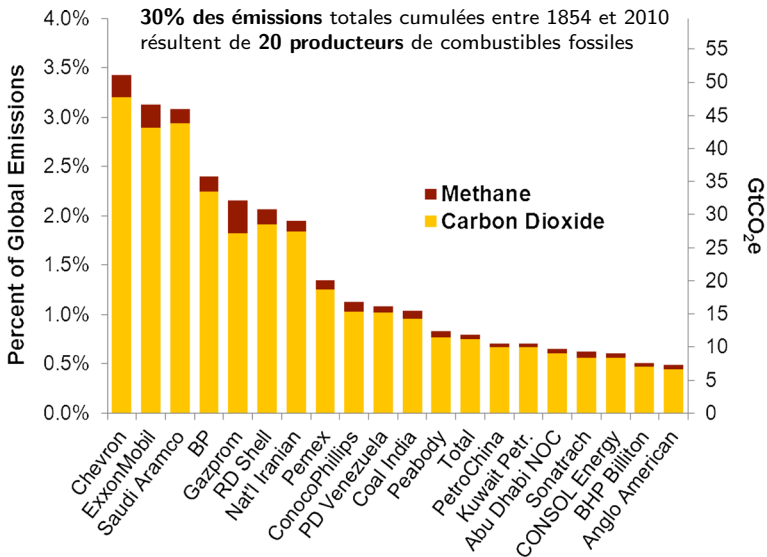
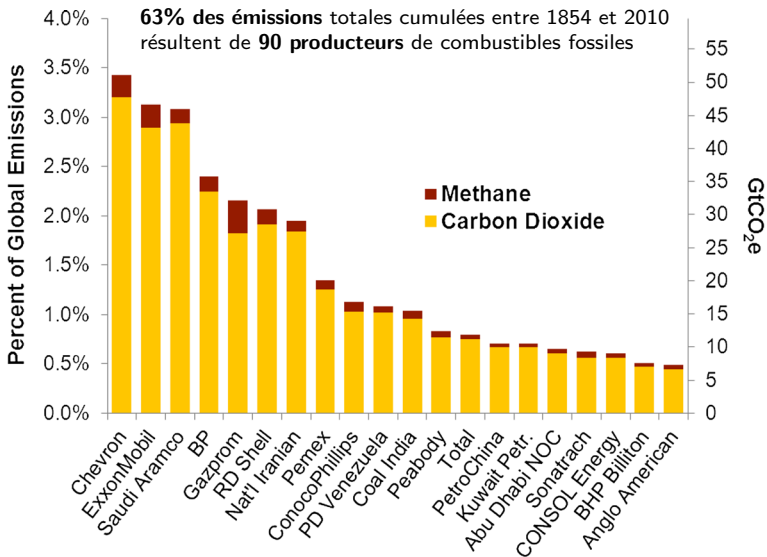


## Une responsabilité historique majeure



## Une responsabilité historique majeure



# L'industrie du pétrole savait

Perhaps the most interesting effect concerning carbon in trees which we have thus far observed is a marked and fairly steady increase in the  $C^{12}/C^{13}$  ratio with time. Since 1840 the ratio has clearly increased markedly. This effect can be explained on the basis of a changing carbon dioxide concentration in the atmosphere resulting from industrialization and the consequent burning of large quantities of coal and petroleum. If this explanation were correct, the carbon dioxide content of the atmosphere today would be about 5% greater than it was a century ago.

**Fig. 1** | Excerpt of research proposal to the API from Harrison Brown and colleagues in 1954. The proposal informed the API that fossil fuels had caused atmospheric CO<sub>2</sub> levels to rise by about 5% over the last 100 years.



**American Petroleum Institute** : the country's largest oil trade association whose member companies include BP, Chevron, ConocoPhillips, ExxonMobil and Shell

## L'industrie du pétrole savait

This report unquestionably will fan emotions, raise fears, and bring demands for action. The substance of the report is that there is still time to save the world's peoples from the catastrophic consequence of pollution, but time is running out.

One of the most important predictions of the report is that carbon dioxide is being added to the earth's atmosphere by the burning of coal, oil, and natural gas at such a rate that by the year 2000 the heat balance will be so modified as possibly to cause marked changes in climate beyond local or even national efforts. The report further states, and I quote: ". . . the pollution from internal combustion engines is so serious, and is growing so fast, that an alternative nonpolluting means of powering automobiles, buses, and trucks is likely to become a national necessity."

