WORLD ENERGY COUNCIL
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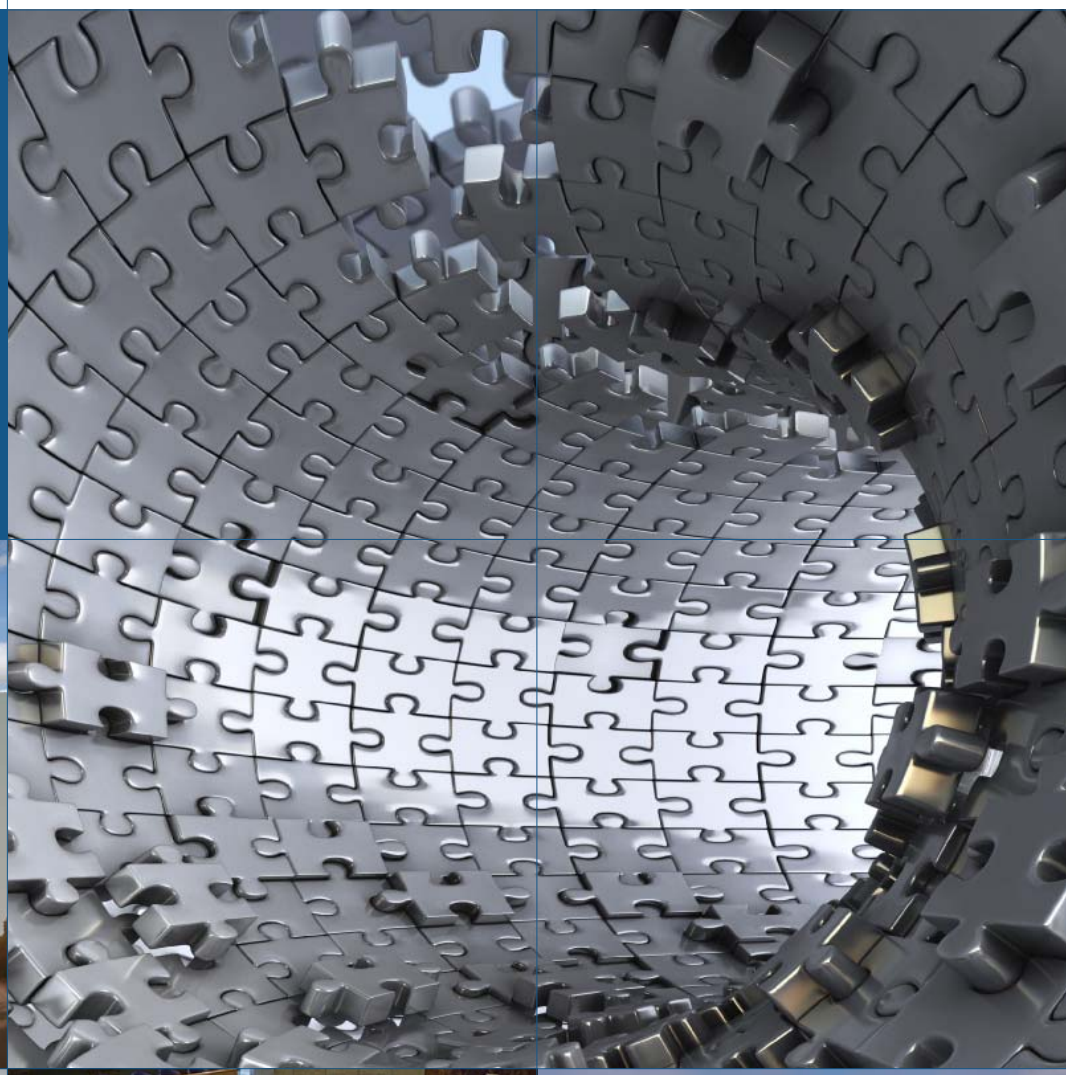
World Energy and Climate Policy: 2009 Assessment

Executive Summary

World Energy Council 2009

Promoting sustainable energy for the greatest benefit of all



World Energy and Climate Policy: 2009 Assessment

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The goal of this Assessment is to help to accelerate the global achievement of energy equity, security, and environmental sustainability by sharing good policy and its practices.

Background

Energy, which has always been vital for human survival, is the life blood of modern society. Current patterns of energy supply and use are shaped by a multitude of factors, the most important of which are geology, location, social values, and inertia in supply and demand. Geology and location define resources. Values, climate, and income shape consumption patterns. Well-structured, open, and transparent markets over time coordinate supply and demand via prices. Inertia is a by-product of the long lead times for developing and implementing energy production and consumption technologies.

