



**Business and Industry Advisory Committee to the OECD**

**Comité Consultatif Economique et Industriel Auprès de l'OCDE**

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## **BIAC Energy Committee**

### **Vision Paper**

This paper contains business recommendations for consistent policies and adequate framework conditions for investment in the energy sector to address future demands and promote all aspects of sustainable development. In particular, BIAC would like to underline the importance of:

- **Fostering a long-term and consistent policy framework, with international co-operation for transboundary issues**
- **Balancing the economic, social and environmental dimensions of sustainable development**
- **Keeping all energy options open**
- **Avoiding market distortions in the energy sector**
- **Encouraging innovation and technology diffusion**
- **Improving developing countries' access to energy**
- **Taking a long-term view which accounts for long-term investment cycles**

## **Preface**

*Energy is an essential motor of social and economic development for an ever-increasing world population and an indispensable ingredient of sustainable growth. Social and economic development can be attained only if a secure, reliable and affordable supply of energy is ensured. Unlike a number of other industry sectors, energy is of fundamental importance to society as a whole. While governments have a crucial role to play in setting predictable policies and adequate framework conditions for investment in the energy sector, business is indispensable in helping ensure a secure and reliable energy system for all.*

*It is a major task to provide adequate supplies of energy at stable and affordable prices in a safe and sustainable way for a world with six billion inhabitants where some 20 percent still have no access to electricity. This is especially so with the emerging necessity to provide adequate energy supplies to a population likely to increase by another three billion people over the next 50 years. Prudent policies and practices both by governments and companies are fundamental to steering industrialised and developing countries towards more sustainable energy development and use paths.*

*The 2003 IEA World Energy Investment Outlook highlights the amount of investment that will be needed across the energy supply chain for each world region up to 2030. It underlines the major challenges that need to be addressed, which can only be done effectively through close public-private co-operation. The goal of this vision paper, which has been developed by the BIAC Energy Committee, is to identify strategic priorities from the perspective of the international business community focusing on consistent policies and adequate framework conditions for investment in both energy production and infrastructure to address these future demands.*

*As energy is a crosscutting issue with direct links to issues such as investment, trade, innovation, technology, governance, regulatory reform, environmental matters, and competitiveness of energy consuming companies, we hope that this paper will be a valuable input for a range of OECD Committees as well as for international organisations dealing specifically with energy issues, above all the IEA and NEA. We hope that it will be of equal interest to policy makers in national governments as well as to the wider business community.*

## **1. PREDICTABLE POLICY FRAMEWORK**

### **1.1 Consistent Policy Framework**

Securing the world's future energy supply will be a major challenge. World energy consumption has almost doubled in the last thirty years. In 1970, 7.9 bn tons of hard coal equivalents were used world-wide. This figure climbed to 14.4 bn tons in 2002 and is expected to double to approximately 27.1 bn tons in 2050. This rising demand requires considerable investments in the production and distribution of energy. The most significant portion of these investments will consist of long-term projects that are calculated with returns over multiple decades. Consequently, returns from such products need to be as predictable as possible as increased risk would have to be compensated by even larger returns.

Business has an important role to play in innovating and deploying advanced technologies that utilise energy resources more efficiently, improve product quality and enhance both environmental and end-use performance. In this respect, business should participate in policy discussions to help governments take a global and long-term view, pursue market-based solutions and support open competition that promotes such technology innovation and deployment. Predictability is best achieved through a consistent political framework. BIAC therefore encourages governments to

- Set a sound policy framework for investment so that industry can innovate and invest in the necessary production facilities and infrastructure and so that customers can benefit from improved services;
- Commit to a long-term and consistent policy framework to improve political and legal stability of national/regional energy markets;
- Maintain their policy focus on market reforms to foster liberalisation, trade and privatisation in the energy sector based on the characteristics of their jurisdictions;
- Refrain from market interventions and implement rules that do not hamper trade and competitiveness while realising a secure, efficient and environmentally sound energy system.

