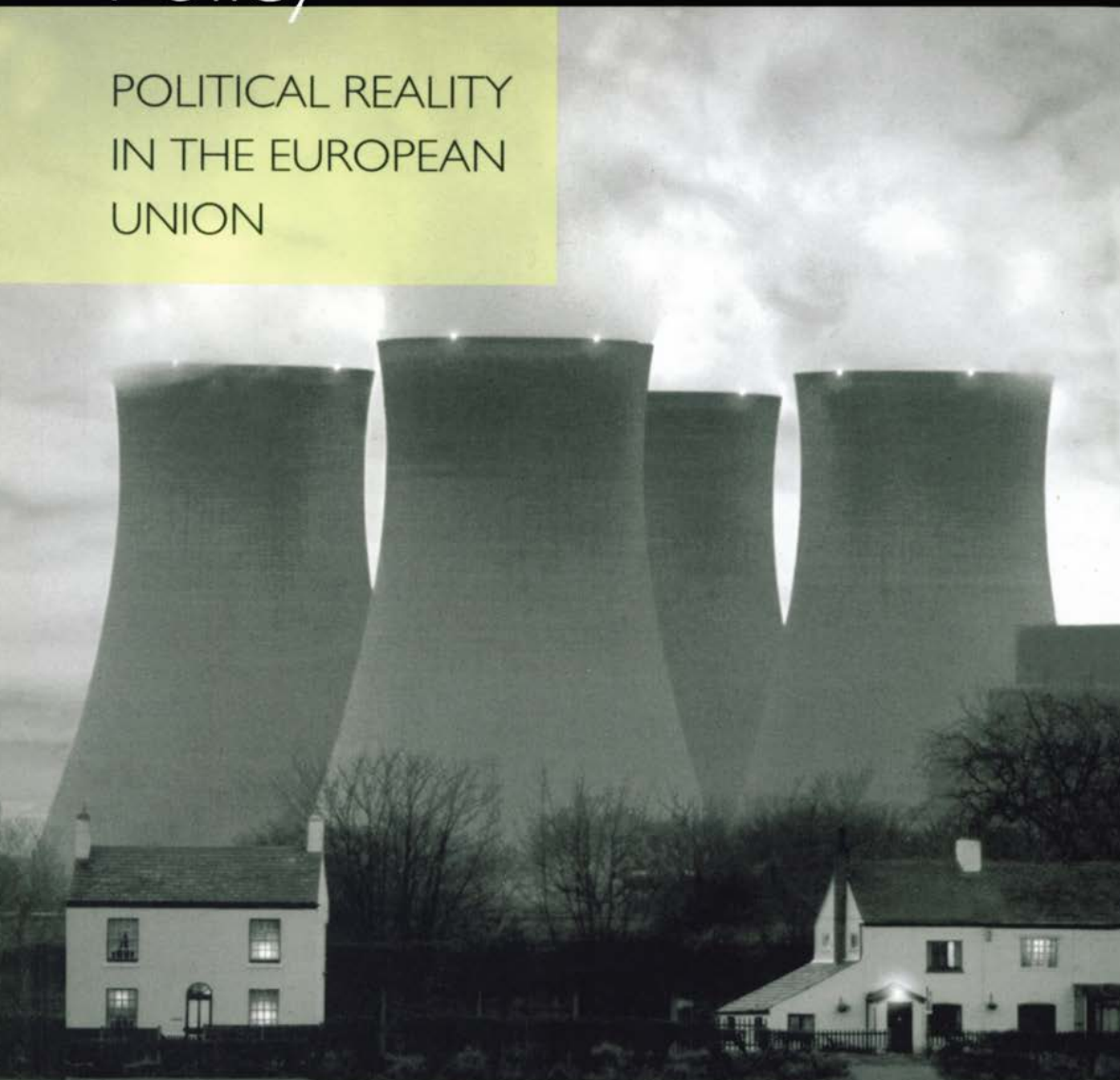


Cases in Climate Change Policy

POLITICAL REALITY
IN THE EUROPEAN
UNION



Edited by

Ute Collier and
Ragnar E Löfstedt

**CASES IN CLIMATE CHANGE POLICY:
POLITICAL REALITY IN
THE EUROPEAN UNION**

To Anneli and the lemurs of Madagascar
May their future be climate-change free

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FOREWORD

Climate change represents one of the most difficult environmental problems with which policy makers have had to grapple. The production of greenhouse gases is deeply embedded in the way in which a modern society operates: in the way we heat our homes, use electric appliances, commute to work and travel during our leisure time. Greenhouse gas emissions also arise from the manufacture of the goods we consume. Climate change is quite unlike other environmental problems which could be addressed by targeting measures on a few large companies making up a sector such as chemicals or electricity supply. Addressing the problem of climate change requires coordinated action by consumers, business, governments and local authorities. Orchestrating this activity within and across nations represents an unprecedented challenge.

The publication of this book is timely. In mid-1996, the Intergovernmental Panel on Climate Change (IPCC) produced its Second Assessment Report, projecting that climate change would take place throughout the 21st century, and beginning to assess what the impacts of these changes would be across the globe. The second IPCC report confirmed what many suspected – that the recurrence of warmer years during the 1980s and 1990s was not simply a statistical aberration but that ‘the balance of evidence suggests a discernible human influence on the global climate’.

At the same time, the developed nations of the world, among which the 15 European Union Member States figure prominently, are preparing to make commitments to constrain emissions of carbon dioxide (CO₂), the main greenhouse gas. The so-called ‘Berlin Mandate’, put in place at the first meeting of the Conference of the Parties to the Framework Convention on Climate Change (FCCC) in April 1995, requires developed countries to begin new talks on a new protocol imposing binding obligations to reduce CO₂ emissions beyond the year 2000.