Even during politically and economically stable periods, the formulation of energy policies is often constrained by both past decisions, and the need to anticipate new possibilities and needs. In a time of great transition, what was merely difficult can seem insurmountable. The shifting strengths and needs of nations (seen recently, for example in the rapid growth of Asia and the challenges of climate change) are exerting great pressure on an energy system that has been in operation for the past two centuries.

Energy, which has supported the economic growth for that period, is now facing a number of profound transitions:

- a major shift in demand toward Africa, Asia, Latin America, and the Middle East;
- a possible “peaking” of "easy" oil production in the coming 10–20 years and of conventional natural gas by the middle of the century;
- an urgent need to restrict the human production of greenhouse gases and handle regional air pollution; and
- a need for the rapid development of low-carbon and/or carbon-free energy supplies.

The time-frame of these transitions demands rapid action requiring the deployment of a wide array of energy supply and end-use technologies (some of them new). Their implementation will require improved public policies.

The countries of the world are at different stages of development. Countries with low per-capita income levels tend to be preoccupied, first, with ensuring a steady supply of traditional fuels, and then with acquiring more modern substitutes, such as kerosene, LPG, and electricity. The infrastructure of these countries is usually lacking, their mobility rudimentary, and their industry in its infancy. However, as incomes rise and industrialisation begins, energy demand soars. There is massive investment in material-intensive infrastructures, cities rapidly expand, mobility surges, and heavy energy-intensive industry begins to dominate the economy. After this, energy demand slows. As income further increases, services typically grow faster than industry, growth slows and concerns about living conditions, including the environment, increase and often predominate.

As energy demand grows and outstrips local supply, most countries become increasingly

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dependent on imported energy. This can mean greater risks of supply, exposing countries to the uncertainties of geopolitics. As a result, a key focus of energy policy is to ensure the security of energy supply, be it domestic or imported, or a combination of both. The first priority for low-income countries is to address local poverty and health-related problems, such as urban sanitation.

Energy supply and use have significant and negative effects on the natural environment and on human health. Solutions to these problems are costly and complex: for example, addressing air and water pollution may require sophisticated and expensive technologies; sometimes regional or global agreements are needed. Today, energy policy has a strong environmental dimension, and the future pattern of energy supply and demand will be shaped by the way people respond to the major environmental challenges, such as climate change.

Time for New and Accelerated Thinking about Energy

WEC has launched a comprehensive, multi-year Assessment of Energy and Climate Policy, facilitated by the WEC's unique structure of almost one hundred worldwide national committees, comprised of businesses, governments and strategic stakeholders.

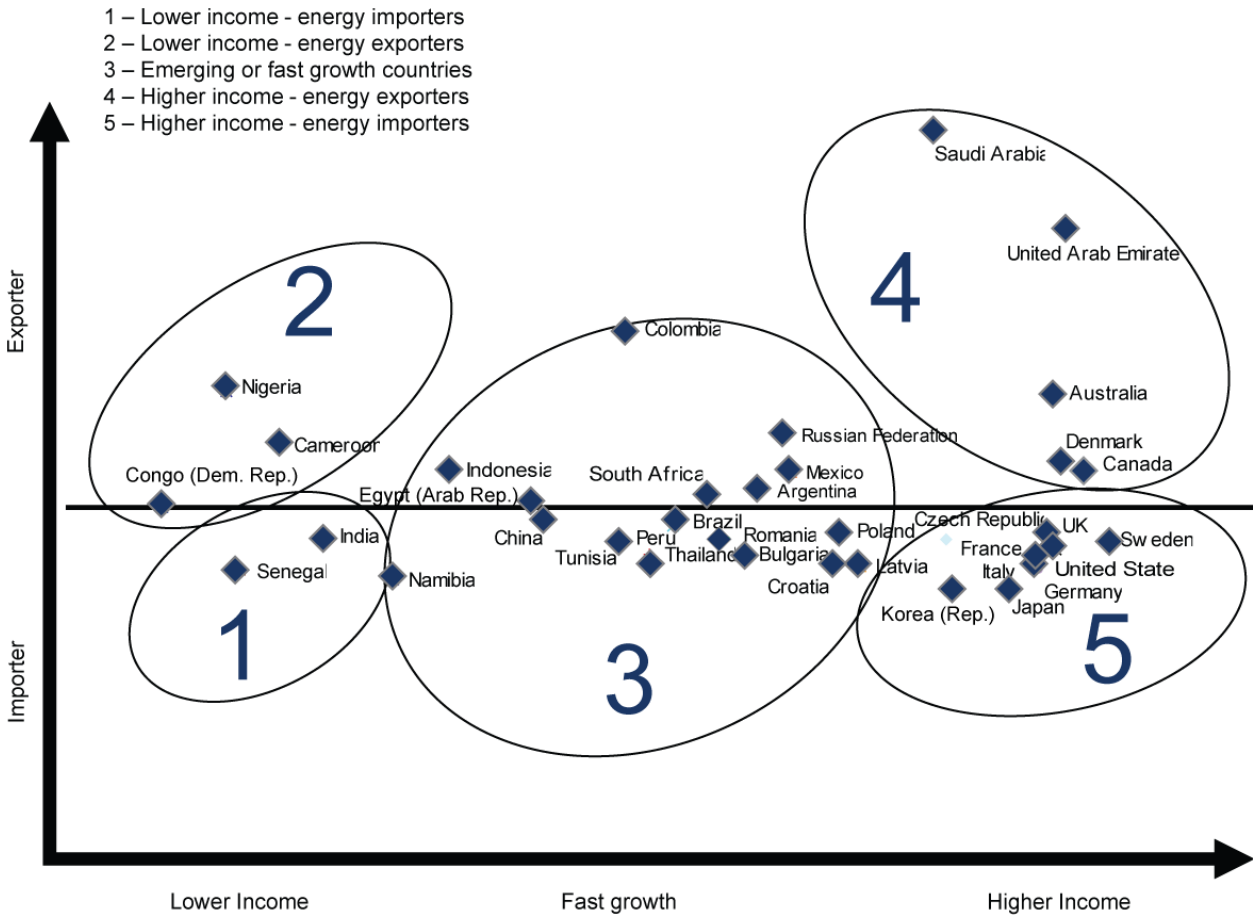
The goal of this Assessment is to help to accelerate the global achievement of energy equity, security, and environmental sustainability by sharing good policy and its practices. No policy area is more difficult to handle than climate change, with its complex science, and uncertainty around regional impacts. Moreover, at its heart it requires the near-abolition of the combustion of carbon, the basis of the bulk of today's energy technologies.

