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A Coordinated Policy Framework Is Needed To Address The Issues of Climate Change and Future Energy Demands

Energy is the fuel for economic growth and an essential requirement for social development. Between now and 2050, energy demand could more than double as the world population increases and developing countries expand their economies. To meet the growing energy demand, all energy forecasts show that the world will rely on coal, oil and gas for decades to come. Creating a sound climate change policy limits the impact these fuels have on the environment by encouraging the capture and storage of carbon dioxide.

Alternative energy sources such as renewables will of course contribute to energy supply but will not, on their own, fill the demand gap. Even with major technological breakthroughs, renewables will account for only about 30 percent of world energy supply by mid-century. Renewable energy is not a silver bullet, nor is there a single technology or policy that will solve the world's energy needs, renewable energy needs to be considered within a portfolio of energy options. Therefore governments urgently need to develop and implement legislation that not only to meets the energy challenge, but also addresses the realities of climate change. Shell supports an array of incentives to encourage more renewable energy, including a national renewable portfolio standard.

Policy Coordination is needed

Addressing climate change requires an economy-wide approach and should be tackled within the context of maintaining economic growth and energy policy objectives. In addition to modifying consumer behaviours, action is required in all sectors including power generation, industry, transport and buildings. International coordination is needed and existing international systems should promote the reduction of greenhouse gases around the world. Shell believes the reduction of carbon anywhere in the world benefits the global climate and wise governments will design policies that will also encourage carbon reduction in other nations. Thus government actions need to address four main themes: energy policy framework, energy efficiency, carbon capture and storage and bio-energy.

Focused policies built on clear environmental objectives are preferable to using a tax system to deliver change. Taxation redirects capital through general government revenue and is not designed to deliver any specific objective other than a fiscal one. Thus, a suite of intelligent, coordinated climate change policies is needed rather than reliance on a single instrument such as a carbon tax. Shell believes that a workable cap-and-trade programme for carbon emissions from stationary sources like power plants is needed. A

cap-and-trade program should also recognise carbon dioxide (CO₂) that is captured and stored. In summary, a robust carbon market created by a cap-and-trade system offers large CO₂ emitters, such as the power and manufacturing sectors, an incentive to reduce emissions. Smaller CO₂ emitters are better served by introducing regulations and standards. Additionally, a simple high profile and credible target for renewables share of power generation best serves this sector.

A separate programme for reducing carbon emissions in the transportation sector should also be considered. In the experience of Shell, the carbon price that will prompt considerable change in the power sector will not be enough to encourage much change in the transportation sector. Shell also believes that the United States needs a separate programme for the transportation sector that prompts fuel makers and automakers to change their products and consumers to change their behaviour.

Inherent in the **policy and the advocacy** framework mentioned in the paragraphs above is the delivery of increased **energy efficiency**. Increasing energy efficiency is an important step towards reducing greenhouse gas emissions. A series of robust energy standards for buildings, appliances, etc. with incentives for retrofitting existing infrastructure in the commercial and domestic sectors can help close the world's energy efficiency gap. At present, energy efficiency is about half of what could be achieved by using only the best available technologies.

The Intergovernmental Panel on Climate Change has identified **CO₂ capture and storage technology** (CCS) as the most promising for the rapid reduction of global greenhouse gas (GHG) emissions up to a 55% reduction by 2100¹. As the bridge to a more sustainable energy system, CCS is therefore one of a number of key solutions for combating climate change. Shell also believes CCS to be a safe and proven technology as CO₂ capture is already practiced on a small-scale, while the technology for CO₂ storage is almost identical to that used by the oil and gas industry for decades - to store natural gas or increase oil production using CO₂ (enhanced oil recovery). In fact, many large natural underground 'stores' of CO₂ have already been discovered, trapped there for millions of years in exactly the same way as CO₂ storage.

Shell supports the principles of market mechanisms and emissions trading as powerful tools to assist in reducing CO₂ emissions at the lowest cost to society. We therefore consider it vital that CCS is recognized in the European Union's Emissions Trading Scheme (EU ETS), the project-based Clean Development Mechanism (CDM) under the Kyoto Protocol and the future development of other emerging emissions trading schemes. However, the short time horizons of the policy frameworks to date have created little certainty for long-term projects.

The decades-long timeframes necessary for CCS project financing, development and operation require long market signals. In order to guarantee the investment needed to

1. IPCC Special Report on Carbon Dioxide Capture and Storage, 2005

deploy CCS projects over the long term, we believe the current system of five-year allocations under the EU ETS provide insufficient certainty.

Government policy will play a decisive role in determining the future of CO₂ capture and storage. The significant additional investment involved to equip facilities with CCS means it will not be rolled out on a large scale without government action. At the moment, emission reductions achieved through capture and storage do not qualify for emission credits. Our appeal is for more effective project permitting and measures to reduce costs, for example through the European Technology Platform for Zero Emission Fossil Fuel Power Programme. These include granting carbon credits for captured CO₂, and setting emission targets beyond 2012 to create a stable long-term investment framework.

Within the **bio-energy** sector, it is important that policymakers first consider the role of biofuels in terms of their overall role in meeting policy objectives, local emissions, sustainability issues, cost implications and implications for fuel specifications. In addition, when considering the issue of market mechanisms, any legislation and regulation put in place to promote the use of biofuels should enable a free market approach that encourages and rewards biofuel components that deliver higher GHG savings at minimum costs. Competition amongst biofuels, based on a level playing field of GHG and energy certification, offers the best route to cost-effective, low-carbon fuels.

Conclusion

There is no 'quick' fix to solving climate change. Shell believes that a suite of climate change policies can support a combination of energy efficiency, renewable energies, and carbon capture and storage initiatives. All options will be needed to serve as an important bridging role while the world moves towards a sustainable energy system. Shell supports long-term targets for CO₂ reduction but also recognises the need for strong intermediate commitments against which progress can be measured. Looking beyond 2012, a post CDM framework can offer a programmatic way to reduce GHG emissions. It will require streamlining the governance and decision-making process as well as emphasising GHG reduction programmes promoting regional and trans-national projects as well as incentives for the transfer of clean technologies. The framework should also encourage the participation of international banking institutions. Encouraging them to invest in projects with a trans-national and regional approach will greatly enhance the outcomes needed by a post-2012 framework.

Thus, the appeal to governments is fourfold: first, to involve all major emitting countries and all sectors – not just industry – when formulating climate change and energy policy to avoid distorting competition; second, to develop stable, long-term GHG targets to allow companies to plan and invest; third, to use emissions trading systems more widely as a cost-effective way to manage GHGs from industry and to include reductions from CO₂ capture and storage in these schemes; and finally, governmental policies should promote the usage of alternative energy sources, enabling renewable energy to reach the

point where they can compete without further subsidies. On this basis, Shell believes government will best fulfil their duty to protect the future welfare of society against the challenges posed by climate change.