Getting an agreement under the Berlin Mandate will solve only part of the problem – perhaps the easier part. Implementing policies to reduce greenhouse gas emissions is the major challenge. A number of developed countries, including some which project a ‘green’ image on the international stage, will fail to stabilise CO₂ emissions at their 1990 levels by the year 2000. This ‘soft’ commitment was built into the FCCC itself. The Netherlands, for example, developed a coherent and transparent climate programme which was widely studied by policy makers in other countries.

In 1996 the Netherlands was forced to introduce a short term 'crash' programme for greenhouse gas emissions reductions in order to prevent a planned emissions reduction by the year 2000 turning into an emissions increase.

Climate policy in the European Union and its Member States presents unique difficulties. In one sense, the EU is a microcosm of the global community of nations. The EU is attempting to coordinate the activities of a diverse set of nations in support of a common position. The EU Member States vary, not only in their level of economic development, but also in terms of culture, the priority attached to environmental protection, and the way that natural resources are marshalled to meet energy and transport needs.

Climate policy is being made against the background of other major developments within the EU. For example, the energy sector, a major source of greenhouse gases, is being challenged by the goal of market liberalisation. Electricity and gas utilities, which have until now enjoyed a secure monopoly position, will have to learn how to live in a world where their customers have the freedom to choose alternative suppliers. This has profound implications for the way in which markets, as well as policy makers, will determine patterns of activity, technology choice and hence environmental impacts. The availability and choice of policy levers which can be used to influence greenhouse gas emissions are significantly altered by energy market liberalisation. This difficult issue is tackled squarely in the pages of this book.

EU climate policy during the 1990s has developed in the context of a major political debate about the appropriate relationship between the Union and its members. The principle of subsidiarity – taking decisions as close to the public as possible – was introduced in the Maastricht Treaty. This has reinforced the role of Member States and weakened the capacity of the EU to make policy. The EU has been particularly unsuccessful in forging a common climate policy – partly because the Commission has relied heavily on fiscal measures, notably the infamous carbon/energy tax, concerning which some Member States have jealously guarded their sovereignty.

