

### Is Ecodesign anything more than box ticking?

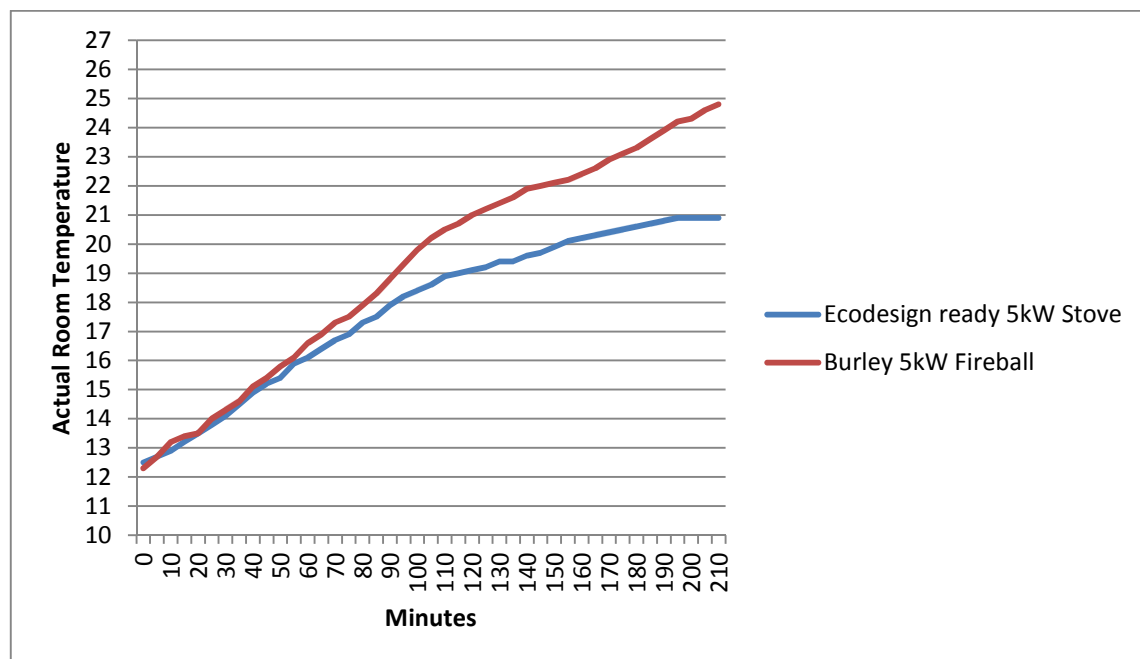
We receive numerous letters praising the Fireball stoves for their warmth and frugal use of wood, typically the figures quoted are 'twice the heat for half the fuel', we are in the frustrating position however, that to meet the Ecodesign regulations being introduced in 2022 we are going to have to make some of our stoves less efficient.

The levels of particulates from our Fireball stoves are already lower than the 2022 limits, which is what the media seems to focus on, but the smaller stoves exceed the limit of carbon monoxide (CO) by a small amount. The simple way in which manufacturers lower the level of CO is to introduce more air into the top of the stove, as CO is measured as a percentage you are not necessarily producing less CO, you are just diluting it, which really makes the allowed limits pretty meaningless.

The problem with introducing excessive air however is that you make the stove less efficient, you are burning more fuel and producing more greenhouse gasses, speeding up the flow through the stove so the hot gasses have less time to release their energy, and you are sucking warm air from your room at a far higher rate.

You may quite reasonably expect that when stoves are being tested and approved there is some type of measurement which shows how much the stove warms the room, but there isn't, none at all, the tests are carried out in a warehouse so there is no noticeable heating effect. Therefore there is no allowance for room sealing the appliance or for other heat recovery systems which help to create a warmer home and reduce the use of fuel.

To enable a true measurement of the heating effect in a room, over a week we carried out live tests on a Burley Fireball and a leading SIA Ecodesign ready stove and compared the actual room temperatures. All tests were carried out in identical weather and temperature conditions. The stoves were loaded with 1.2kg of wood every 40 minutes.

