PRIME MINISTER

You will recall the suggestion at your meeting on the Science Budget that you might make a Statement by way of Parliamentary Answer on the UK's record on acid rain.

I attach a possible draft Question and Answer, prepared by Dr. Nicholson in consultation with the Department of the Environment.

It might be better to defer consideration of a Statement until after a decision has been taken on the Foreign Secretary's proposals for a Summit initiative on environmental pollution.

Agree to wait until then?

I think we could go ahead before that

MF.

DMB

11 May 1984

Q: To ask the Prime Minister whether in view of recent criticism she will make a statement on the UK's record on acid rain.

A: The relationship between emissions from power stations and other combustion plants and environmental damage attributed to acid rain is uncertain. ~~For example~~, scientific evidence now suggests that vehicle emissions and ozone play an important part in the process leading to forest damage.

The Government therefore believes that it is important to develop a better understanding of the scientific basis of what is more correctly termed acid deposition so that cost-effective action can be taken to prevent damage to the environment. For this reason, the CEGB and the NCB have funded a major international study under the auspices of the Royal Society, in collaboration with equivalent learned societies in Norway and Sweden, costing £5m over 5 years.

Even as this research continues, the trend of emissions is strongly down in the UK. Since 1970 there has been a 34 per cent reduction in sulphur dioxide emissions, and whereas in 1950 25 per cent of such emissions in Europe* came from the UK, now the figure is 11 per cent. I therefore do not accept criticism which singles out the UK for blame.

* Excludes USSR

Background Note

The phenomenon known as acid rain, but referred to more accurately as acid deposition (acid mist and dry deposition of particulates are also significant) has become a major environmental issue in Scandinavia (where it is blamed for reductions in fish populations in rivers and lakes) and West Germany (which has become alarmed at the deterioration in its forests). The UK is often singled out for special blame. This is because it emits relatively large amounts of sulphur dioxide and nitrogen oxides from its largely coal-fired power stations and it is argued that the prevailing winds carry these primary pollutants which are then converted into the secondary pollutants - sulphuric acid, nitrogen dioxide and nitric acid - and deposited in Continental Europe, particularly Scandinavia, as acid rain.

Yet the atmospheric chemistry underlying this process, and indeed the local processes whereby acid deposition is implicated in environmental damage are far from clear and are extremely complex. Scientists generally accept there is a relationship between increased acidity in fresh water and the decline of fish stocks, but even here, knowledge is imperfect and there are several intervening variables. Furthermore, there are sources of environmental acidity other than acid rain, and the relative contributions of these various sources is not established. For this reason, the CEGB and the NCB have funded a major international study under the auspices of the Royal Society, in collaboration with equivalent learned societies in Norway and Sweden, costing £5m over 5 years.

In connection with forest damage in Central and Western Europe, it is becoming clear that local pollutants and local conditions are crucial, with vehicle emissions significant as a source of nitrogen oxides and hydrocarbons. It is possible that ozone, formed during photochemical reactions involving nitrogen oxides and hydrocarbons is more directly implicated in forest damage than acid deposition as such. This is especially the case in hot, dry summers as most of Europe has had in the late 70s and early 80s.

/ The UK

The UK is most vulnerable to criticism on the grounds that it has shown reluctance to act to curb power station emissions by retrofit programmes, rather than that it is the major source of pollutants in Europe. The decline in overall UK emissions has been achieved by other industrial plants switching to low sulphur gas and oil but power stations are now correspondingly more significant as sources of sulphur and nitrogen oxides. But the UK has argued that, without understanding the science, there is a risk of undertaking expensive and ineffective remedial action on power stations.

In comparative emissions, the UK is far from the worst offender in Europe. Six other countries export more sulphur emissions than the UK (Italy, FRG, GDR, Poland, Czechoslavakia and Yugoslavia) although UK total emissions are about the same as Italy, West and East Germany, and Poland (see table below).

