

Opinion of the European Economic and Social Committee on the theme 'Facing the oil challenges'

(2009/C 182/13)

Rapporteur-General: **Mr OSBORN**

On 21 November 2008 the European Parliament decided to consult the European Economic and Social Committee, under Article 262 of the Treaty establishing the European Community, on the theme

Facing the oil challenges.

On 12 November 2008 the Committee Bureau instructed the Section for Transport, Energy, Infrastructure and the Information Society to prepare the Committee's work on the subject.

Given the urgent nature of the work, the European Economic and Social Committee appointed Mr OSBORN as rapporteur-general at its 450th plenary session, held on 14 and 15 January 2009 (meeting of 14 January), and adopted the following opinion by 140 votes to 6 with 2 abstentions.

1. Summary and Conclusions

1.1 The two critical factors which will shape the future of the oil industry over the next decades are:

- The acceleration of climate change, largely driven by the increasing emissions of CO₂ from the burning of fossil fuels.
- The finite global supply of reserves, and the gradually growing technical and political difficulties of obtaining secure and easy access to the reserves that remain.

1.2 The interaction of these two factors is currently leading the world into a more and more unstable position as increasing carbon emissions cause climate change to accelerate, and as the increasing consumption of oil brings us closer to the point at which supply constraints may lead to critical shortages and economic disruption.

1.3 The only successful way out of the climate change crisis will be for the global economy to manage a rapid transformation of its energy base away from its current excessive dependence on the burning of fossil fuels. For oil global demand needs to stop growing within a few years and then to decline steadily to much lower levels by the mid-century. This challenge is particularly pressing for Europe because it is so dependent on oil imports.

1.4 New sources of oil are becoming scarcer, and often have political and environmental problems attached to them. The world in general (and Europe in particular) will be better off and more secure if dependence on oil can be reduced.

1.5 European demand should be reduced by at least 50 % by 2050 and probably much more.

1.6 The market cannot achieve the necessary transformation away from oil by itself.

1.7 Fiscal measures to push up the price of oil ⁽¹⁾ (and other fossil fuels) relative to other sources of energy through carbon or petroleum taxes or trading carbon permits have an important part to play, and should be developed further. But other measures will also be needed, differentiated by sector.

1.8 The European Union's emission trading system should be developed in such a way that a floor price for carbon is established to give greater certainty to the market. The floor price shall then be driven steadily upwards over the next three decades so as to provide a steadily increasing market pressure on operators of all kinds to diversify away from fossil fuels.

1.9 In the transport sector the key changes needed are:

- Planning cities, towns and other settlements so as to reduce journey lengths and times where possible.
- Continuous improvement in the energy efficiency and carbon performance of planes, ships, trains and road vehicles of all kinds.
- Favouring
 - rail rather than air flights;
 - public transport rather than private transport;
 - electric or hydrogen powered vehicles rather than internal combustion;
 - cycling and walking wherever possible.

⁽¹⁾ The EESC discusses the topic of oil prices in further detail in its forthcoming opinion EESC 348/2008 *Facing the challenge of higher oil prices*, the EESC's response to the Communication 'Facing the challenge of higher oil prices'.

1.10 In homes and other buildings the use of oil (and other fossil fuels) for heating, cooling and cooking will have to be progressively replaced by electricity from green sources.

1.11 In power generation renewable sources need to be expanded as fast as possible. Fossil fuels will however inevitably remain the major fuel for power generation for many years to come, and it is therefore vital to develop and install carbon capture and storage technology as rapidly as possible. The use of oil as a fuel for power generation should dwindle, but where it is still used carbon capture technology should be applied as with coal.

1.12 A new generation of nuclear power plants may have a part to play in some countries in easing the transition to a low carbon economy. But investment in this sector must not be allowed to divert resources and political attention from the development of renewable energy sources.

1.13 The European Union and its Member States have taken an early lead in shifting policies in the right direction on all these issues, but they still need to go further and faster. They also need to seek similar commitments from other developed countries, and devote major financial resources to promoting comparable efforts in developing countries.

1.14 Civil society needs to be involved much more extensively and systematically in the process of spreading awareness and acceptance of the changes needed, particularly those that will affect lifestyles and behaviour.

