

**INTERNATIONAL FEDERATION  
OF INDUSTRIAL ENERGY CONSUMERS**



**IFIEC World**

# **Effective Climate Change Policies**

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**INTERNATIONAL FEDERATION  
OF INDUSTRIAL ENERGY CONSUMERS**



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**Industrial energy consumers from around the world support:**

- **the widest adoption of the best existing technology;**
- **the research, development and use of new technologies;**
- **policies that reduce GHG emissions across all actors;**
- **action globally involving all countries;**
- **cost effective and coherent energy programmes.**

***About IFIEC WORLD***

***The International Federation of Industrial Energy Consumers represents companies in energy intensive industries for which the cost and availability of energy and power are significant factors affecting their ability to compete in world markets. IFIEC is worldwide in scope, with non-governmental organisation recognition at the United Nations and has affiliated federations in Europe, North and South America.***

## Summary

IFIEC World believes that the climate change debate is fundamentally important and policy selection raises long term environmental, economic, trade and lifestyle issues. Environmental protection and economic growth can be achieved without loss of competitiveness provided that it is recognised that:

- the role of the UN is to set a worldwide framework for action;
- each party to the Convention must then adopt the method that best suits its culture, policies, practical experience and existing arrangements to address this issue;
- requirements must apply equitably to both developed and developing countries;
- measures must be over the long term;
- targets must be reasonable, realistic and based on greenhouse gas intensity;
- technology ultimately is the only answer. Research is needed into new energy efficient technologies and techniques with adequate tools for appropriate transfer between nations;
- maintaining economic growth is essential to all countries;
- energy producers can pass the higher cost of energy and permits on to consumers. This risks the competitiveness of industrial energy consumers, who face international competition and will not be able to pass on the increased costs;
- the system must ensure that those that have previously invested in energy efficiency will not be disadvantaged;
- policies must not redirect capital in energy intensive industries away from development of newer, more efficient technologies that are the long term solution;
- policy is directed toward GHG reductions in all sectors, including transportation, commercial and residential, and not just the industrial sector;
- sector specific policies should be considered, as one approach does not fit all;
- the emerging global carbon market must ensure a global level playing field and link with business practice through such as a benchmark programme.

**IFIEC World acknowledges with thanks the data published by the International Energy Agency**

## Effective Climate Change Policies

1. IFIEC World represents companies in energy consuming industries for which the cost and availability of energy and power are significant factors affecting their ability to compete in world markets.
2. If GHG (greenhouse gas emissions) are to be controlled without materially damaging the world economy, whilst allowing improvement in quality of life globally, then there are five central needs:
  - 2.1. the widest adoption of the best existing technology;
  - 2.2. the research and development and use of new technologies;
  - 2.3. policies that reduce GHG emissions across all actors;
  - 2.4. action globally involving all countries;
  - 2.5. cost effective and coherent energy programmes.

### Introduction

3. IFIEC believes in Sustainable Development and that environmental protection, economic growth and social protection can be linked without loss of either competitiveness or overall quality of life standards. This position has been maintained over almost two decades of international debate and the need for an international agreement through which this can be achieved is even more necessary now than it was then. Inevitably, climate change policy that is linked to GHG emissions from fossil fuel combustion raises long term environmental, economic, trade and lifestyle issues. Broad based strategies that encourage individual countries to deal with the problem using their established cultures, knowledge and experience will be the more successful path to reducing emissions.

