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Head of Unit, Mr Hans VAN STEEN
European Commission
Directorate General for Energy
Renewables and CCS policy (Unit C1)

7th February 2012

RE: DG Energy Renewable Strategy Consultation

Dear Mr Van Steen,

Shell welcomes the opportunity to respond to this consultation from DG Energy. We have set out our views regarding the key question areas in the remainder of this document for your consideration.

1. General policy approach

The EU's renewable energy approach post-2020 must be consistent with its climate mitigation policies and targets.

Shell considers a single Greenhouse Gas (GHG) emissions reduction target, delivered through policy instruments across different sectors of the economy, is the best way to delivering a competitive low-emissions economy for Europe.

Shell recognises the role that renewable energies can play in decarbonising the economy. We believe that GHG emission reduction targets are the most effective policy instrument to progress decarbonisation while encouraging investment in low carbon energy technologies including renewable energies. Multiple policy targets have the potential to undermine the effectiveness of EU CO_2 policies such as the EU ETS and impose greater costs on society for the same level of CO_2 abatement.

Shell advocates for a technology-neutral GHG emissions reduction approach in all sectors to decarbonise the economy. Technology support policies, which may also be required, should be designed so that they complement and support the main policy instrument delivering emissions reductions in each sector.

This will in turn ensure the deployment of the most cost-effective low-emissions technologies in each sector, minimising costs to the consumer.

Different parts of the economy will require different policy instruments to reduce GHG.

To achieve least-cost climate change mitigation, Shell recommends separate policy approaches consistent with the delivery of required decarbonisation targets, particularly:

- Market-based approaches with carbon pricing for large stationary emissions sources including power sources, chemical plants and refineries.
- A global market-based approach for the aviation and maritime sectors. For the road transport sector, measures to reduce CO_2 emissions that target the fuel supplier, the vehicle manufacturer and the consumer.
- In the commercial and domestic sectors, a series of effective energy efficiency standards for buildings and appliances.
- In the land use and agricultural sectors, sustainability protections to prevent destruction of sensitive ecosystems and high-carbon value stock lands through land stewardship and management ; and market-based approaches to increase deployment of best practices to mitigate Indirect Land Use Change (iLUC).

Road Transport sector

Carbon reductions and efficiency in the road transport sector should be driven by GHG reduction policies. Renewable energy targets, which are not directly linked to decarbonisation, can cause conflict with GHG reduction policies and increase the costs of decarbonisation for consumers.

Technology support measures should complement GHG reduction policies to ensure clear compliance and investment signals for the market. This has not been the case to date in the interaction of the Fuel Quality Directive (FQD) and the Renewable Energy Directive (RED).

In the upcoming reviews of the FQD, GHG incentives for lower carbon intensity biofuels should be carefully reviewed to stimulate their uptake. Shell suggests that the objectives of the two directives should be harmonised into one directive which sets and implements a suitable GHG emission reduction target and a price signal, whilst maintaining suitable sustainability criteria.

There may also be additional need for time-limited technology support policies for next generation biofuels and other alternative fuels and drive trains. This would provide greater clarity for low-carbon investments in this sector.

Power & Industrial sectors

The EU Emissions Trading System (ETS) is the flagship instrument within the EU energy and climate policy framework, and is designed to deliver emission reductions at lowest cost to the economy and provide the necessary price signal for the development of low-emissions technology.

A baseline correction should be implemented by setting aside and cancelling allowances from the Phase III auctions. The EU ETS design should also be changed to include an auction reserve price from Phase IV (starts in 2021) onwards.

This would send a long term price signal which in turn would lower the current risk associated with investments. These two measures will enable the EU to achieve the dual energy mix and emission goals that it has, but importantly still relying on the energy markets as the driver for change.

2. Financial support

Shell believes that a wide range of new technologies will be required to meet the 2°C climate challenge and that support mechanisms and incentives are needed to support the deployment of a diverse portfolio of technology options.