1.15 The global oil industry faces a dual challenge for the future:

- to help the world to adjust to a situations of steadily lessening dependence on oil;
- to apply its enormous resources of knowledge, expertise, and financial power to become (or to help others to become) the pioneers of the new non fossil fuel technologies.

2. Carbon Emissions and Climate Change

2.1 The risk of devastating climate change driven by growing emissions of Greenhouse Gases is one of the greatest challenges facing the world in the 21st century.

2.2 The IPCC have established that if the global temperature increase caused by GHG emissions is to be kept to no more than 2 °C above pre-industrial levels CO₂ emissions will need to cease growing within 5-10 years and to decline steadily by something between 50 and 85 % from 2000 levels by 2050.

2.3 This will require a radical transformation of current patterns of consumption and production throughout the world — on the scale of a new industrial revolution. Reductions in the level of emissions from oil-burning must play their part in the overall carbon reduction. It would be helpful to establish a generally agreed trajectory or benchmark for the progressive reduction of global demand for oil over the next four decades, and within that a specific trajectory for Europe. European oil consumption needs to reduce by at least 50 % by 2050 and probably considerably more.

2.4 At present the trajectory of global consumption of oil is still rising from year to year, now principally driven by the rapid expansion of demand in the emerging economies. Although demand in Europe is now nearer to stabilising we have not yet got onto the downward trajectory that will be needed.

2.5 The kind of measures that Europe is now putting in place in the energy package are a start, but in the Committee's view the Commission will need to bring forward a second package soon to achieve the right level of reductions.

2.6 Europe only accounts for less than 20 % of global demand for oil. It will be equally important to secure similar commitments to reduce demand from the other developed countries and from the emerging economies in the current Climate Change negotiations.

3. Supply of Oil

3.1 The world's resources of oil are finite and cannot last forever. New sources of oil supply in the world are still being discovered, but the new finds tend to be smaller and more difficult to develop, and are sometimes in politically unstable or unfriendly parts of the world. They may be more expensive to develop.

3.2 Some of the new sources are located in environmentally sensitive areas such as the Arctic. Others, such as the Canadian tar sands, will be more difficult to operate, and the extraction process will itself produce larger CO₂ emissions. It would be desirable to avoid using such sources if possible, or at least to postpone using them until better environmental and carbon capture safeguards can be put in place.

3.3 Europe faces particular problems in relation to oil supplies. Sources of oil within Europe are becoming depleted, and Europe is becoming increasingly dependent on imports which now account for over 80 % of supply.

3.4 In the future Europe's position could become more difficult. Oil supplies could become less readily available, or only at much higher prices. Volatility of supply and of prices could also become more frequent.

3.5 This potential supply side problem adds extra weight to the importance of making rapid progress in Europe to reduce our dependency on oil. The more rapidly we can reduce overall demand and diversify to other more readily available sources of energy the greater our independence and security will be, and the more strongly we will be able to press others to play their part in restraining demand in order to combat climate change.

4. What needs to be done? — Diversifying away from oil

4.1 Oil is principally used in the transport sector, but with significant proportions in domestic heating and cooking, in heating and cooling other buildings, in power generation and as a feedstock for the petrochemical industry. In all these sectors it will be necessary to reduce or eliminate reliance on oil as quickly as possible.

4.2 The transport sector — Three changes are needed

- Planning cities, towns and other settlements so as to reduce journey lengths and times where possible.
- Continuous improvement in the energy efficiency and carbon performance of planes, ships, trains and road vehicles of all kinds.
- Favouring
 - rail rather than air flights;
 - public transport rather than private transport;
 - electric or hydrogen powered vehicles rather than internal combustion;
 - cycling and walking wherever possible.

4.3 Aviation may have to remain a privileged user of oil at least for the next two or three decades for essential uses. But it should make the maximum possible efficiency improvements, and expansion of high speed rail services should be preferred to air transport wherever possible. Further expansion of air transport and airports should also be discouraged.

4.4 In relation to shipping efficiency improvements should be sought continually, and innovative ideas such as adding supplementary wind power to reduce fuel consumption should be actively encouraged.