**Fig. 2 |** Excerpt of address given by API President Frank Ikard at the organization's annual meeting in 1965. Ikard informed the API's membership that the US President's Science Advisory Committee had predicted that fossil fuels would cause significant global warming by the end of the century.

# L'industrie du pétrole savait

## EXXON RESEARCH AND ENGINEERING COMPANY

P.O. BOX 101, FLORHAM PARK, NEW JERSEY 07932

M. B. GLASER  
Manager  
Environmental Affairs Programs

Cable: ENGREXXON, N.Y.

November 12, 1982

CO<sub>2</sub> "Greenhouse" Effect

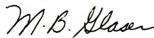
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TO: See Distribution List Attached

Attached for your information and guidance is briefing material on the CO<sub>2</sub> "Greenhouse" Effect which is receiving increased attention in both the scientific and popular press as an emerging environmental issue. A brief summary is provided along with a more detailed technical review prepared by CPPD.

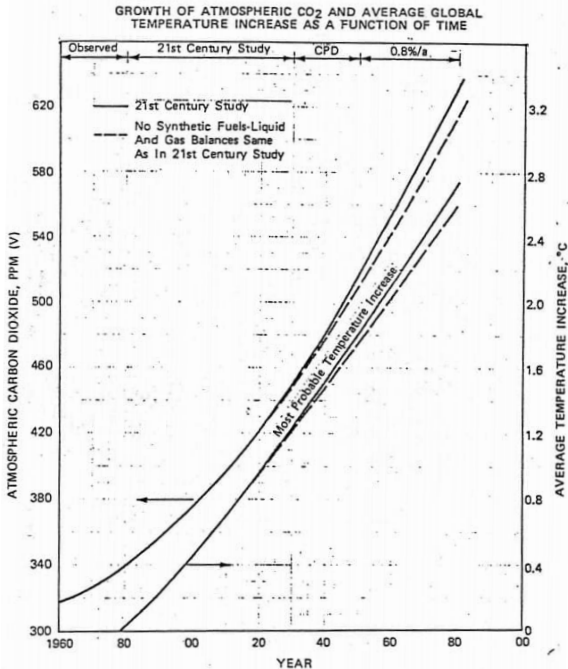
The material has been given wide circulation to Exxon management and is intended to familiarize Exxon personnel with the subject. It may be used as a basis for discussing the issue with outsiders as may be appropriate. However, it should be restricted to Exxon personnel and not distributed externally.

Very truly yours,

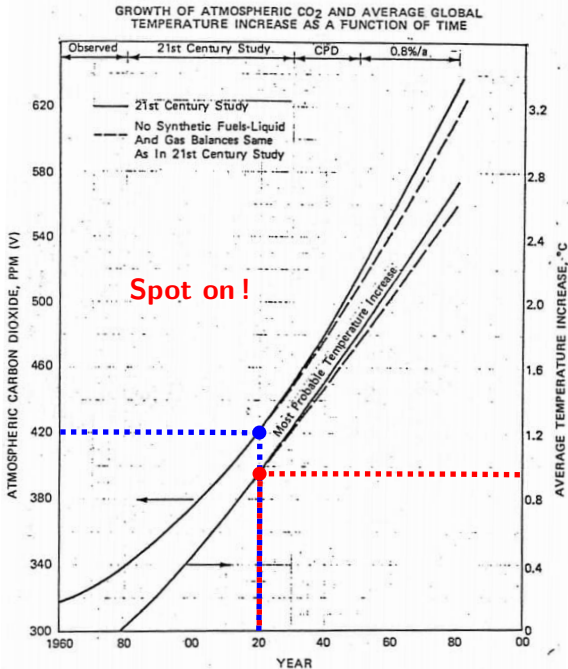


M. B. GLASER

1982 Exxon internal  
briefing document



## 1982 Exxon internal briefing document



# L'industrie du pétrole savait

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## THE GREENHOUSE EFFECT

### Greenhouse effect working group

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### Shell Internationale Petroleum Maatschappij B.V.