In any approach, policy makers should resist the temptation to pick technology winners but instead aim to ensure a level playing field. They should provide targeted subsidies for commercially immature technologies and associated enabling infrastructure, which are progressively reduced and then discontinued following a predetermined timeline or set of conditions.

Technology mandates may lead to an excessive emphasis on the rapid deployment of technologies, which may not be scalable and price competitive.

Shell believes that a typical technology support model consists of three stages of Discover & Develop, Demonstration and Deployment and our view of financial support differs across these phases:

- Discover & Develop:

Governments should reward innovation that can deliver cost-effective and environmentally sustainable solutions and not restrict technology options. Public support should be financed from general treasury.

- Demonstration:

Government funding and support of a greater magnitude is typically required for demonstrations at scale e.g. for carbon, capture and storage (CCS) and next generation biofuels and other innovative renewables. Support for demonstration lowers costs through learning. Subsidies should be structured relative to the CO_2 price.

- Deployment:

In general, Shell does not support deployment subsidies.

3. Grid integration of electricity from renewable energy sources

Gas-fired power stations, and their related infrastructure, will be one of the most important contributors to the integration of variable renewable energy. Shell recognises a significant thermal generation reserve capacity will need to be maintained to enable the expected growth in renewable electricity and to complement its intermittency. This should prove more cost-competitive than a massive built out of the transmission grid, potentially subject to planning difficulties.

Renewable electricity generators should be required to progressively enter into the market on a level playing field. They should sell their electricity into the market to meet location and time of production requirements as well as transparently contribute to the grid connection costs. Policymakers should also consider the need to introduce mechanisms such as a capacity remuneration mechanism or locational pricing in coordination with neighbouring markets, dependent on the national power generation mix.

4. Market integration

Current national support schemes expose renewable energies to market signals to various degrees. In many cases, these support schemes nevertheless result in parallel "systems" for conventional and for renewable generation which are largely unresponsive to each other.

Shell believes that renewable electricity should be made responsive to market signals through the introduction of price risk so that producers of renewable energy should operate without any aid and through a balancing of risk, whereby producers of renewable energy bear some scheduling and balancing responsibility towards Transmission System Operators (TSOs).

Renewable energy generators must be required to progressively enter into the market on a level playing field with all other generators. They should sell their production into the market as well as meet scheduling, nomination and balancing requirements as other energy generators do.

5. Renewables in Transport

Shell supports an integrated, "smarter mobility" approach to reduce transport CO_2 emissions with policy and regulations that drive coordinated action by four key stakeholders groups: fuel providers, vehicle and engine manufacturers, transport planners, and end-users.

In general, carbon reduction and efficiency improvements in the transport sector should be driven by GHG targets and not by technology or infrastructure mandates.

Shell believes that sustainable liquid biofuels will play an important role globally in reducing CO_2 in the road transport sector in the next two decades and beyond, a view which is supported by organisations such as the IPCC and the International Energy Agency (IEA).

Biofuels can be relatively easily accommodated in today's vehicle and liquid fuels distribution infrastructure, but challenges exist in Europe which will require careful design of regulatory mechanisms if biofuel blend levels and CO_2 targets are to be met without fuel disruption.

Biofuel requirements need to be consistent with the ability of the biofuels industry to sustainably produce the fuels, and compatible with vehicles and infrastructure to ensure adequate supplies of fuel for consumers.

Customer acceptance of biofuels, particularly at higher blend levels, is also a key issue that needs to be addressed by government policy makers working with industry partners, for instance on coordinated communications strategies accompanying industry roll-out.

In addition, there are significant challenges in the commercialization of tomorrow's advanced biofuels such as those using cellulosic feedstocks and "drop in" biofuels which are fully fungible with gasoline and diesel.

Many biofuels feedstock and process technologies that are promising at pilot scale are just beginning to be developed through the scale-up process.

Existing EU regulatory mechanisms require these technologies to compete with commercial scale mature first generation biofuels technologies. Some form of early incentive to recognise the development status of these technologies would greatly increase the rate and chances of success.