The difficulties of making climate policy at the EU level are partly those of environmental policy in general. Agreement on any particular measure is determined by a complex interplay between the Commission, the Council of Ministers and the European Parliament. Alongside the formal procedures, a flourishing sector of trade associations, company representatives and lobby groups is locating itself in Brussels in order to monitor – and influence – the development of EU measures. In practice, much of this influence is exercised even before proposals for new measures leave the Commission to be considered by the Council and Parliament. Like Washington DC, Brussels is developing its own policy-making dynamic – but with a distinctly European flavour. Like Washington DC, it is proving a fertile ground for lobbyists and academic observers alike.

Within this chaotic policy-making milieu, forging a European climate policy has proved particularly difficult. Activities which lead to greenhouse gas emissions pervade all aspects of economic and social life. The climate

change policy agenda has necessarily attracted the attention of a wide range of interest groups, many of which are threatened by climate policies. The consequent gridlock has left EU climate policy very much in the hands of the individual Member States – each of which has its own distinct approach and each of which faces its own complex set of challenges.

This is where the value of this book lies. The editors bring their own rich experience to this study of national climate policies. Both are familiar with the challenges of comparing and contrasting national approaches – and have a truly European perspective. The contributions to the book rest on a solid body of empirical research which provides an authoritative account of: what countries have been doing about greenhouse gas emissions; the struggles which took place to get these policies enacted; how climate policy has interacted with other developments; and the challenges and opportunities facing countries as they approach real climate policy commitments under the Berlin Mandate process. It also usefully explores some generic issues in climate policy – such as the link to market liberalisation – which have applicability across national boundaries. If there is to be a truly European dimension to climate policy, it will almost certainly have to take account of these more generic factors.

The 1992 Framework Convention on Climate Change set in train a complex, multi-layered process of policy development. Taking the model of previous international agreements, policy development is likely to stretch out over years, perhaps decades. Progress will almost certainly be much slower than those with a profound concern over climate change would like. This will certainly not be the last book written on the subject of climate policy. But it comes at a pivotal point, as evidence about the reality of climate change firms up and as developed countries begin to measure up to the challenge of implementing serious greenhouse gas reduction measures. This book provides a welcome review of the state-of-the-art at this time.

Jim Skea
Director

Global Environmental Change Programme
UK Economic and Social Research Council

PREFACE AND ACKNOWLEDGEMENTS

This book has its roots in a project entitled 'Climate Change Policies in the European Union', based at the Robert Schuman Centre of the European University Institute in Florence, Italy, for which generous cofunding was provided by the Directorate General for the Environment (DG XI) of the European Commission. The 18-month project under the direction of Professor Yves Mény was coordinated by Ute Collier, and involved an international set of collaborators. The main focus of the project was on the political feasibility of policy action related to climate change. The principle aim was to identify in a systematic fashion what can be broadly defined as political constraints which hinder the definition and the implementation of optimal climate change policies in the European Union (EU).

Work on the project took place between October 1994 and March 1996. It was decided to focus on the seven Member States (of which six are discussed in this book) considered to provide a representative picture of the diverse situations within the 15 nations. They were also to include the EU's largest emitters of CO₂, as well as a look at 'old' and 'new' Member States. Hence, Denmark (which is omitted from the book for space reasons), Germany, France, Italy, Spain, Sweden and the UK were chosen, whose combined CO₂ emissions account for nearly 85 per cent of EU's total. These countries have very different characteristics with respect to fuel use, make up of the electricity sector, energy intensity of the economy and sensibility to environmental problems, which are all factors that can be expected to shape climate change policies.

Some very detailed country case studies resulted from the project work, which hopefully will assist the Commission in its assessment of Member States' climate change policies. Considering the strong interest in the public domain and in academic circles, both in the climate change issues and in EU environmental policy, the project members decided to pursue the publication of an edited volume based on material from the project, as well as some additional background material. Earthscan was a first preference as publisher considering its excellent reputation in the environmental field and its support for this project is greatly appreciated. Ute Collier and Ragnar Löfstedt (one of the project collaborators) took in hand the editorial responsibilities. Publication of this volume was agreed to by the Commission but it

must be stressed that the opinions expressed herein are the sole responsibility of the authors and do not in any way reflect the views of the Commission or Member State governments.