### **1.2 Balance Economic, Social and Environmental Dimensions of Sustainable Development**

The UN Development Index shows that the increased use of energy and electricity is a prerequisite for continued economic development and improved quality of life, particularly for developing countries. WSSD highlighted the need to dramatically increase access to affordable energy as a crucial enabling condition for achieving sustainable development. Achieving development goals in the poorest countries will require greater access and improved energy services as a means to provide education, health, water and other imperative societal needs.

Energy production and consumption can raise environmental challenges, including land use, global climate change, water and urban air quality. Yet the environment is but one of many factors that decision-makers should account for when considering energy choices. A sustainable energy pathway will require broad societal consensus around integrated policies to advance economic, environmental and social development. According to their state of development and priorities, countries will appropriately pursue different paths towards sustainable development. They will require different policy mixes, incorporating fiscal, regulatory and research & development efforts.

Today, companies can offer increased supplies of safer, cleaner, economically viable and more reliable fuels for transport, light, power, and heat, all with reduced energy use per unit. Many businesses have implemented management systems that have significantly improved safety,

health and environmental performance and that provide an ongoing pathway to continuous improvement.

BIAC encourages governments to consider the following priority areas:

- Improving enabling frameworks in developing countries (improved market access, rule of law, protection of property rights, energy supply and access);
- Enabling and encouraging technology innovation, dissemination, and co-operation, without technology constraints and trade barriers;
- Encouraging R&D on long-term energy and energy-efficient technologies;
- Supporting business models that provide a range of fuels and energy services through both investment and consumer financing mechanisms;
- Expanding access to modern and cleaner fuels through public-private collaboration to provide affordable alternatives to traditional fuel use for household and industry applications.

### **1.3 Keep All Energy Options Open**

The world needs energy. Overall energy demand is projected to grow by approximately 70% over the next 30 years. Unless this demand can be met reliably and affordably, living standards will suffer and quality of life for the 1.6 billion people who currently lack access to electricity will be negatively impacted. To meet this challenge, the world will need the full range of energy sources to satisfy the economic, social and environmental requirements of sustainable development.

The continuing diversification of energy systems needs to be supported as a priority. Market penetration of energy systems is a very long-term process. New technologies, changes in capital stock and industrial institutional reforms take time to have a major impact on the global scale. Therefore, it would not be realistic to expect a sudden changeover from existing major energy systems to new ones. Long-term energy security calls for the utilisation of a variety of energy sources in order to reduce exposure to sudden disruptions. National circumstances will best determine the mix of fuels – oil, gas, coal, nuclear or renewable energy – which is necessary to contribute to energy security and sustainable economic growth. This is not a static situation: new energy options can be expected to affect the balance of the existing energy mix, and flexibility to this evolution is necessary.

BIAC therefore encourages governments to

- Keep all energy options open and to avoid choosing “winners” and “losers” among technologies;
- Ensure the safe operation of existing plants and maintain regulatory infrastructure that supports the timely licensing of new plants;
- Foster the international co-operation of scientists and industrial enterprises, share knowledge and help to maintain an ongoing skills base;
- Remove market barriers and strengthen enabling frameworks for technology innovation and dissemination;
- Explore opportunities for OECD and non-OECD partnership in strengthening the infrastructure of developing nations to adopt and manage energy technologies.

## 1.4 Identify and Avoid Market Distortions

Economic prosperity and efficiency depends upon free and open markets and predictable and transparent regulatory frameworks which reduce competitive distortions. Free and open markets operating within a clear, stable and well-designed legal, fiscal and regulatory framework are the foundation to avoid market distortion and best serve the interests of business and society. Open markets across national borders have been a reality for decades in the oil and coal sectors, whereas integrated regional markets are a comparatively new experience for electricity and gas. Market-based prices, market solutions, cost-benefit analysis, non-discriminatory and consistent enforcement, risk assessment and sound science are all attributes of these frameworks. A sufficient degree of international co-ordination is required if distortion of competition is to be avoided. The use of market-distortive policies adds unnecessary costs to society, hampers efficiency and should be avoided.