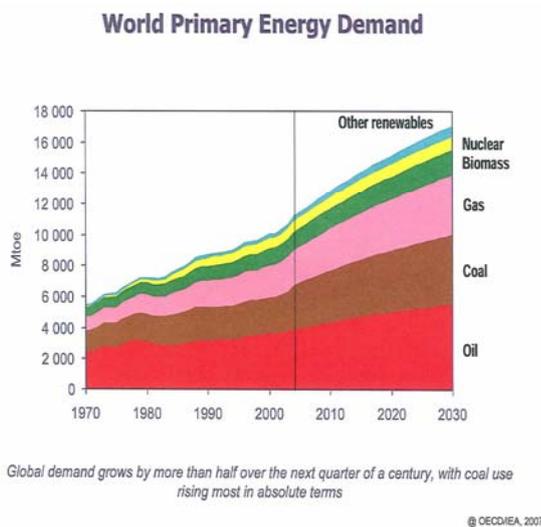
### The Challenge

4. Industrial energy consumers have a consistent record of reducing carbon emissions per unit of output. This has mainly been achieved by continuing long term investment in energy efficiency as a means to remain competitive in domestic and global markets. However, present technology will not provide the dramatic reductions in GHG emissions being proposed after 2012. **New initiatives** will be needed globally and there are key reasons for not delaying further:
  - 4.1. the timescale to develop major new and proven technology can be 7-15 years and an adequate return on that investment can take up to 20 years;
  - 4.2. research and development expenditure across OECD countries has been reducing as a percentage of turnover in recent years and this trend needs to be reversed;
  - 4.3. greenhouse gas growth is greater in newly industrialising and developing countries. It is essential that they can access energy efficient processes at an early stage.
5. Since the UNFCCC process began, many new drivers for change have become policy. Apart from the Kyoto Protocol, in itself the result of a long and difficult negotiation, the quest for reduced carbon economies has brought new policy initiatives. In particular these have promoted energy from renewable sources, as well as environmental law that has resulted in fuel switching from coal to natural gas for primary power production. Over the same period:
  - 5.1. economic growth in countries not party to the Kyoto Protocol has been rapid, notably in China, India and Brazil;
  - 5.2. rising quality of life expectations mean electricity demand is rising faster than changing technology or energy efficiency improvements can match;

- 5.3. the focus on natural gas has produced a shortage as insufficient time was given to develop new fields and delivery infrastructures before introducing new regimes;
- 5.4. combustion technology has hardly changed, whilst nuclear, the one technology with minimal carbon emissions, has been sidelined, hydro development has stalled on environmental grounds and renewables still do not provide baseload security;
- 5.5. global energy security of supply, with vulnerable infrastructures spanning regions, has become a higher level concern.

## The Outlook

6. The goal of the Framework Convention on Climate Change is to stabilise global GHG concentrations. The International Energy Agency (IEA) in its World Energy Outlook points to growing use of fossil fuels continuing to 2030, with the developing world taking over as both leading users and emitters. In most respects this does no more than to confirm economic trends, but throws the basis of the Kyoto Protocol into sharp perspective. IFIEC believes that action to reduce GHG emissions is needed, but that existing policies do not meet this long term challenge.



*Fossil fuels continue to dominate energy supplies, meeting more than 80% of the projected increase in primary energy demand in this scenario. Oil remains the single largest fuel, with two-thirds of the increase in oil use coming from the transport sector. Demand reaches 92 mb/d in 2010 and 115 mb/d in 2030. Natural gas demand grows faster, driven mainly by power generation. It overtakes coal as the world's second-largest primary energy source before 2015. In this scenario, the share of coal in world primary energy demand declines a little, with demand growth concentrated in China and India. Nuclear power's market share declines marginally, while that of hydropower remains broadly constant. The share of nonhydro renewables, including biomass, geothermal, solar, wind, tidal and wave energy, will remain flat at 11%.*

IEA

## Security of Supply

7. Where once, global supply lines were seen as the way forward, more recent threats mean energy security has taken a much higher importance. Now the emphasis is to reduce dependence on external supplies by replacing them with those available locally. For some, this will mean greater use of renewables and nuclear technologies. For others it means using fossil fuels and adopting new techniques to abate emissions. There will be no one answer globally.

*Over time, consuming countries will grow increasingly reliant on oil and gas imports from an ever-smaller group of suppliers – notably Russia and the big Middle East producers. Expanding trade is to be welcomed as it binds suppliers and customers in mutually beneficial relationships. But, at the same time, the risk of a major supply disruption – whether from terrorism, piracy, accidents, severe weather, political tensions or war – will undoubtedly increase.*