Health, Safety and Environment Division

Environmental Affairs

The Hague

April 1986 (completion of the study)

May 1988 (date of issue in this format)

Prepared for SECC

(Shell Environmental Conservation Committee)



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## SUMMARY

Man-made carbon dioxide, released into and accumulated in the atmosphere, is believed to warm the earth through the so-called greenhouse effect. The gas acts like the transparent walls of a greenhouse and traps heat in the atmosphere that would normally be radiated back into space. Mainly due to fossil fuel burning and deforestation, the atmospheric CO<sub>2</sub> concentration has increased some 15% in the present century to a level of about 340 ppm. If this trend continues, the concentration will be doubled by the third quarter of the next century. The most sophisticated geophysical computer models predict that such a doubling could increase the global mean temperature by 1.3-3.3°C. The release of other (trace) gases, notably chlorofluorocarbons, methane, ozone and nitrous oxide, which have the same effect, may amplify the warming by predicted factors ranging from 1.5 to 3.5°C.

Mathematical models of the earth's climate indicate that if this warming occurs then it could create significant changes in sea level, ocean currents, precipitation patterns, regional temperature and weather. These changes could be larger than any that have occurred over the last 12,000 years. Such relatively fast and dramatic changes would impact on the human environment, future living standards and food supplies, and could have major social, economic and political consequences.

There is reasonable scientific agreement that increased levels of greenhouse gases would cause a global warming. However, there is no consensus about the degree of warming and no very good understanding what the specific effects of warming might be. But as long as man continues to release greenhouse gases into the atmosphere, participation in such a global "experiment" is guaranteed. Many scientists believe that a real increase in the global temperature will be detectable towards the end of this century or early next century. In the meanwhile, greater sophistication both in modelling and monitoring will improve the understanding and likely outcomes. However, by the time the global warming becomes detectable it could be too late to take effective countermeasures to reduce the effects or even to stabilise the situation.

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into consideration as well as coupled perturbations due to chemical-radiative interactions (see also section 2.2.2.). The simulation indicates that by 2030 the effects of the trace gases will amplify the CO<sub>2</sub> surface warming by a factor ranging from 1.5 to 3.5 (see Fig. 10).

However, the warming is not the entire story; all GCM's show an increase in the intensity of the global hydrological cycle. If the planet is warmer more moisture will evaporate from the oceans, resulting in a increase of the atmospheric water concentration. The water vapour will also act as a greenhouse gas. In addition, cloud cover might change, as well as sea ice and snow cover, all producing either an amplification or a reduction of the original effects (positive or negative "feedbacks"). Although the process of CO<sub>2</sub>-induced warming is reasonably well understood and some of the gross features of the likely climatic change are reasonably well established qualitatively, the likely regional effects cannot be modelled with great confidence at the present time. The impact of the expected climatic change predicted by these models would be large at a doubled atmospheric CO<sub>2</sub> concentration, even larger than any since the end of the last ice age about 12,000 years ago (see also Appendix 8):

- precipitable water content of the atmosphere would increase by 5-15%, the precipitation rate being increased particularly at higher latitudes of both hemispheres,
- sea-ice cover of the Arctic would be reduced to a seasonal ice cover,
- snow cover would change dependent on latitude, though extent is difficult to predict,
- ice-cap mass balance change: a warming of 3°C would induce a 60-70 cm rise of the global sea level, about half of which would be due to ablation of the Greenland and Antarctic land ice, the rest to thermal expansion of the ocean; a possible subsequent disintegration of the West Antarctic Ice Sheet would result in a worldwide rise in sea level of 5-6 m,
- rising sea surface temperature would be highly regional, and
- reduced evapo-transpiration of plants would make more water available as runoff and would tend to offset the effects of any CO<sub>2</sub>-induced reductions in precipitation or enhance the effects of precipitation increases.

# L'industrie du pétrole savait

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following outline of possibilities is therefore incomplete and speculative, but can be a basis for further consideration and study.

## 1. Rise in sea level

- More than 30% of the world's population live within a 50-kilometre area adjoining oceans and seas, some even below sea level. Large low-lying areas could be inundated (e.g. Bangladesh) and might have to be abandoned or protected effectively.
- Shallow seas, lagoons, bays and estuaries characterised by extensive tidal flats could become permanently inundated. Loss of these habitats would mean a loss of extremely highly productive and diverse areas, which serve as a nursery for juveniles of all kinds of animal species and which are rich in food for fish. Effects on natural resources dependent on these systems, might therefore be dramatic (e.g. shellfish culture and fishing, seaweed harvesting, some commercially important fish).
- There might be a shift in distribution of amenities, and as a consequence local loss of income, though at other places new sources of revenue might emerge.