4.5 Household consumption of oil

Direct burning of fossil fuels in fires, boilers or cooking will need to be phased out, and electricity (increasingly drawing on locally based renewable generation as well as the grid) or sustainable grown wood will have to become the standard household fuel. A timetable for this transition needs to be established.

4.6 Oil in the business sector

A similar transition will be needed in the industrial and business sector of the economy for all general heating and other purposes. Where industrial processes currently rely on the use of fossil fuels as a feedstock sector by sector analysis will be needed to identify how far carbon emissions from such processes can be captured and stored or where such uses can be substituted by non fossil fuel processes.

4.7 Power generation

In power generation there will need to be a great effort to expand renewables of all kinds as rapidly as possible. The targets Europe has set are a good beginning but more needs to be done to carry the different technologies into the market place at affordable prices.

4.8 Coal (and to a lesser extent other fossil fuels) will remain an important fuel for power for power generation for several decades ahead. Carbon capture and storage should be developed as soon as possible. It should then be mandated for any remaining oil-fuelled power stations as well.

4.9 A new generation of nuclear power plants may also have some part to play. But nuclear power technology has its own sustainability problems, and must not be allowed to divert investment resources and political attention from the major expansion of renewables and energy efficiency that are the primary goal of the transition.

4.10 To assist all parties concerned to plan for these changes it would be useful to establish indicative pathways for the levels of savings to be achieved in each sub sector that uses oil, and the likely timetables for these transitions both at global and at regional level.

5. What Needs to be Done? Policy Measures to reduce reliance on fossil fuels and to encourage diversification of energy supply

5.1 Many of the measures needed to encourage and promote the transformations are already well-known. The set of measures contained in the Commission's recent energy package covers many of the points and should provide a good starting point for further development. Everywhere in the world, including Europe, the range of measures needs to be extended and to be applied more vigorously and urgently.

5.2 Fiscal Measures to put a proper price on carbon emissions

Fossil fuels should bear the full cost of the burden that the emission of carbon dioxide is imposing on the world. This requires either taxation of products causing carbon dioxide emissions (such as gasoline), or a system for rationing and trading permits to release carbon dioxide, or both.

5.3 The European Union's carbon trading system needs to be pushed ahead vigorously so that it establishes a clear and stable market signal in favour of reducing fossil fuel consumption and diversifying to other fuels. Anomalies need to be fixed, and exemptions reduced. Above all the system needs to be extended to the rest of the developed world, and as soon as practicable to the emerging economies as well. This should be a key objective in the context of the international Climate Change negotiations.

5.4 It might be desirable to develop the system in such a way that a floor price for carbon is established to give greater certainty to the market. The floor price might then be driven steadily upwards over the next three decades so as to provide a steadily increasing market pressure on operators of all kinds to diversify away from fossil fuels.

5.5 *Regulatory Measures*

Fiscal measures are not sufficient by themselves to drive the necessary transition away from oil. Demand is too inelastic, and there are political constraints on driving up the prices of oil products too rapidly. There needs to be a comprehensive programme of regulatory measures to drive up standards and drive out inefficient processes and products. There also needs to be support for the research, development and introduction of the new technologies needed.

5.6 For efficiency there needs to be a comprehensive and urgent programme to drive up the energy efficiency standards of all energy-consuming products and services. Europe still has further to go, both in setting the standards and in ensuring that they are complied with. The heating and cooling of buildings for example is still massively inefficient and needs a vigorous programme of action to secure rapid improvement.

5.7 Standards for improving the carbon emissions from vehicles are particularly important. The EESC welcomes the new standards now agreed but urges the early establishment of even more stringent standards for future years so as to establish a firm planning framework for the motor industry to adjust to. The next step now urgently needed is to establish a similar tight programme for the progressive improvement of emissions from vans and from heavier goods vehicles. Again action within Europe needs to be matched by comparable efforts in other parts of the world.

5.8 *Research, development and financial support*

Some of the new technologies needed are still at the development stage and will need significant support and encouragement from the public sector to secure their early introduction and wide deployment. Carbon capture and storage, further development of renewables, third and fourth generation renewables, electric (or hydrogen) powered vehicles and the infrastructure they will need are all in this category and all require major public support to get them well-launched in the world as soon as possible.

