

Energy potential from plastics Waste

15% Reduction in Coal Imports With a 20% Reduction of Greenhouse gases

Background

Energy efficiency and the security of energy supply are firmly on the political agenda. Following last year's Commission white paper on energy efficiency, the European Parliament in March adopted a resolution outlining the need to develop legislation addressing the objective of overall energy saving. In its Green Paper on security of supply the Commission emphasised the European Union's long-term strategy to ensure "the uninterrupted physical availability of energy products on the market, at a price which is affordable for all consumers (private and industrial), while respecting environmental concerns and looking towards sustainable development."

In order to achieve this, all potential energy sources should be examined to enable a balanced and sustainable energy policy. A waste material with the high energy value of plastic must be considered within the framework of this policy. The starting point for consideration should be:

- Plastics are almost all derived from oil, a combustible raw material, which is already used to generate power in the EU.
- Plastic recycling is a growing industry and the figures discussed here refer only to that portion of plastic waste cannot be sensibly recycled.
- The diversion of waste with a high calorific value to landfill represents resource inefficiency at a time when efficient resource use is a high priority in the EU.

1) The energy potential from plastic waste :

- Energy recovery from plastic waste can make a major contribution to EU energy production. We estimate that, if all of Europe's plastic waste which is not feasible to recycle were turned to energy, it would be equivalent to at least 17 million tons of coal.
- Energy from waste directly saves fossil fuels and makes an important contribution to the reduction of EU dependency on foreign imports. 17 million tonnes of coal represents 15% of the total EU coal imports and approximately 5% of EU energy needs for power generation. Such a contribution is crucial, particularly with the growing EU dependency on foreign fossil fuel supply, estimated to reach 70 per cent by 2010 in a business-as-usual scenario.

- Emission limits from power generation plants ensure that there is a safe environmental background for the use of plastic waste as an alternative fuel.

2) Reduced global warming potential and improved energy efficiency from energy from waste

Meeting the Kyoto objectives by reducing overall greenhouse gas emissions is one of the priorities of EU environmental policy.

- Energy from plastic waste reduces overall greenhouse gas emissions by more than 20% when compared with the imported coal which it can replace. For the estimated 17 million tons of imported coal, this 20% reduction would mean an equivalent of around 10 Million tons of CO₂ or the equivalent of running over 2 million cars per year.
- Plastics can also be co-incinerated with other combustible products from the waste stream which will give even greater contributions to the reduction of greenhouse gases by the prevention of the emission of methane gas from landfills. Methane has a global warming potential of 30 times that of CO₂. This is why the prevention of waste going to landfill is a key measure to reduce the greenhouse gas emissions.

3) Minimising landfill

At present plastics waste which cannot be realistically recycled represent 8 –9 % of domestic waste. The diversion of this waste stream would alleviate the pressure on domestic landfill sites. If other combustible waste materials which cannot be readily recycled are included, this figure rises to well over 25%

4) Why choose energy from non-recyclable plastic waste?

- It's efficient and can help in the area of climate change
- It represents efficient resource use
- It diverts waste from landfill
- Proven experience of the technology with plastic as an alternative fuel enables immediate use