

Wood chip and pellet boilers

Jim H. Adams 20th May 2014

I have been asked by the Sustainable Living Group (SLG) to clear up what I think about wood chip and pellet boilers, and report back at the 20th May meeting of it. These are my responses under various sustainable sub-headings.

Reducing greenhouse gases	Yes, because if the wood is burnt as waste anyway, using it in a boiler means, say, a gas boiler is not used. No, more CO ₂ would be produced than in burning gas.
Recycling	Yes, provided general take-up does not mean transport over long distances, for example long transport in the UK or from Indonesian rainforests.
Renewables	No. Under high take-up this would imply cutting down trees to provide wood chips and pellets rather than as a by-product from other uses. Yes. We need renewables because resources will run out. So coal, oil and gas have finite resources, which are not renewable. Wood chips and pellets are renewable only under small take-up or where the market induces growing sufficient extra trees locally.
Economic incentives	Yes, but subsidy is likely to be removed in the long term, removing financial viability.
Resilience	Yes, another source of supply would be available, in the event of energy shortage.
Effort	The boiler will entail more effort to service it, and to remove spent fuel.

- (1) Steve – (Greenwich University) points out that
 - (a) Wood chips are marginal.
 - (b) They should not be transported over long distances.
 - (c) They should not be derived from Indonesian rainforests, which is economically viable.
- (2) Incentives (governmental) are available, part of the Renewable Heat Incentives (RHI).
- (3) Lobbying by the wood chip industry has taken place.
- (4) Carbon saving. Wood chips are burnt. Compared with coal I dispute the comparison given by some websites. Wood should not be compared with replacing a coal fired-boiler, but with the efficient DRAX, the coal-fired station which is being decommissioned because of EU directives on reducing carbon emissions. To compare with electricity, the comparison should not be made with the average grid source, but a renewable electricity supplier.
- (5) A reason given is that, had the wood chips not been burnt in a boiler, they would have been disposed of near site, either

(a) To rot, liberating methane, a greenhouse with more potency than CO₂.

(b) Burnt.

Under (b) the proposition is not about putting CO₂ into the atmosphere, which happens anyway, but about recycling (in other words, substitution, so that burning takes place anyway but replaces burning of natural gas in a boiler).

(6) The energy situation described in my site www.jimhadams.com, in the eBook *The climate and energy emergencies* is that energy shortages will occur, and this will drive up the price of fossil fuel energy. Part of the market will then transfer to wood chips, with scenarios (1) (b) and (c) taking place, and because the government does not have to bear much cost currently in promoting wood chip boilers, it has agreed to do so, but will be under financial pressure to reduce or eliminate subsidies in the long term, and this will happen. I derive this from what has happened in the photovoltaic industry, where major cut-backs in support almost killed the industry, as I think was intended.

(7) In March 2011 the Government published its policy for the non-domestic RHI, including the intention to introduce air quality emission limits for biomass boilers (including CHP) that participate in the scheme. These limits were confirmed, with the maximum permitted emissions being 30 grams per gigajoule (g/GJ) net heat input for PM and 150g/GJ for NO_x.

As of 24 September 2013, for anyone planning to apply for the non-domestic RHI with a biomass boiler (including CHP) the installation will need to have emissions levels no higher than 30 grams per gigajoule (g/GJ) net heat input for PM and 150g/GJ for NO_x. Proof that the system does not exceed these limits will need to be provided to Ofgem on application and be in the form of either an RHI emissions certificate or an environmental permit. Ofgem will contact us if this certificate is incomplete, which could delay the accreditation process. Ofgem will also retain the information on the certificate to support their auditing process in the future.

Please note that the accreditation process for PV on Harvey's Brewery in Lewes by Ovesco, before the grant was released, I think took over two years to get the paperwork accepted.