The book would not have been possible without the many people who provided us with references, commented on innumerable drafts and encouraged us to complete it. In particular, we are indebted to Tom Downing of the Environmental Change Unit at Oxford University, Michael Grubb from the Energy and Environment Programme at the Royal Institute of International Affairs, Laura Kelly at ActionAid, Gerald Leach at Stockholm Environment Institute and Evert Vedung at the Department of Government, University of Uppsala, for commenting on earlier versions of several chapters that appear in this book. A large thank you goes to Dean Anderson at the Energy and Environment Programme, Royal Institute of International Affairs, who read the draft in its entirety and provided us with many useful comments and suggestions. We are also grateful to Jim Skea from the Science and Policy Research Unit at the University of Sussex for writing an excellent Foreword. Furthermore, we would like to thank all the interviewees who willingly participated in this study, as well as the authors of the individual case studies who produced brilliant chapters, and yet met the tight deadlines we imposed on them and put up with our criticisms.

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*Ute Collier and Ragnar E Löfstedt,
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ABBREVIATIONS AND ACRONYMS

ABB	Asea Brown Boveri
ADEME	Agence de l'Environnement et de la Maitrise de L'Energie (France)
AGR	Advanced Gas Cooled Reactor
ALTENER	An EU decision concerning renewable energy sources
AOSIS	Alliance of Small Island States
BDI	Bund Deutscher Industrie (association of German industry)
BMU	Bundesministerium für Umwelt (Germany)
CCGTs	Combined Cycle Gas Turbines
CCP	Climate Change Programme (UK)
CDU	Christian Democratic Union Party (Germany)
CEGB	Central Electricity Generating Board
CFCs	Chlorofluorocarbons
CH ₄	Methane
CHP	Combined Heat and Power
CispeI	Confederazione Italiana Servizi Pubblici Enti Locali (Italy)
CO	Carbon monoxide
CO ₂	Carbon dioxide
COGEN	The European Association for the Promotion of Cogeneration
Europe	
COP 1	Conference of the Parties 1 (Berlin 1995)
COP 2	Conference of the Parties 2 (Geneva 1996)
COP 3	Conference of the Parties 3 (Tokyo 1997)
DATAR	Délégation à l'aménagement du territoire et à l'action régionale (France)
DG	Directorate General (EU Commission)
DH	District Heating
DNC	Declared Net Capacity
DSM	Demand Side Management
Dtp	Department of Transport (UK)
EAP	Environmental Action Programme (EU)
ECOFIN	Council of Economic and Finance Ministers (EU)
EdF	Electricité de France
EEO	Energy Efficiency Office (UK)
EFL	Energy Feed Law (Germany)
EFTA	European Free Trade Association
ENEA	National Agency for New Technologies, Energy and the

	Environment (Italy)
ENEL	Ente Nazionale Energia Elettrica (Italy)
ESEMA	Strategy for Energy and Environment (Spain)
EST	Energy Saving Trust (UK)
EU	European Union
FCCC	Framework Convention on Climate Change
FDP	Liberal Party (Germany)
FF	French Franc
FFL	Fossil Fuel Levy (UK)
FGD	Flue Gas Desulphurization
FNC	First National Communication (Italy)
FoE	Friends of the Earth
FRG	Federal Republic of Germany
GDP	Gross Domestic Product
GDR	German Democratic Republic
GWh	Gigawatt hour
GWP	Global Warming Potential
HCFCs	Halogenated Chlorofluorocarbons
HEES	Home Energy Efficiency Scheme (UK)
HFCS	Hydrofluorocarbons
ICE	Catalan Institute for Energy (Spain)
ICEP	Interministerial Committee on Economic Planning (Italy)
ICLEI	International Council for Local Environmental Initiatives
IDAE	Institute for Energy Diversification and Savings (Spain)
IEA	International Energy Agency
IEM	Internal Energy Market
IGC	Intergovernmental Conference
IGCC	Integrated Gasification Combined Cycles
IMA	Interministerial Working Group (Germany)
IPCC	Inter-Governmental Panel on Climate Change
IRP	Integrated Resource Planning
ISES	International Solar Energy Society
ktoe	Thousand tonnes of oil equivalent
kWh	Kilowatt hour
MCCC	Making a Corporate Commitment Campaign (UK)
MINER	Ministry of Industry and Energy (Spain)
MOPTMA	Ministry of Public Works, Transport and the Environment (Spain)
Mt	Million tonnes
MtC	Million tonnes of carbon
Mtce	Million tonnes of coal equivalent
Mtoe	Million tonnes of oil equivalent
MW	Megawatt
MW _e	Megawatts of electricity
MW _{th}	Megawatts of thermal energy
N ₂ O	Nitrous Oxide
NEP	National Energy Plan (Italy)
NFFO	Non-Fossil Fuel Obligation (UK)
NGOs	Non Governmental Organizations