In coming decades, biofuels will also be a decarbonisation tool in the maritime and aviation sectors. Aviation bio-jet fuel is currently an expensive abatement option. Bio-jet is a co-product in the refining of biodiesel and for the foreseeable future bio-jet supply will be linked to biodiesel production for the road transport sector, where it is in heavy demand.

Consistent policy is needed to maintain investor confidence in biodiesel pathways in road transport as this will help to unlock biojet pathways in the future.

In general, governments should avoid efforts to direct bioenergy resources into one sector prematurely or at the expense of another as this may result in the sub-optimal allocation of bioenergy resources, potentially increasing costs and lowering CO_2 abatement potential.

A technology-neutral approach allows renewable and non-renewable alternative transport fuels such as biodiesel for rail or natural gas in road transport.

LNG can in some cases deliver lower well to wheel (WtW) CO_2 emissions – up to 20% for LNG in heavy duty applications under the right conditions – but it is important to consider performance over the full supply chain as this is not always the case.

There is also scope for rail transport to be electrified as well as increased use of biodiesel in engines.

6. Sustainability

The Intergovernmental Panel on Climate Change (IPCC), the world's leading scientific body on climate change, estimates bioenergy could sustainably provide up to a third of the world's energy demand by 2050 if the right government policies are introduced.[1]

Shell believes that bioenergy, independent of its end use (e.g. for the power sector or for transport biofuels), should have the same sustainability criteria applied, including the same sustainability policy approach for both Land Use Change (LUC) and Indirect Land Use Change (iLUC) effects.

Sustainability criteria to the maximum extent practicable should rely on existing sustainability criteria established by credible 3rd party multi-stakeholder organizations that have/are developing practical, effective certification programs and related land-use policies. For example, we believe there should be minimum social criteria in contract clauses against child labour and forced labour and also covering land rights issues. In the near term we would welcome a more comprehensive definition in the RED and FQD of sustainability.

Shell agrees with the European Commission that the issue of Indirect Land Use Change (iLUC) needs to be addressed. Shell recognises that there are iLUC effects associated with the growth of some feedstocks. However, along with a growing number of modelling experts, Shell believes that the

[1] Special Report on Renewable Energy Sources and Climate Change Mitigation http://www.ipcc-wg3.de/publications/special-reports/srren

available evidence for determining the significance of iLUC is not sufficiently advanced or robust to reliably establish iLUC impacts for regulatory purposes.

We would support a mechanism which aims to address iLUC effects on the ground, incentivising producers to engage in ILUC mitigation practices e.g. increasing yields, using degraded land, use of co-products.

This should be achieved as soon as possible through an existing policy mechanism, using the 29g CO_2eq/MJ in the RED which applies to feedstocks grown on heavily degraded lands; this credit could be applied more broadly to feedstocks which could demonstrate iLUC mitigation practices.

We also look forward to the Commission report on soil, air and water and will comment in due course on any emerging guidelines on these topics, as these also represent important issues for sustainability.

7. Technology development

At present, hydro-electric and gas storage are considered the best technologies to support the integration of variable renewable energy.

A key challenge in research and innovation will be system integration of greater penetration of variable renewable energy sources including the development of energy storage technologies.

Without such technologies, there are doubts that the EU power grid will be able to cope with fluctuating generation from a large increase in variable renewable energy generation. The gas system might also present technological opportunities to be partially decarbonised through hydrogen from surplus renewable energy production or through the injection of biogas.

Post-2020 the importance of carbon, capture and storage (CCS) as a means of reducing CO_2 emissions in the industrial sector will increase. Industry is already actively assessing the viability of CCS technology opportunities both individually, with government and through established CCS organisations such as the Zero Emissions Platform (ZEP).

The EU's Strategic Energy Technology (SET) plan should be reformed with the assistance of industrial and research partners. It should report a bi-annual basis on the progress of technologies versus their plans and versus the targets that have been set. Actions should be taken to cope with any delays or non-performance of technologies.

I hope these comments are helpful. If you require any further information, please do not hesitate to contact me on +32 2 256 75 08 or by email: ivan.martin@shell.com.

Yours sincerely

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Shell International