Monthly sulphur emissions, and exports to other countries

	Total emissions (tonnes)	Emissions to other countries (tonnes)
Czechoslovakia	116,100	70,600
France	145,400	58,000
Germany, East	172,200	109,500
Germany, West	165,400	91,800
Hungary	70,100	46,300
Italy	167,200	119,100
Poland	173,500	90,200
Spain	69,100	17,400
USSR	379,000	20,400
UK	173,000	64,100
Yugoslavia	141,500	69,300

Source: UNECE

Tuesday 22 May 1984

(Answered by the Prime Minister on Tuesday 22 May 1984)

UNSTARRED No. 147 Mr Tom Sackville: To ask the Prime Minister, whether in view of recent criticism she will make a statement on the UK's record on acid rain.

The relationship between emissions from power stations and other combustion plants and environmental damage attributed to acid rain is uncertain. Scientific evidence now suggests that vehicle emissions and ozone play an important part in the process leading to forest damage.

The Government therefore believes that it is important to develop a better understanding of the scientific basis of what is more correctly termed acid deposition so that cost-effective action can be taken to prevent damage to the environment. For this reason, the CEGB and the NCB have funded a major international study under the auspices of the Royal Society, in collaboration with equivalent learned societies in Norway and Sweden, costing £5m over 5 years.

Even as this research continues, the trend of emissions is strongly down in the UK. Since 1970 there has been a 34 per cent reduction in sulphur dioxide emissions, and whereas in 1950 25 per cent of such emissions in Europe* came from the UK, now the figure is 11 per cent. I therefore do not accept criticism which singles out the UK for blame.

* Excludes USSR

Environmental Affairs

MRS PLATMAN
QUESTIONS

c. Dr. Nicholson
Mr. Ingham.

Parliamentary Answer on Acid Rain

The Prime Minister has decided that she would like to place on record the attached statement on acid rain.

Could you please arrange for the question to be tabled, and for the answer to issue as soon as possible.

David Barclay

18 May 1984

DMB 22/5

David
PQ being answered today.
Copy attached at back.
Charlotte 22/5

Mr. Barclay.

No objection.

A. J. C. 15/5.

Department of the Environment
Room A308
Romney House 43 Marsham Street London SW1P 3PY
Telex 22221 Telephone Direct Line 01-212 8004
Switchboard 01-212 3434
GTN 212

Dr Robin Nicholsonn
Room 322
Cabinet Office
70 Whitehall
London Swl

9 May 1984

Dear Robin,

PQ ON ACID RAIN

I have taken the liberty of suggesting some changes to the draft you left with me this morning, and I attach a revision which shortens the main answer and relegates some of the other material to supplementaries. — in case it's helpful!

I have some minor points on the background note. The two paragraphs on the second page contain some inaccuracies and should correctly read as follows:

> The UK is most vulnerable to criticism on the grounds that it has shown reluctance to act to curb power station emissions by retrofit programmes, rather than that it is the major source of these pollutants in Western Europe. The decline in overall UK emissions has been mainly achieved by other industrial plants switching from fuel oil to low sulphur gas, but power stations are now correspondingly more significant as sources of sulphur and nitrogen oxides. But the UK has argued that, without understanding the science, there is a risk of undertaking expensive and ineffective remedial action on power stations.
>
> In terms of deposition in other countries the UK is by no means the worst offender in Europe. Five ~~other~~ countries contribute more to sulphur deposition in other countries than does the UK (FRG, GDR, Poland, Czechoslavakia and Yugoslavia) although UK total emissions are about the same as Italy, West and East Germany, and Poland.

The table does, it is true, appear in our Select Committee evidence; but it is based on a series of modelling exercises carried out under the European monitoring and evaluation programme (EMEP) of the Geneva Convention, and while the figures are no doubt reasonably reliable as an indication of comparative magnitudes, the air of precision which they convey is probably slightly misleading. You may therefore think it wiser

not to inflict the table in its entirety on the Prime Minister, at any rate for the purposes of an oral Answer. If you do, however, the heading to the second column should be "Contribution to Deposition in other Countries"; and in that column the entry for Italy should be 59,100 and not 199,100 as printed. (This is an error in our own paper which we are hastening to correct).