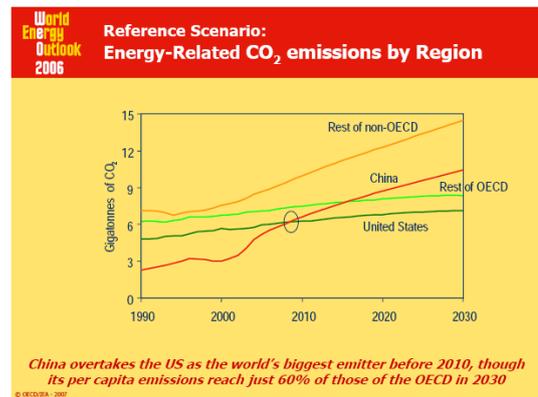
IEA

## Elements of Sound Climate Policy

- Any effective climate policy needs to work with, not against the natural resources, economic trends and capital structuring of any economy. The failure of the Kyoto Protocol was the assumption that participation would be fully endorsed by all countries in a worldwide effort and that the targets set would be reached without any influence on the economies and growth potentials of the Parties. It is clear now that many signed the Protocol, but were not prepared to commit to the policies that were needed to make it effective. Equally, developing countries interpreted proposals that they should join as attempts to restrict the growth of their economies, were not taking that step and had no need to do so. Future policies need to be incentive based, not restrictive and have objectives that wider populations accept as necessary and realisable.

## A Global Challenge Needs a Global Response

- It is clear that fundamental change is needed if parties to the Kyoto Protocol are to meet the commitment to reduce emissions against 1990 levels. Even more will be necessary if a successful agreement is to be achieved on a global level to follow the Protocol after 2012. International, regional and corporate partnerships will need to be encouraged which embrace technology development, transfer and use as key elements for effective climate change action.

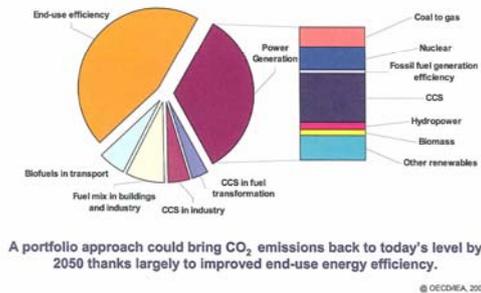


## Technology is the Long Term Solution

- The answer to climate concerns lies in technology. A long term shift in technology will be needed if the GHG atmospheric concentration is to be stabilised. An aim of the Kyoto Protocol was to promote technology transfer, but it has done little to stimulate technology innovation or transfer. Where this has happened it has been due to long established economic drivers, not climate policies. IFIEC believes that the IEA analysis of a mix of technologies being necessary is correct. The capital needed for investment will not be provided if the options available are considered technically or economically inefficient, because better techniques have been excluded. Nuclear is one example of such a technology that has been rejected by some countries.
- Industrial energy consumers in OECD countries have invested heavily in energy efficiency. The energy intensity in manufacturing in a selection of countries studied by IEA declined markedly even before the Kyoto Protocol was signed. Reduction in energy intensity has continued in response to ever increasing competitive pressures and stricter environmental laws, but is increasingly difficult without new advances in energy raising and pollution abatement techniques. The UN recognises the role of industry in stating that *"it is important to focus on the role of private-sector investments as they constitute the largest share of investment and financial flows (86 per cent)"*.
- If technology changes or efficiency improvements cannot match the GHG reductions required by the new policies, then efforts to limit emissions could have significant consequences for national economies globally. It will have particular effects industries such as represented by IFIEC, where energy is a major factor in remaining competitive. Activities such as basic chemicals, pulp and paper, rubber, glass, cement and metals have higher energy demands than other manufacturing sectors. This holds true regardless of region, as these industries supply the fundamental raw materials for economies and societies. These are also the industries that will innovate and produce the new, more energy efficient materials and products needed in lower carbon societies.

13. Despite this, there are still efficiency gains to be made, as recent studies by IEA show. These improvements will have minimal effect, though, if new investments across the globe are not to “state of the art” technology and other technology options are not explored. The expected increase in demand and associated emissions to 2050 will not be countered either by incremental improvement or by relying on existing technologies. IFIEC believes that renewables have an important part to play in national energy mixes, but major technological gains have to be made if they are to play any significant part in supplying dependable baseload capacity, which both industry and society need.