Public-private partnership and public support for energy-related research and development are necessary means to progress new energy technologies. However, this public support must be used judiciously. For example, different forms and degrees of national assistance to primary fuel types can create competitive distortions between generators of electricity among the different fuels. Unjustified or unlimited subsidies or comparable state intervention become a burden for the sectors that have to bear the additional costs. In addition, differences in taxation and in environmental and other regulations between different energy sources and jurisdictions can distort competition significantly. Therefore, policies should be carefully assessed for their economic burdens and cost-effectiveness before they are finalised and implemented.

In order to limit the impact on the functioning of free markets and to avoid unnecessary costs to energy producers and consumers, a number of principles should be respected:

- In general, government action such as subsidies, floors, caps and/or use restrictions inevitably harm the foundation and function of markets by masking critical supply and demand signals.
- Import/export tariffs and duties and other import/export restrictions on trade related to energy itself, or to the form of energy used in manufacturing or transporting a product should be avoided.
- The business environment should encourage investment in energy research and development, and public-private partnerships should be encouraged.
- Government supported R&D programmes should cover the broad range of possible future energy technologies and energy sources, be based on sound science and tangible costs and benefits over a total energy chain and should not cause market distortions.
- Governments should not attempt to pick technology winners and losers. State aids should, in principle, only be granted for sources that will eventually become economically viable and competitive within a reasonable horizon. Such state assistance should be “digressive” and take into account the requirement of market penetration within a reasonable amount of time.
- Public funding should focus on fundamental and pre-competitive aspects of R&D. To be efficient, public funding should be given under competitive conditions, ideally in the form of a transparent and non-discriminatory auction.
- Public spending on energy R&D should be co-ordinated among governments to avoid double R&D investments on the same topics and should be reviewed on a regular basis.

## **2. ADEQUATE FRAMEWORK FOR INVESTMENT IN THE ENERGY SECTOR**

### **2.1 How to Diffuse Technology – the role of private investment**

Technology will affect the choice and costs of future energy systems. The main vehicle for technology diffusion has been and will continue to be the private sector, through its day-to-day business activities of technology development, investment and technology sales and dissemination. The business sector has extensive experience in project identification and development, in technology management and dissemination in developed and developing countries and in the funding and management of technology investments and joint ventures through which technologies are shared. It therefore has a crucial role in promoting the rapid introduction of advanced and innovative energy technologies in both developed and developing countries.

As private sector investment levels have surpassed overseas development assistance, both OECD and non-OECD countries will benefit from the establishment of supportive frameworks, market conditions and incentives for innovation and diffusion of technologies. Trade and investment liberalisation is essential to speed the transfer, adoption and diffusion of technology. OECD governments should continue their efforts to work with developing countries to establish appropriate incentives to encourage private investment in energy technology, which requires a conducive legal framework and a clear definition of investors' rights and liabilities. A number of conditions must be met in order to encourage technology diffusion and foster foreign direct investment. These conditions include the following:

- Stable economic, financial and tax systems for investing partners;
- A transparent legal and regulatory structure and sound foreign ownership regulations;
- Flexible and sound labour rules for workers;
- Protection of intellectual property rights and sound environmental laws and standards, all based on scientific assessment;
- Free capital flows and stable rules for foreign currency exchange, and well-functioning administrative structures;
- A stable regulatory framework fostering innovation in a cost-effective manner;
- The absence of excessive bureaucratic rules and delays;
- Regular and open communication between government and industry.

### **2.2 How to Improve Access to Energy in Developing Countries**

Making energy available to people who still lack access to energy is the greatest challenge for governments and the energy industry in the approaching decades and will be key to overcoming poverty. Yet developing countries often face a number of obstacles. Two different kinds of barriers can be identified: those that stakeholders can influence directly and those that require co-ordinated action from partnerships and international collaboration. Micro-barriers are specific to certain technologies and regions of deployment. Macro-barriers can be identified at the policy-level, spanning technological categories and geographical boundaries. Addressing these macro-barriers requires co-ordinated action from various stakeholders interested in sustainable development.

The availability of capital resources, including both up-front costs borne by project partners and the long-term revenue stream derived from consumers, remains a challenge facing energy proposals. Financial mechanisms to stimulate markets to make the necessary capital available are often in short supply in developing countries where they are most needed. Technical capabilities, human resources and cultural aspects strongly affect the viability of projects, and capacity building should be part of any project planning. The ability of energy project participants to secure local acceptance and build social trust determines the extent to which energy technology transfers are accepted and assimilated by the receiving communities.