Yours ever

Dan Gruffydd Jones

D GRUFFYDD JONES

CABINET OFFICE
70 WHITEHALL
LONDON SW1A 2AS

233 3535
01-930 5422 ext

9 May 1984

Dear Mr Turnbull,

I enclose the amendments to the background note about I mentioned. I have not attached the proposed layout of the IQ, since I understand a written IQ was intended, and Dan Graybyd-Jones' redraft was based on an oral question.

I am still not to note that the source for Table is UNECE, not OECD.

Yours sincerely,

Elizabeth Lane

O10

CR

Re re-type QaA and first page of background note

Dms 9/5

W.0343

8 May 1984

MR TURNBULL, NO 10

- As requested, I attach a draft PQ on acid rain. A copy of the draft has been sent to DoE and I shall let you have any comments tomorrow.

- I also attach a copy of a minute I have sent to Robin Butler which bears on the subject.

RBN

ROBIN B NICHOLSON
Chief Scientific Adviser

To ask whether in view of recent

Q. ~~Does~~ the Prime Minister ~~agree with the criticism made by Mr Brian Redhead that "the UK leads the world in acid rain"?~~ make a statement on the UK's record on acid rain. she will

~~A~~. I do not. The statement you refer to is misleading, simplistic and quite wrongly singles out the UK for blame.

(A) The relationship between emissions from combustion plants and environmental damage attributed to acid rain is uncertain. For example, scientific evidence now suggests that vehicle emissions and ozone play an important part in the process leading to forest damage.

~~Furthermore,~~ Even as this research continues, ~~the~~ strongly trend of emissions is down in the UK. Since 1970 there has been a 34 per cent reduction in sulphur dioxide emissions, and whereas in 1950 25 per cent of such emissions in Europe* came from the UK, now the figure is 11 per cent.

~~But my~~ The Government therefore believes that it is important to develop a better understanding of the scientific basis of what is more correctly termed acid deposition so that cost-effective action can be taken to prevent damage to the environment. ⊗

Reproduce ⊗ here ↗

* Excludes USSR

Background

The phenomenon known as acid rain, but referred to more accurately as acid deposition (acid mist and dry deposition of particulates are also significant) has become a major environmental issue in Scandinavia (where it is blamed for reductions in fish populations in rivers and lakes) and West Germany (which has become alarmed at the deterioration in its forests). The UK is often singled out for special blame. This is because it emits relatively large amounts of sulphur dioxide and nitrogen oxides from its largely coal-fired power stations and it is argued that the prevailing winds carry these primary pollutants which are then converted into the secondary pollutants - sulphuric acid, nitrogen dioxide and nitric acid - and deposited in Continental Europe, particularly Scandinavia, as acid rain.

Yet the atmospheric chemistry underlying this process, and indeed the local processes whereby acid deposition is implicated in environmental damage are far from clear and are extremely complex. Scientists generally accept there is a relationship between increased acidity in fresh water and the decline of fish stocks, but even here, knowledge is imperfect and there are several intervening variables. For this reason, the CEGB and the NCB have funded a major international study under the auspices of the Royal Society, in collaboration with equivalent learned societies in Norway and Sweden, costing £5m over 5 years.

In connection with forest damage in Central and Western Europe, it is becoming clear that local pollutants and local conditions are crucial, with vehicle emissions significant as a source of nitrogen oxides and hydrocarbons. It is possible that ozone, formed during photochemical reactions involving nitrogen oxides and hydrocarbons is more directly implicated in forest damage than acid deposition as such. This is especially the case in hot, dry summers as most of Europe has had in the late 70s and early 80s.