5.9 Major investment in the rail sector is needed to spread electrification, and make rail travel the preferred alternative to air flight for most short haul routes in Europe and in other parts of the world.

5.10 *Involving Civil Society*

Much more needs to be done to bring the general public, business, trade unions and other civil society organisations into partnership and participation in the common effort.

- Citizens need to be encouraged and incentivised to play their part through such means as improving the efficiency of their homes and cars, using greener forms of energy for lighting and heating, purchasing more energy efficient goods and services, and reducing the carbon impact of their regular travelling and their holidays. In our view there is already a growing proportion of the public and of civil society organisations that would be ready and willing to take action if only they could be given a strong and effective political lead as to what is expected of them, along with appropriate incentives for action.
- Many local and regional government bodies have already shown vision and courageous political leadership on this issue. They need to be encouraged and incentivised to go further.
- Businesses similarly need to be incentivised to make further progress. They need to be urged and incentivised to continuously improve the energy efficiency of their operations and to obtain their energy from low carbon sources. Regulation should be used more systematically and vigorously to drive up the energy performance of all types of products and services.
- Trade unions have an important part to play as well. Many of their members are in the front line in delivering energy efficiency improvements and disseminating practical information and their potential contribution needs to be recognised and encouraged. Properly managed, the new forms of production should provide just as many employment opportunities as the older carbon intensive modes of production, while maintaining good working conditions.

5.11 All of these measures will need to be adopted and pursued vigorously within Europe in order to reduce demand for fossil fuels generally, and particularly for oil. They will also need to be promoted with other partners in the developed world, and increasingly in the emerging and developing economies.

5.12 The emerging economies and the developing world may themselves become innovators and pioneers of the low carbon economy, and this should be actively encouraged. Trade policies should never be used to protect older less carbon efficient industries anywhere in the world.

6. Adaptation in the Oil and Gas Industry

6.1 While the world economy continues to be dependent on oil the oil industry must clearly work to supply that need. Nevertheless continuing with business as usual would not be an adequate response by the oil industry. There are a number of areas where the oil industry of the world can and should be expected to assist with the transition to a lower carbon economy:

- Recognise the necessity of the transition of the global economy to a declining usage of fossil oil over the decades ahead, and think, plan and behave accordingly.
- Continue to improve the oil industry's own carbon performance in its own operations.
- Substitute biomass or other carbon neutral resources for the use of fossil fuels in its products where feasible and sustainable.
- Use the oil industry's massive resources of skills and financial power to help other aspects of the transition, and the earliest possible development and deployment of carbon capture and storage.
- Work closely with the automobile industry to help accelerate the transition to low or zero carbon vehicles.

6.2 For its part the European Union, member states and other governments should maintain intensive dialogue with the global oil industry to try to develop a common understanding of the trajectory for declining oil usage that needs to be established, and to

provide appropriate incentives to encourage (or if necessary compel) the industry to move in these five key directions.

6.3 On investment the EESC would like to see the industry devoting more effort to helping in the transition to a world of lower demand for oil in the future, and less to developing more marginal sources of oil, particularly when these are themselves going to cause severe environmental damage.

6.4 The EESC believes that there is some scope for biofuels development (and particularly for greater use of biomass) but that sustainability criteria need to be applied and may limit the scope for expanding this technology. The pyrolysis of biomass to produce biochar that can be applied to soil as a soil improvement, thereby making the soil a carbon sink, looks promising. In the transport sector electricity or hydrogen appear to be more promising as long term solutions. Intensive discussions with the relevant industry sectors should continue to try to establish optimum pathways for these transitions.

6.5 As the price of oil has increased the industry already has a strong financial incentive to improve the efficiency of extraction and refining and to minimise transport costs. The Fuel Quality Directive will provide a further useful incentive in this direction as well as incentivising the introduction of biofuels.

6.6 Taxation of oil products already produces major income for Governments, and this may increase further when carbon permits are auctioned more extensively. Part of these proceeds should be directed to supporting the development of the new energy technologies that are needed. Incentivising the oil industry itself to play a larger part in the transition to the low carbon economy by offering them tax concessions or capital allowances in respect of the necessary investments might also be considered.

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