This Assessment encapsulates results across 88 countries. It identifies the top performers in effectively putting energy policy into practice, and gives examples of their approaches and activities.

WEC believes that persistent improvement of government energy policies and industry practices are needed, and that this can lead to a material advancement in their capabilities to handle these rapid energy transitions effectively. Finding adequate policy responses to energy security, environment, and climate change concerns are bedrock objectives for the WEC. However, energy touches deeply on many other policy areas. For example, energy and energy services drive the modern economy, and electricity is the critical ingredient of the digital age. Energy and energy services are usually major employers, as well as providing a critical source of government revenue, and being involved in ensuring military security. Each of these policy areas has its own compelling logic, and interest groups in every area complicate and politicise the making of energy policy. But a coordinated and integrated focus is needed now more than ever.

Energy policies are set in a local or national context, reflecting local or regional priorities, even though their consequences reach beyond national borders. Briefly put, energy consumption is closely related to personal income, and energy supply to local resources. Nevertheless, despite these individual differences, it is still possible to discuss

Country Clusters (with examples)



these countries in terms of broad similarities and differences. This Assessment groups countries into clusters by net energy imports/exports and their level of development, and has identified a number of exceptional country performers in energy policy.

Top division country performers overall by cluster are as follows:

- High-income importers: Austria, Finland, New Zealand, Sweden, Switzerland, UK, and USA
- High-income exporters: Canada and Denmark
- Fast-growth countries: Croatia, Jordan, Latvia, Lithuania, Poland, South Africa, Thailand, and Tunisia
- Low-income importers: India, Philippines, and Sri Lanka Low-income exporters: Indonesia and Paraguay

Lessons learned

Broad lessons from this Assessment include:

1. Governments must pursue clear, consistent, long-term oriented policy objectives.

Energy is a long-term business and investments in this sector last for decades. Providing long-term vision is key and has to be provided by governments and businesses working together. Stable policies have demonstrated their positive effects, for example, the ethanol fuel policy in Brazil, the nuclear power programme in France or the SO_2 market in the US. But building long-term policy frameworks is a challenging task, and can take a long time. Recently, the EU cap and trade market had its initial 5 year set-up time extended by 10 years to 2020. But if this seems a long time, it is still far from the 30-year period that it took to implement the successful US SO_2 market.

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WEC believes that persistent improvement of government energy policies and industry practices are needed, and that this can lead to a material advancement in their capabilities to handle the rapid energy transitions effectively.

As this last example shows, it is worth taking the time since strong and effective government and business institutions are critical to effective government policies. They provide a foundation for robust, long-term energy policy frameworks by building capacity for policymaking, enhancing coordination between government departments, avoiding costly interruptions, and deepening dialogue on technologies.