■ Cases in Climate Change Policy

NO ₂	Nitrogen dioxide
NO _x	Nitrogen oxides
NUTEK	Swedish National Board for Industrial and Technical Development
O ₃	Ozone
OECD	Organization for Economic Cooperation and Development
OFFER	Office for Electricity Regulation (UK)
OFGAS	Office of Gas Regulation (UK)
PAEE	Savings and Energy Efficiency Plan (Spain)
PEN	National Energy Plan (Spain)
<i>PEN 91</i>	National Energy Plan 1991–2000 (Spain)
PFBC	Pulverized Fluidized Bed Combustion
PGOU	General Urban Plan (Spain)
PNC	National Climate Programme (Spain)
PV	Photovoltaic
PWR	Pressurized Water Reactor
QMV	Qualified Majority Voting
RCEP	Royal Commission on Environmental Pollution (UK)
R&D	Research and Development
RECs	Regional Electricity Companies (UK)
SAVE	Specific Actions for Vigorous Energy Efficiency
SEA	Single European Act
SEK	Swedish Crown
SF ₆	Sulphurhexafluoride
SEMAV	Secretary of State for Environment and Housing (Spain)
SNCC	Swedish National Committee on Climate Change
SO ₂	Sulphur dioxide
SPD	Social Democratic Party (Germany)
SRO	Scottish Renewables Order (UK)
Swedish EPA	Swedish Environmental Protection Agency
TEU	Treaty on European Union
TGV	<i>Train à grande vitesse</i> (high speed train)
THERMIE	EU energy technology support programme
toe	Tonnes of oil equivalent
TPA	Third Party Access
TPES	Total Primary Energy Supply
TWh	Terrawatt hour
UBA	Umweltbundesamt (Federal Environmental Office) (Germany)
UNCED	United Nations Conference on Environment and Development
VAT	Value Added Tax
VDEW	Association of electricity companies (Germany)
VEAB	Växjö Energy Company (Sweden)
VOCs	Volatile Organic Compounds
VROM	Netherlands Ministry of Housing, Physical Planning and Environment
WMO	World Meteorological Organization

Chapter 1

THE CLIMATE CHANGE CHALLENGE

Ute Collier and Ragnar E Löfstedt

INTRODUCTION

The threat of large scale changes to the earth's climate over the 21st century has become one of the most salient issues in environmental policy during the 1990s. The main culprit is the fast increasing level of carbon dioxide (CO₂) emissions resulting from fossil fuel use. Energy production and use based on fossil fuels is an essential constituent of economic activities in the industrialized world and there are no easy recipes for emission reductions. Reduction strategies will have to be based on both technological and behavioural changes, with modifications to energy, transport and general economic policies. Climate change thus presents the clearest challenge yet for the integration of environmental concerns into other policy areas, as is advocated by the concept of sustainable development (see below). At the same time, the existence of so-called 'no regrets' policies (those which have no costs and sometimes even benefits for economy or society) has been confirmed by a number of studies, many of which point to feasible opportunities for achieving both environmental and economic objectives, for example through the vigorous pursuit of energy efficiency.

