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PRIME MINISTER

filed at 14/4.

The attached draft response to the Environment Committee's very poor report on toxic waste strikes the right note. Apart from its ill-considered proposal for an Environmental Protection Agency, Sir Hugh Rossi's Committee proposed little of substance that the Government did not already have firmly in hand but couched it in terms that were gratuitously insulting to the Government's record on toxic waste management. The draft response sets out fully the many actions that are in hand as part of the continuing process of improving toxic waste management together with a measured but vigorous rebuttal of the Committee's worst proposals. I would not recommend reading all the way through the response seeing that it contains little that is new, but you might just like to skim through the foreword to get the tone of the response.



D. MORRIS

19 APRIL 1989

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MRMAOJ

ANNEX C

extract from Goldsmith
letter to George Guise of
Feb 6.

Let us take as a given that the survival of the tropical rain forests is of profound and global importance.

General considerations:

- 1) Such forests are located principally in the third world.
- 2) Free market mechanisms are needed to induce the host nations (hereinafter "the host nations") to maintain their forests.
- 3) Initiatives will be rejected if they have a flavour of: imperialism; "yankee domination"; the developed world (who have sacrificed their own environment in the process of industrial development) "pulling up the ladder behind them" and stranding the underdeveloped nations, etc...
- 4) So the developed nations should recognise that the host nations are maintaining a natural and vital resource for the good of all; that, rightly or wrongly, they believe that they are sacrificing development opportunities by protecting these assets; and that they need to be compensated to do so.

General method:

- 1) The world organisations mostly have degenerated into self perpetuating bureaucracies. Their budgets are spread widely; at best they do little good (in my view, they do considerable harm); and are focused principally on the perpetuation of the bureaucracies themselves. The purpose of their organisations needs to be redefined and their budgets laserbeamed onto clear objectives. A principal objective should be the protection of the world's tropical rain forests.

2) From the complex of world organisations, one would be chosen as the vehicle for this task (hereinafter "Forestco"). Its organs of management would include representatives from throughout the world.

3) Forestco would enter into contracts with the host nations whereby the host nations, for an annual payment of predetermined rent, would undertake to protect their forests for the good of all.

There would be a normal monitoring process prior to the payment of annual rent.

4) Payment would be in the form of international debt at par value issued by the host nations.

5) Such debt would be acquired by Forestco through the market or by bilateral transactions with banks and creditors. To avoid escalation of the price of the debt, Forestco could buy forward (for payment on delivery) or buy future call options. In any case, the pool of international debt is growing as a result of accumulating interest. It might be more attractive to the host nations to pay the rent with the interest stream rather than the capital. The interest stream can be detached from the bonds and acquired separately. This would have an immediate positive impact on the cashflow of the host nations.

Advantages:

- 1) Encourage the protection of the tropical rain forests.
- 2) Help float the economies of the host nations off the rocks and reintroduce them into the world economy.
- 3) Relieve economically induced political pressures and animosity against the developed world.

3.

4) Recognise the reality that the debt will never be repaid in full (the market already recognises this obvious fact). But receive something in return.

Note:

For such a plan, a number of powerful and seemingly incompatible forces need to be brought together:

This proposal:

- allows local politicians to be relieved of immediate cashflow problems.
- represents a commercial transaction which could be presented positively to the local electorates.
- allows the international bureaucrats to perpetuate their jobs.
- helps the international bankers (but at market price, so it is no subsidy. It makes the market more liquid).
- obtains the backing of a lobby of growing importance - the environmentalists.

Note on another subject:

It is possible that the UK might wish to privatise properties owned by the Forestry Commission. If so, the buyers should undertake to harvest these forests at a rythm not greater than their sustainable growth. Also they should undertake that they harvest in a way which protects the diversity and quality of the forests. If not, some buyers could "clear cut" the forests for immediate financial gain. This would be tragic for the nation and damaging for the government which in turn would be tragic for the nation.