- Macro-barriers to investment in developing countries should be identified through a joint effort of all stakeholders.
- Human barriers and cultural aspects should be understood and taken into account in the development and implementation of projects.
- The dissemination of high technical and operational standards of energy facilities in developing countries should be supported.
- Technology co-operation, international co-operation and partnerships to promote capacity building in energy-related projects should be encouraged.
- Industry can make a particular contribution by optimising energy systems for developing countries, including smaller scale systems.

### **2.3. Taking into Account the Long Investment Cycle**

Capital equipment often has a long lifetime, which drives the industry's capital investment decisions. For energy producing and large energy intensive industries, equipment lifetimes range from 30 to 50 years. With regular maintenance, capital stock can often last decades longer than its expected/proposed lifetime. New process technology, that is, technology that improves the efficiency and cost effectiveness of a factory or power plant, requires performance improvements of an exceptional magnitude to induce a firm to retire equipment where capital costs have already been paid. Once built, large units of physical capital can operate for many decades and their long lifetime slows the rate at which emissions can be reduced because premature retirement can be expensive.

It is important to clarify the meaning of infrastructure in this respect. Common usage of this word is often limited to the tangible equipment that people associate with industrial or commercial activities. While hardware is undoubtedly an important factor in the energy sector, a broader definition of infrastructure includes not only physical equipment but also knowledge. Human capacity, in the form of management practices, social structures, and institutional arrangements, constitutes another critical dimension that makes the use of energy possible and sustainable.

Furthermore, the planning basis for business development, investment decisions, and cost-recovery may be profoundly affected by governmental commitments and changes in the international framework in the longer term. Uncertainty regarding longer term time frames has already introduced concerns and delays in decision making, especially regarding international investments for energy production and distribution projects to develop long-lived infrastructure.

However, there are cases where governments are not able to establish a consistent policy framework because of the difficulty to make credible long-term commitments, e.g. to tolerate volatile power prices. Under these circumstances additional corrective measures to compensate for this should be evaluated. Business encourages governments to:

- Take a long-term view, recognising that many options involve considerable time and expense to alter energy and raw material inputs, operations and products, and to develop and introduce technological innovations;

- Commit themselves to a consistent framework over the period of investments, which in the energy sector mostly amounts to decades;
- Shape long-term patterns of capital investment (government-sponsored fundamental research and development of new technologies) and
- Allow firms a great deal of flexibility in responding to climate mitigation goals.

## CONCLUSION

Energy is an indispensable ingredient for economic growth and social development. The growing share of non-OECD countries in global energy consumption has important implications for global supply issues as well as environmental consequences. While the private sector has a crucial role in providing adequate supplies of energy in a safe and sustainable manner, governments should create appropriate conditions for a well-functioning and competitive market and for investment in the energy sector.

The OECD's and IEA's challenge is to address how economies can provide and use energy more efficiently with reduced environmental impacts and diversify and expand energy production, while maintaining economic growth and prosperity. These are matters of crucial importance for companies that produce, deliver, transport and consume energy. Active involvement in policy discussions as well as research and innovation initiatives is in the long-term interest of business and industry, and indeed, of society at large. In particular, we would like to underline the importance of:

- Fostering a long-term and consistent policy framework, with international co-operation for transboundary issues
- Balancing the economic, social and environmental dimensions of sustainable development
- Keeping all energy options open
- Avoiding market distortions in the energy sector
- Encouraging innovation and technology diffusion
- Improving developing countries' access to energy
- Taking a long term view which takes into account long investment cycles

International co-operation is essential to enhance overall efficiency of national efforts and to facilitate technology development and dissemination. Governments and industry can benefit from pooling resources and working together. International organisations like the OECD, IEA and NEA have a key role to play in this regard, and business greatly appreciates the opportunity to work closely with them. In partnership with these organisations, BIAAC can provide a useful forum for industry to help ensure that the policy framework and regulatory structures help to make energy available in a safe, efficient and sustainable manner.