Despite great uncertainty about the exact scale and effects of climate change and the obvious challenge this issue poses, policy makers have committed themselves to action by adopting the Framework Convention on Climate Change (FCCC). This requires countries to draw up emission reduction programmes and currently negotiations are under way to find common agreement between signatory nations on specific emission reduction targets by 1997. The onus for emission reductions lies primarily on the industrialized countries, which are responsible for the greater part of past emissions. Currently, the US, Eastern Europe (including ex-USSR) and Western Europe together account for over half of global emissions (World Resources Institute, 1996), with per capita emissions particularly high in the US, where rates are nearly five times the global average. In the future, it is expected that China and India will quickly advance to the major emitter league,

although it will take some time for their per capita emissions to equal those of the developed world. While the US is by far the largest emitter (25 per cent of CO₂ emissions), the 15 Member States of the European Union (EU) together are also responsible for a large proportion of emissions (almost 15 per cent), with per capita emissions well above the global average. Furthermore, the EU presents the only supranational level of policy making at which legal enforcement is possible, thus, at least in principle, ensuring the fulfilment of the environmental objectives agreed. As such, the setting of emission reduction targets and strategies at the EU level can also play an important role in setting a global example and brokering international agreements.

The EU has officially recognized its global responsibility in this area and already by 1990 had set itself a target to stabilize CO₂ emissions by the year 2000, thereby stressing its global leadership role. However, progress with this target and the implementation of a joint strategy has been limited (see Chapter 4). Effectively, the example of the EU epitomizes the problems of finding a global solution to the climate change problem. Per capita emissions vary considerably between countries, as do the opportunities for emission reductions. Southern European countries (in particular Spain and Greece) have pushed for exemptions as they bear much less responsibility for past emissions than do Northern European countries, especially the large emitters, Germany and the UK. Furthermore, there are also some EU specific problems in that, while environmental policy increasingly has acquired an EU dimension over the past 20 years, energy and transport policies have essentially remained in the national domain. Member States, particularly France and the UK, are jealously guarding their national sovereignty in these areas and have thus hampered progress in the climate change area. Furthermore, in recent years, in particular in view of the subsidiarity debate, doubts have been raised about the appropriateness of EU level action in this and other environmental policy areas.

The heterogeneous nature of emission characteristics and the potential for abatement, indicate that climate protection has to be a multilevel policy, with a supranational framework set at the global and EU level and sufficient flexibility for action at national, regional and local levels. Furthermore, the pervasive nature of emissions requires action in a variety of areas to minimize policy tensions and employ a broad range of policy instruments. These requirements imply the need for policy coordination and policy coherence between different levels of policy making, as well as between different policy areas.

The aim of this book is to examine climate change policy making in the EU in some detail, to identify complexities, constraints and opportunities, as well as to highlight the interaction between technological, economic and political factors. The main emphasis is on the presentation of detailed case studies of six EU Member States, which together account for more than three quarters of CO₂ emissions in the EU. Both national and local level activities are examined, with particular strengths and weaknesses being identified. Conclusions are drawn as to what can be learnt from diverse national and

local experiences, and what role the EU might play in the future development of climate change strategies. This volume should be of interest to those working specifically in the area of climate change policy, as well as those concerned with the study of European integration and the interaction of policy making at different levels of governance. As such, this volume has a dual purpose as a study of responses to the climate change issue and as a case study of EU environmental policy making.

The remainder of this introductory chapter covers the essential background to the climate change issue, examining some of the available scientific evidence, the international response to the problem and the specific challenges presented to EU policy making in this area.