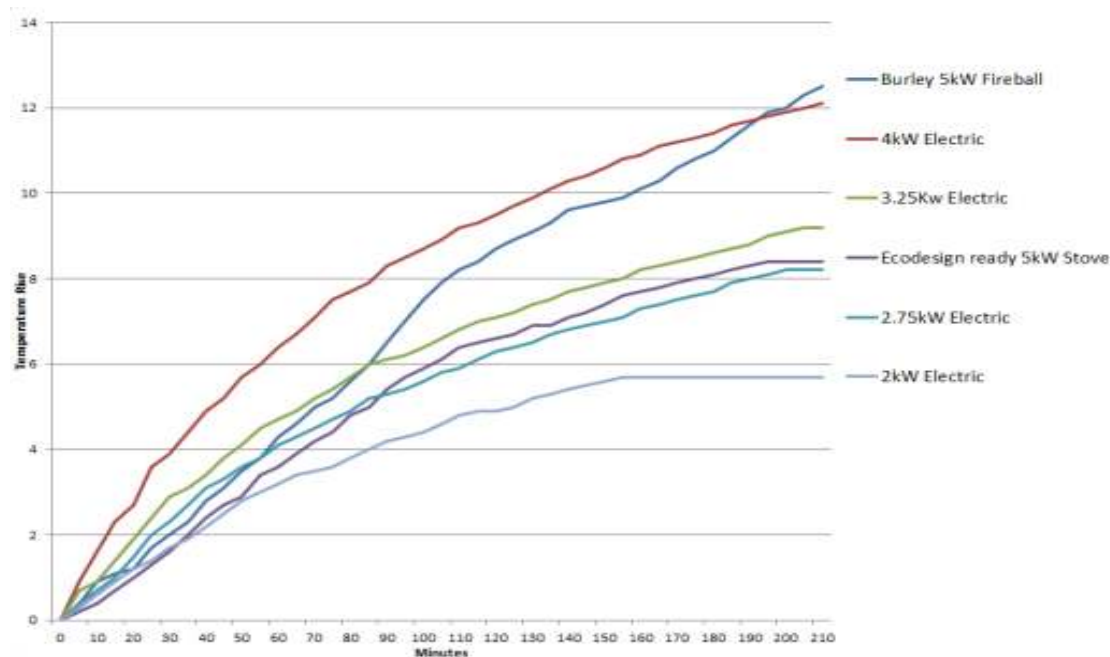


Before the room even reached 21 degrees, the Ecodesign ready stove had reached equilibrium, the stove was sucking out warmed air as fast as it could heat the room. Over the

same period of time the Burley Fireball had warmed the room to a toasty 25 degrees and showed no sign of slowing down.

21 degrees is not an adequate temperature for a room with a wood burner, the only way we could get the Ecodesign stove to warm the room to 23 degrees was to open the lower air control (contrary to the advice in the user instructions) and reload the stove with wood every 30 minutes. This is exactly what consumers will end up doing, but when used in this manner of operation the stove fails to meet the criteria to make it Ecodesign compliant.

To enable an accurate calculation of the true heating effect, we ran the same tests using varying amounts of electric heat and compared them to the stoves.



The Ecodesign stove (with a laboratory calculated efficiency of 81.6%) only heated the room slightly more than a 2.75kW heater (2.8kW), the Burley Fireball (laboratory calculated efficiency 89.1%, just 7.5% higher than the Ecodesign stove) heated the room more than a 4kW heater (4.2kW). Loading each stove with 1.2kg of wood every 40 minutes is 7.2kWh of energy, this makes the real life efficiency of the Ecodesign stove less than 39% and the Fireball over 58%, which is 50% more.

However, as stated earlier, this real life heating effect is not taken into consideration. In Paris you are allowed to drive a petrol Lamborghini which might do 3 miles to the gallon in an urban environment, but not a diesel Honda which will do 60 to the gallon. To reduce pollution the emissions should be calculated per mile, in the same way it is only logical or meaningful if the particulates and CO from your stove are measured proportionately to the amount of heat given.

So what does all this mean? Very reluctantly, by 2022 Burley will have to make their stoves less efficient to meet an arbitrary level of CO, but we will not take this retrograde step until we absolutely have to. Any stoves bought before 2022 can still be used after 2022, so my advice to anyone wanting a wood burner is to buy the world's most efficient stove while you can, because in three years' time you will have to buy a stove which uses more fuel, produces more greenhouse gasses, but may not be efficient enough to adequately warm your room.

The lunatics have taken over the asylum.

Steve Barson  
MD – Burley Appliances