## 2. Rise in sea temperature

- Survival and growth of marine species may increase in general, though not in stratified subtropical waters. However, shifts in ranges and migration patterns could result in local losses of food sources and revenues, and could require operation in other (more distant) fishing grounds.

## 3. Acidification of seawater

- Dissolution of  $\text{CaCO}_3$  increases with a decreasing pH. Particularly in shallow coastal areas, characterised by high concentration of respiratory  $\text{CO}_2$  and a low pH, dissolution of carbonate materials (shells, corals and sediment) could be quite rapid and result in damage of natural resources and of natural protection of shorelines, and disappearance of complete coral islands.

# Les marchants de doute

## Early warnings and emerging accountability: Total's responses to global warming, 1971–2021

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### A B S T R A C T

Building upon recent work on other major fossil fuel companies, we report new archival research and primary source interviews describing how Total responded to evolving climate science and policy in the last 50 years. We show that Total personnel received warnings of the potential for catastrophic global warming from its products by 1971, became more fully informed of the issue in the 1980s, began promoting doubt regarding the scientific basis for global warming by the late 1980s, and ultimately settled on a position in the late 1990s of publicly accepting climate science while promoting policy delay or policies peripheral to fossil fuel control. Additionally, we find that Exxon, through the International Petroleum Industry Environmental Conservation Association (IPIECA), coordinated an international campaign to dispute climate science and weaken international climate policy, beginning in the 1980s. This represents one of the first longitudinal studies of a major fossil fuel company's responses to global warming to the present, describing historical stages of awareness, preparation, denial, and delay.

# Une désinformation stratégique

## The Fake

Conduct counterfeit science and try to pass it off as legitimate research

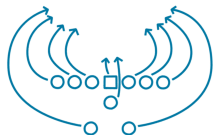
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## The Blitz

Harass scientists who speak out with results or views inconvenient for industry

2



## The Diversion

Manufacture uncertainty about science where little or none exists

3



## The Screen

Buy credibility through alliances with academia or professional societies

4



## The Fix

Manipulate government officials or processes to inappropriately influence policy

5



# Une désinformation stratégisée

FIGURE 4. The American Petroleum Institute's 1998 Memo Presents a Roadmap for Climate Deception

measurement will be taken at one or more as yet to be determined intervals as the plan is implemented.

## **Victory Will Be Achieved When**

- Average citizens "understand" (recognize) uncertainties in climate science; recognition of uncertainties becomes part of the "conventional wisdom"
- Media "understands" (recognizes) uncertainties in climate science.
- Media coverage reflects balance on climate science and recognition of the validity of viewpoints that challenge the current "conventional wisdom"
- Industry senior leadership understands uncertainties in climate science, making them stronger ambassadors to those who shape climate policy
- Those promoting the Kyoto treaty on the basis of extant science appear to be out of touch with reality.

## **Current Reality**

Unless "climate change" becomes a non-issue, meaning that the Kyoto proposal is defeated and there are no further initiatives to thwart the threat of climate change, there may be no moment when we can declare victory for our efforts. It will be necessary to establish measurements for the science effort to track progress toward achieving the goal and strategic success.

# Une désinformation stratégisée

FIGURE 7. Internal Coal 1991 Memo Reveals Strategies to Undermine Climate Science

## Strategies

1. Reposition global warming as theory (not fact).
2. Target print and radio media for maximum effectiveness.

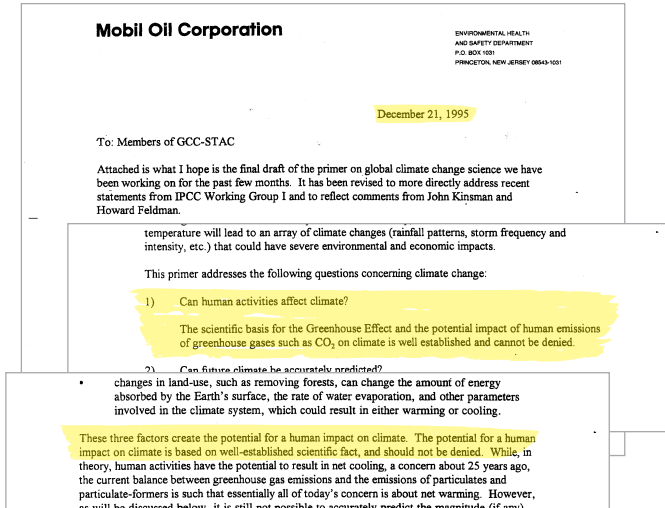
to see its personal value in the process and they are to become seriously engaged and committed.