6/2/89 JMG



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3-WAY CATALYSTS AND LEAN BURN ENGINES

3-way and oxidation catalysts

3-way catalysts control all three major pollutants under stoichiometric air-fuel conditions. Under lean burn conditions (ie excess air) the same 3-way catalyst acts as an oxidation (or 2-way) catalyst controlling CO and HC.

For lean burn engines this means that a 3-way catalyst will control carbon monoxide (CO) and hydrocarbons (HC) under all operating conditions but will only control nitrogen oxides (NOx) when air and fuel are in balance; neither in excess. This is stoichiometric operation. Thus a catalyst can be used to minimise the pollutant emissions of CO, HC and NOx from a lean burn engine.

Catalysts and lean burn engines

This works as follows. A lean burn engine minimises NOx formation and fuel consumption at lower power outputs by burning less fuel. It needs an oxidation catalyst to control unburned HC emissions under these conditions. When power is needed more fuel must be added and the air/fuel ratio moves towards stoichiometric operation. Since the temperature in the engine rises with power output/fuel input more NOx is produced. Under these conditions the catalyst enables the NOx to combine with CO and HC to produce carbon dioxide and water, while the NOx itself is converted to nitrogen. This is 3-way catalyst operation. The same catalyst, without any control mechanism except that designed into the lean burn engine, can therefore be used to control CO, HC and, when needed because more is produced by the engine, NOx.

The new higher speed test

The lean burn engine concept has been designed basically around the present city based driving cycle which has an average speed of 11.9 mph. At these speeds and accelerations lean burn operation is possible all or most of the time. The new European higher speed or extra urban driving cycle covers speeds up to 75 mph and an average speed of 39 mph. This is closer to real driving conditions and lean burn operation will not be possible all the time necessitating a catalyst to control NOx as well as CO and HC.

Small cars

For cars under 1.4 litres we, and others, have demonstrated open-loop (ie not operating with expensive air-fuel ratio control systems) 3-way catalysts capable of meeting the European Parliament's proposed 20g/test CO and 5g/test (HC + NOx) standard. This concept has not yet been fully developed by the motor industry since full 3-way catalyst systems on conventional engines have been preferred for the US market. VW use such a system on the cars less than 1.6 litres that they sell in the UK market with catalysts.

Medium cars

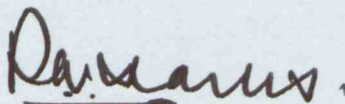
For medium (1.4 to 2 litre) cars we have looked at a 1.6 litre Toyota Carina with an advanced lean burn engine and oxidation/3-way catalyst and a 1.8 litre VW Golf with full 3-way catalyst. While under the city cycle the Toyota shows a fuel economy advantage around 12%, on the higher speed cycle this advantage is lost and the fuel consumption of the 2 cars is identical. We think this demonstrates the need to question the claimed 10% fuel economy advantage of lean burn engines unless it has been demonstrated under real driving conditions.

Large cars

Large cars (over 2 litres) are heavier, generally have power using systems like power steering and sometimes air conditioning and they are expected to perform well. This does not suit lean burn operation since the cars for most of the time need higher power outputs than lean burn can provide. Also it is difficult to create the swirl of the air/fuel mixture needed for lean burn operation in larger cylinders. Mainly for these reasons, motor manufacturers have chosen to use the proven and developed 3-way catalyst technology since this is suited to these engines, fits in well with the fuel injection systems used and gives the power and response that customers want.

Conclusions

- 1 Fitting catalysts does not spoil the fuel efficiency of lean burn (or any other) engine
- 2 Lean burn engines need catalysts to become clean particularly at the higher speeds and loads of the new European test
- 3 3-way catalysts and lean burn engines can be used together although a 3-way catalyst on a conventional engine is the cleanest technology available
- 4 3-way catalyst systems control all pollutants under all driving conditions
- 5 Tests have shown that under real driving conditions the fuel economy advantage of lean burn engines may not be realisable
- 6 Catalysts and lean burn engines together create the opportunity to produce the most fuel efficient engine with minimum environmental impact



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