 1000C
(1) (2) (3) (4) (5) (6) (7)
300C 1.2 0.7
450C 0.7

60
5000 nitrogen fixation
360

20°C 100 253 0.1%
1/5
1/10



biochar production reactor

biochar production reactor

biochar production reactor United Nations Industrial Development Organization 2007 International Energy Agency, IEA 2050 610 exajoules, EJ, 1×10^{18} J 2012 560 EJ, 2.2 ppm 610 EJ 500 EJ 2 ppm 2050, 450 ppm 2100 350 ppm

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biochar

1. Woolf, D. et al. Sustainable biochar to mitigate global climate change. *Nat. Commun.* 1:56 doi: 10.1038 / ncomms1053 (2010).
2. Cernansky, R., State-of-the-Art Soil, *Nature*, Vol 517, 258-260 (2015).