The threat of a waste incinerator being built outside Gloucester is generating a lot of heat.

The County Council and two of our Labour MPs have been at loggerheads over the plans....

-earlier we reported that the Council defended it decision saying they are merely following government guidance - but Parmjit Dhanda & David Drew are not convinced and have come up with plans for a sports stadium.

The Letter columns are also full of dire warnings about toxic gases polluting everything down-wind.

Yet in the rest of western Europe, incineration is the main form of waste disposal.

So we asked our reporter, Andy Vivian, to investigate some of the claims made about incinerators to find out how much truth there is behind the vision of incinerators as the "polluting", "climate changing", "all consuming monsters" people make them out to be.

All combustion, even family bonfires, produce dangerous pollutants which are linked to diseases like cancer. Fifteen years ago incinerators had a poor record, but the pollution limits are much tighter now. A modern incinerator has monitors in the chimney checking pollution levels twenty-four hours a day. By keeping the combustion temperature at around a thousand degrees centigrade the dreaded PCBs and dioxins are largely destroyed. Should any traces remain in the exhaust gas these are trapped in bag filters before the gas goes up the chimney. Ade Jones an environmental scientist with the Welsh Assembly (or from the Environment Agency) told me he'd rather live next to an incinerator than a main road.

But the Gloucestershire lobby group SWARD - Safety in Waste and Rubbish Disposal, raises another concern. Combustion produces tiny particles known as fine particulates. Even the best filters can't remove these and population studies in the States show a statistical link between levels of particulates and the incidence of heart disease and lung cancer. But there's one problem with this argument. It's true an incinerator creates fine particulates, but as Chris Harmer, a member of the Stroud green party informed me, the amount is trivial compared to emissions from vehicles on the road.

OK, but what about the ash left behind?

The slag at the bottom of the grate is not dangerous and can be used as ballast - in Holland they build roads with it. But there's another residue -

around 3% of the original weight of rubbish rubbish - called flyash - which is the absorbent powder used in the bag filters. This is alkaline and needs to be slaked with water which turns it into a kind of concrete ready for burial in a hazardous waste landfill site. There's one of these dumps near Bishops Cleeve. My view is that the creation of a waste product which is even slightly hazardous is a drawback. However, it seems to me that this is more of a management issue than a pollution issue.>

This morning we're looking at the pros and cons of waste incinerators. The chairman of the Audit Commission, Michael O'Higgins, said recently that "there needs to be a "mature" debate about waste, and that instead of Nimbyism, people should accept the reality that incineration plants are needed."

However much recycling we do, there will still be about 30% of our rubbish which has to be disposed of. Incineration is one way to avoid sending this residual waste to landfill. But Friends of the Earth say it's not the green way to do it. Andy Vivian looks at the environmental arguments for and against incinerators.

Burning rubbish in an incinerator produces a lot of carbon dioxide which is a green house gas. It traps the sun's heat and causes the globe to warm up. Friends of the Earth believe this is reason enough to ban incinerators.

If put into landfill the same rubbish would decompose and produce methane which is more than twenty-times more warming than carbon dioxide. So the one thing Friends of the Earth is not arguing is that we should continue with landfill as we do now.

What they suggest is that after removing all the materials which can be recycled we should compost the rest. The end product would be a dirty compost, unsuitable for food production, but it would around 90% biologically stable. This means you could dump it in landfill confident that it won't produce much more methane. So the earth stays cooler. But what about the energy involved in composting and incinerating?

Composting is a net user of energy - there are large fans to be powered, and mechanical machinery. Incineration on the other hand produces energy. Burning eleven tonnes of rubbish an hour yields enough electricity to run 20,000 homes. So the local power station has a reduced power load, which means less carbon dioxide going up its chimneys. But there's a snag, incinerators make inefficient generators, only 20% of the heat from the steam boilers gets converted to energy. In environmental terms you may still be better off composting.

But the picture changes completely if you can find a better use for the steam. In Denmark they heat their homes with incinerator heat, distributed underground in steam pipes. The Green party would like to see it used for industry here. Stonehouse Dairy and Gloucestershire Royal use large amounts of steam for sterilization, Steam is used in paper making. Make use of the steam and incineration starts to look positively green. In terms of the energy conversion you're looking at 80% efficiency, which is double that of a coal burning power station.

We're playing with fire this morning - looking at the controversial subject of waste incineration. As you know, this is one of the options being considered for Gloucestershire's residual waste - that's what's left behind when you've recycled as much as you can. But lots of people are concerned, and not all concerns are based on fact.

We've already investigated the issues of pollution and global warming. But there's another reason why so many are worried about incinerators - it's a gut thing - they're such all consuming monsters - can we really tame them or are they going to force us to abandon all our principles just to satisfy their voracious appetite?

Shire Hall has been talking about an incinerator which would burn 175 kilo-tonnes of residual waste each year. That's big. They say commercial operators prefer large scale plants because the technology is expensive and large operations offer a better return on their investment. The operators will also demand guarantees from the Gloucestershire councils that they'll deliver enough waste to their furnaces glowing 24 hours a day. What people worry about is that a council, faced with a penalty payment for non-delivery might chose to reduce its recycling, rather than leave the incinerator hungry.

So how do the figures stack up?

Gloucestershire is aiming to recycle 70% of its rubbish. This would leave about a hundred kilo-tonnes a year of residual household rubbish for burning. An operator with a plant designed for 175 kilo-tonnes would have to find the extra seventy-five kilo-tonnes from somewhere. At the moment, this could easily come from the county's commercial sector. But what happens if the commercial sector improves its recycling rate or ordinary households exceed their 70% target? Could there come a point where there's so little residual waste left that incineration is not viable and you're left with an expensive white elephant soaking up compensation payments at the tax payers expense. That's the scenario painted by Friends of the Earth.

So how real is this possibility?

The Green Party thinks it's scaremongering. They point out that the five European countries which rely most on incineration are also the five which

recycle the most - the two are not mutually incompatible. However, the Greens are keen to see British incinerators scaled down to a smaller size. They point out that in Denmark the smallest incinerator has a capacity of just 10 kilotonnes a year - that's about the right size for the Forest of Dean. Gloucestershire they reckon would be better off with four or five incinerators, rather than one big one. There's a new burning technology that's well suited to this smaller scale - it's a form of combustion known as pyrolysis which the Greens are keen to promote. If the flow of rubbish ever did slow down, then with four small plants, one could be closed down without bringing the whole system to a grinding halt