THE THREAT OF CLIMATE CHANGE

There are a number of so-called greenhouse gases in the earth's atmosphere which influence its climate. The most important ones are carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O), but chlorofluorocarbons (CFCs) and halogenated CFCs (HCFCs) also play a role. The radiative forcing (the way in which these gases influence atmospheric processes) and persistence in the atmosphere of these gases vary, so scientists have developed indices to ensure comparability. According to these indices, CO_2 is the most important gas, accounting for 64 per cent of the total radiative forcing of all greenhouse gases, followed by CH_4 (19 per cent), N_2O (5.7 per cent) and then a number of other greenhouse gases (IPCC, 1996a). However, there are substantial uncertainties associated with the measurement greenhouse gases other than CO_2 , in particular CH_4 .

Globally, 87 per cent of the CO_2 emissions originate from industrial activities, in particular fossil fuel combustion, with the remaining 13 per cent due to deforestation (World Resources Institute, 1996). In the industrialized world, over 90 per cent of CO_2 emissions are due to energy production and use, with the main culprits being electricity generation, industrial and domestic energy use and transport related energy consumption (OECD, 1994). The reduction of CO_2 emissions has thus been the focus of policy responses to the issue, which is reflected in the CO_2 focus of this book. A proportion of CH_4 emissions is also energy related (leakages from coal mining and gas pipelines, flaring of natural gas at oil fields), with the rest being from various agricultural activities (rice paddies, enteric fermentation by livestock). N_2O emissions result mainly from various industrial processes.

Measurements show that the atmospheric concentrations of CO_2 and the other trace gases have undergone large increases since pre-industrial times. This has led to an enhancement of the naturally occurring greenhouse effect (whereby gases in the atmosphere prevent a proportion of the heat from the sun being re-radiated from the planet back into space), warming the surface and producing other changes of climate (IPCC, 1996a). These changes are expected to intensify and could potentially have serious consequences for humanity and the political stability of the world as low lying

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countries flood, cultivation patterns shift and large areas suffer from desertification. However, because of the complexity of atmospheric science, with a multitude of possible feedback mechanisms, there is much uncertainty as to the exact nature of these changes.

Most of the world's eminent climate scientists are collaborating under the auspices of the Inter-Governmental Panel on Climate Change (IPCC), which was set up in 1988 by the United Nations to provide scientific and policy advice in preparation for a climate convention. Experts are nominated by governments to participate in the IPCC's three working groups, to produce a synthesis of the state of knowledge in the following areas:

- Working Group I: The science of climate change.
- Working Group II: Impacts, adaptation and mitigation.
- Working Group III: Economic and social dimensions.

Since the late 1980s, substantial effort and financial resources have been spent on climate change research and modelling, both in the natural and the social sciences, and considerable progress has been made in the understanding of climate change. Many of the initial projections for temperature and sea level rises have been scaled down but they are still expected to be serious enough to warrant abatement policies. In its second assessment report in 1995, the IPCC for the first time made a cautious link between the climate extremes of recent years and theories about climate change. While stressing that there are still many uncertainties, the summary of the second report for policy makers claims that 'the balance of evidence suggests a discernible human influence on global climate' (IPCC, 1996a).

Although based on a consensus, this finding has since been contested. It has been suggested that the final version of the IPCC 1995 report lacks many of the references to uncertainties made in the draft report and thus skews the assessment towards sounding much more definite about the occurrence of climate change (Energy Economist, 1996). However, Brack and Grubb (1996) argue that the final version still remains opaque about the degree of confidence to be attached to human attribution. Furthermore, both government representatives and key scientists are united in support of the version published. In general, it must be stressed that all of the IPCC agree with the IPCC conclusions. Those who have been most vocal in their criticism have been discredited through the large sums of 'research money' obtained from coal and oil companies (Ozone Action, 1996).

Based on current emission trends, the IPCC 'best estimate' models project an increase in global mean surface air temperature of about 2°C by 2100, which would be an average rate of warming greater than any seen in the past 10,000 years. As a result of the accompanying thermal expansion of the oceans and melting of glaciers and ice sheets, sea levels are expected to rise by around 50 centimetres in the same time period. Other projected features include increased precipitation and soil moisture in high latitudes during winter, a greater frequency of extremely hot days and more extreme rainfall events (IPCC, 1996a).