2. Policy design, based on efficient energy pricing and cost-effectiveness, matters.

The economic downturn has demonstrated that poorly designed policies can have dramatic and negative effects. This is also the case in the energy sector, as illustrated by the California electricity restructuring of 2000/2001. Based on faulty market design, it resulted in blackouts and bankruptcies. Blackouts due to poor policy design have also been the case in South Africa, where a successful electricity access programme was implemented, while at the same time implementing a policy to privatize the power supply industry prevented the building of new power stations or strengthening the transmission network by the existing electric utility. However, other regions have had success in encouraging market-based retail competition. For example, the Electric Reliability Council of Texas (ERCOT) allows most customers access to numerous alternative suppliers.

Prices that reflect full costs, including operating and environmental costs, are a critical element for effective energy policies in terms of:

- energy security in order to guarantee adequate levels of investments;
- incentives for energy efficiency and energy conservation; and
- investments in clean energy.

However, all countries cite the importance of accounting for social and political concerns in energy pricing. Specific measures toward low-income households need to account for real energy prices, as in India where subsidies are given to those who need them most.

Controlling costs is an imperative in order to reconcile social and economic priorities. This is exacerbated by the economic downturn that is putting severe pressure on public funding and will continue to do so in the coming years. Energy RD&D efforts have to be augmented, and with cooperation between governments and between governments and industry.

Policies that enable the massive deployment of existing and competitive clean energy solutions will play a critical role in mitigating costs and emissions at the same time. Recent decisions by some countries (for example, Spain's wind energy programme) to delay the deployment of immature technologies in favour of existing technologies illustrate this approach. In order to accelerate the diffusion of those best available technologies across nations, global cooperation between higher- and lower-income countries is necessary; in particular, technology transfer to low-income countries is a key priority and needs international-level policies.

3. Public acceptance is a critical challenge.

In this Assessment, almost all countries identify the public's reaction as an important issue for the energy sector, especially for electricity infrastructure. This issue affects not only "classical" plant types, but is rapidly extending to renewable energy, which may bring its own environmental concerns, such as land use. In order to develop a collective sense of responsibility and trust among populations, policies need to address this complex situation, fostering and maintaining dialogue among stakeholders, building an informed public on energy issues, and ensuring transparency and accountability by business and government.

4. Other important lessons.

Business, with its international experience, plays a crucial role. There is a need for strong, open, and effective institutions in both government and business. Enhanced energy RD&D efforts with cooperation between governments, and between governments and industry, are an urgent need.

Recommendations

These lessons point to a number of difficult dilemmas and trade-offs confronting policymakers. For policy to be effective, the Assessment points to a number of recommendations for government, business, and other stakeholders.

Government

Government as a whole needs to accept and incorporate the size, scale, and pace of needed development in the energy sector and in related sectors. Government must also ensure that energy strategy and policy are commensurate with the necessary tasks. Leadership at the highest level is required, ideally through a dedicated ministry run by a senior minister, responsible for leading major new energy and climate initiatives, and advised by other ministries (e.g., finance) as needed. Effective energy policy needs strong, open and effective institutions.

Such a ministry must ensure that it has a workable and agreed long-term energy strategy. This, in turn, must be supported by planning machinery that can progress this strategy towards short- and medium-term goals. Open and participative dialogue with all stakeholders is essential to building strong public acceptance for the resulting energy policy and plans. In particular, government needs to be receptive to business.

Long-term vision and public acceptance are essential. Given the pace and scale of likely energy developments, more effective approaches for gaining local public acceptance are needed, especially for siting large projects and infrastructure. For example, timely, open and community-wide discussion, and the effective use of information derived from such discussions.

Business

Business can make an invaluable contribution to the task of addressing global energy issues, especially given that many large energy companies operate in a wide range of jurisdictions. These companies could offer a special role in collectively

advising and shaping global energy policy, one that reflects the extent of their experiences in a wide range of countries.

Business needs to engage openly, constructively, and continuously with all stakeholders, without special pleading. In particular, business has to actively play its part in securing public acceptance of new projects.

Other Stakeholders

Other stakeholders – a diverse group including civil society, various associations, political parties, the media, and the public – should recognise the critical importance of making intelligent and timely policy, because energy is essential to our collective future.

A veto from any group should be avoided. However, the fractious nature of collective energy and environment policy can make this difficult. Thus, appropriate mediation may be needed to strengthen cooperation.

Conclusion

With strong institutions and visionary leadership, cognisant of public needs; with the best policy designs and cost-effective operations in efficient markets; with close cooperation between government and industry, as well as collaboration across countries in technology and policy development – a more effective global energy policy can be achieved.

Comments on this report are welcome and should be directed to assessmentstudy@worldenergy.org.

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[1] The Committee members have agreed to provide insight and recommendations on the process and the conclusions drawn going forward, but all have not reviewed this document as of 25 November 2009.

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