*Emission Reduction by Technology to 2050*



### Design of Market Tools is Vital

14. Any measure needs very careful economic analysis before introduction because rules and design can detract from the initial objectives. The principles of sustainability are not enhanced by measures that result in jobs moving from industrialised to developing economies if higher pollution levels result. Unilateral political measures to reduce GHG emissions, such as energy taxes, also distort markets, impair competitiveness and reduce cash available for investment in more efficient technologies. These are counterproductive in either curing the short term problem or offering long term sustainable solutions. The time frame of new technology development and commercial use is 25-40 years and market investors need high confidence levels before committing to such return periods. Energy intensive sectors can only move forward with investment in less energy intensive plants when proposals are technically sound and economically justifiable.

### The European Experience

15. The Emission Trading Scheme (ETS) established in Europe at the start of 2005 is a new and complex instrument aiming to reduce CO<sub>2</sub> emissions in a cost effective manner. The scheme interacts with an electricity market still to be liberalised fully, so is not yet functioning properly. The initial result was alarming: all over Europe, electricity prices rose well beyond all expectations. The main reason for this is that power producers are able not only to pass on the increased fuel price and the cost for complying with their CO<sub>2</sub> reduction targets, but also to charge the whole value of their CO<sub>2</sub> allowances, which they largely receive for free, as an ‘opportunity cost’ into the power price. This leads to massive additional revenues for power producers at the expense of all power consumers, without any environmental benefit.
16. The energy intensive industries in Europe are operating and marketing their products in a worldwide market. Prices are not set based on the regional cost framework, but by worldwide competition, so the possibility of passing these costs on to their customers is limited if not non-existent. The impact on the energy intensive industries as a result of the opportunity cost practice in the power industry averaged €14bn/year in the first 3-year period 2005-2007, even though the situation eased in 2007 due to the collapse of the CO<sub>2</sub> price. At an expected CO<sub>2</sub> price of €30/ton in the second 5-year period 2008-2012, the cost will rise to about €63bn/year meaning further damage to the competitiveness of industry as well as higher costs to European householders. The proportion of these costs falling to European industry is expected to be €22 bn/year in the second period, with “windfall profits” to generators of €54bn/year. As a consequence, the experience is of:

- 16.1. high costs for society and for energy intensive sectors in particular;
- 16.2. little CO<sub>2</sub> reduction;
- 16.3. unjustifiable profits for electricity producers.

17. For the third trading period, which is expected to last from 2013 to 2020, the thinking is of full auctioning for electricity. With the higher demand for electricity and a higher CO<sub>2</sub> price of € 35/ton, possibly a conservative estimate, the costs will rise to €82bn/year. Despite auctioning, the “windfall profits” are still €45bn/year. As it stands, the European ETS system is not likely to be attractive to other countries as the basis for a global arrangement to follow the Kyoto Protocol. The resulting carbon market also needs to be clearly monitored and controlled by competent authorities.

18. Solutions should be found to ensure that only the direct costs of ETS actually incurred by electricity producers is carried by energy intensive industries and other consumers. Various stakeholders (including, most notably, IEA and CEPS) have developed solutions and decision makers should consider seriously inter alia:

- 18.1. performance based allowance allocation with ex-post adjustment;
- 18.2. benchmarking with the aim of making this globally attractive across sectors;
- 18.3. temporary regulatory measures;
- 18.4. allowances allocation to energy intensive industries for direct and indirect emissions.

19. An emerging global carbon market could be based on regionally differentiated benchmarks, which should be determined on a product by product basis. Each region would determine benchmark targets below their average emission per unit of product. Then regions with lower carbon efficiency get a transition time before the benchmarks of all regions merge into one benchmark for a specific product. This differentiated benchmark approach allows new regions to enter the scheme at different points in time. It also avoids the competitive disadvantage for regions which are not yet as efficient. This approach is summarized alongside.



## Encouragement Not Constraint

20. The way forward to achieving agreement on reducing greenhouse gas emissions is by encouragement, not by constraint. The goal of the UNFCCC should be to provide measures that enable industrial companies to introduce changes that lead to stabilising greenhouse gases concentrations as a long term business programme applicable to industry, transport users and householders. Governments need policies to encourage the required technological development followed by fair market processes to make it available to the developed and developing world. Actions such as environmental taxes are negative, further reducing funds available for both investment in energy efficiency and research and development. Full understanding of the social, technical, economic and environmental implications of climate policy options need to be carefully studied and flexibility, not rigidity, is needed whilst this understanding is gained.