More specifically, the results of this study point toward two possible target audiences. One possible target audience includes those who are most receptive to messages describing the motivations and vested interests of people currently making pronouncements on global warming—for example, the statement that some members of the media scare the public about global warming to increase their audience and their influence. People who respond most favorably to such statements are older, less-educated males from larger households, who are not typically active information-seekers, and are not likely to be “green” consumers. Members of this group are skeptical about global warming, predisposed to favor the ICE agenda, and likely to be even more supportive of that agenda following exposure to new information. They are not, however, accustomed to taking political action. They are good targets for radio advertisements.

Another possible target segment is younger, lower-income women. These women are more receptive than other audience segments to factual information concerning the evidence for global warming. They are likely to be “green” consumers, to believe the earth is warming, and to think the problem is serious. However, they are also likely to soften their support for federal legislation after hearing new information on global warming. These women are good targets for

# Une désinformation stratégisée

FIGURE 9. Fossil Fuel Companies' Own Scientists Warned About the Reality of Climate Science





# État des lieux de la désinformation

TABLE 1. 2018 Climate Accountability Scorecard

Climate Accountability Metrics	Arch Coal	BP	Chevron	Conoco-Phillips	CONSOL Energy	Exxon-Mobil	Peabody Energy	Royal Dutch Shell
Area 1: Renouncing Disinformation on Climate Science and Policy								
Consistently accurate public statements on climate science and the consequent need for swift and deep reductions in emissions from the burning of fossil fuels	-2 ▼	1	-2 ▼	-2 ▼	-1	-2	-1 ▼	2
Affiliations with trade associations and other industry groups that spread climate science disinformation and/or block climate action	-3	-7 ▼	-8	-6	-1 ▲	-6 ▲	-7 ▼	-5
Policy, governance systems, and oversight mechanisms to prevent disinformation	-1	-1	-1	-1	-1	-1	-1	-1
Support for climate-related shareholder resolutions	0	0 ▼	-2	-1 ▲	-1	-2	0	-1 ▼
Area Scores	Poor	Poor	Egregious	Egregious ▼	Poor	Egregious	Poor	Poor ▼

# État des lieux de la désinformation

TABLE 3. Affiliations with Trade Associations and Industry Groups That Spread Disinformation about Climate Science and/or Seek to Block Climate Action

Trade Associate or Industry Group	Arch Coal	BP	Chevron	Conoco-Phillips	CONSOL Energy	Exxon-Mobil	Peabody Energy	Royal Dutch Shell
American Coalition for Clean Coal Electricity (ACCCE)	1	N/A	N/A	N/A	1	N/A	-1	N/A
American Legislative Exchange Council (ALEC)	0	1	-2	1	0	1	-2	2
American Petroleum Institute (API)	N/A	-2	-2	-2	N/A	-2	N/A	-2
National Association of Manufacturers (NAM)	-2	-2	-1	-2	0	-2	0	-2
National Mining Association (NMA)	-2	N/A	N/A	N/A	-2	N/A	-2	N/A
US Chamber of Commerce (US Chamber)	0	-2	-1	-2	0	-1	-2	-2
Western States Petroleum Association (WSPA)	N/A	-2	-2	-1	N/A	-2	N/A	-1
<b>Aggregate Affiliations Score</b>	<b>Poor</b>	<b>Egregious</b>	<b>Egregious</b>	<b>Poor</b>	<b>Fair</b>	<b>Poor</b>	<b>Egregious</b>	<b>Poor</b>

All eight companies maintain membership—and, in many cases, have leadership positions—in trade associations and other industry-affiliated groups involved in climate disinformation. The most significant change from 2016 was that ExxonMobil left ALEC in 2018, leaving Chevron and Peabody Energy as the only companies in our sample still affiliated with the group.