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FIRST WEBCAST: EUROPE, ASIA, AUSTRALASIA

User_name	Message	Response	Shell expert
	What do you think about the process for allocating allowances in the EU ETS?	Initially the EU chose to go for mainly free allocation which has worked well, although there has been much debate as to the impact of this in the power sector where the CO2 price has been passed through the value chain relatively easily. Nevertheless , much has been learned from the early phase and the Commission has now proposed a three-box approach	David
	If biomass is produced in the oceans and used to make non-fossil fuels does any one country gain through the associated emissions reduction?	Based on current technologies, this would likely take place directly offshore in any particular country. However, as is the case with, say, Brazilian biofuel, which is imported into a number of countries, the benefits would typically rest with the consuming nation.	David
	David thank you for sharing this information. As you would be aware the cap & trade discussions in Australia are the source of some heated debate at the present time. It is good to understand the global picture. Thx. Chris.		
	What happens when companies have 'emissions' for which there is no demand? i.e. everyone makes efforts to reduce CO2 and there is now excess CO2 in the market with no demand for it?	Hi Remi, I think what you are asking is what happens if there are excess CO2 allowances in the market. Governments should set the caps to provide companies with incentives to reduce their emissions. If all the companies can do so to the extent that there are excess emissions, then the cap needs to be lowered in the next phase of the scheme. We would expect governments to set stringent enough targets so that this won't happen. For example, the EU is planning a 20-30% cut in the cap for Phase III of its scheme.	Tanya
	It sounds to me like in cases where there is not strong enough competition , customers will end up paying for emissions , thus once there is sufficient demand , the 'supplier' can afford to buy enough 'emissions' knowing that the demand for the product will drive price up. In this sort of situation , will such a company be driven to focus on emissions reduction?	Hi Remi, Companies will focus on emissions reduction because they have to obtain allowances for their greenhouse gas emissions. It is the cost of emission allowances that creates an incentive to cut them. This cost will also be reflected in the prices of products that the companies sell. In most competitive markets emission allowance costs would be at least	Steven

In Australia , the federal government have proposed a carbon pollution reduction scheme (ETS) with a proportion of revenue from the scheme channelled back to industry to promote carbon reduction projects. How well placed are Shell's downstream assets to receive some of these funds and how will Shell lobby the government to receive a fair share?

What price of carbon is required to make CCS economically viable , based on Shell's current estimates and modelling , and when do we expect to commission CCS plants?

1)Has Shell a single strategy for CO2 trading. The largest issue to overcome is that all legislation is regional or national , there is no global legislation (yet?) This will result in a very inefficient trading system , not being very effective.

2)Does Shell consider Nuclear power production like other majors do?

partly passed through to product prices except when their is competition from imports from foreign, unregulated companies that do not have to obtain emission allowances. Hope this answers your question.

The Australian Government has released a Green Paper outlining its preferred policy approach. As Shell we have submitted a response to the Green Paper. Until the Government releases further details in the White Paper (due in December 2008) it is unclear the impact on downstream assets. Shell will continue to advocate an equitable outcome for all involved, working with Government and industry groups.

A number of studies have been done on CCS and the answer really depends on what phase of development of CCS we are looking at. For example, in the EU, studies have indicated that starting up this new industry and building the first facilities and all the associated infrastructure will require a CO2 price in the order of EUR 75 per tonne. However, as additional facilities are built an economy of scale benefit will come into play as less and less core infrastructure (pipelines, storage sites etc.) will be required for each new facility. As a result of this and in the longer term, it looks as if CCS can be delivered at a CO2 price of some EUR 40 per tonne.

We agree that it is not ideal to deliver emissions trading schemes on a piecemeal basis around the world. However, we also believe that in the absence of firm regulations for global emissions trading after 2012, the development of regional schemes have a significant role to play. They must be designed in order to allow linkage between them, which means that we must ensure that similar policies and standards are put in place for each scheme, in particular around monitoring and reporting, to ensure that one Allowance to emit 1tCO2 in one scheme is equivalent to that in another. With this in mind, Shell's position on emissions trading is a global position, and we advocate the same policy positions in regional/national schemes, in order to continue to push forward on delivering a single global emissions

Tzila

David

Toby

trading system.

That was a great overview , thanks. My: Question is about Shell and EU ETS:

To what extent are installations owned by Shell exposed to the EU ETS , and

Has Shell moved any of its installations as a result of carbon costs imposed by the EU ETS?

Many thanks ,

Dan Lewer (Carbon Retirement Ltd)

In the absence of open-sharing of emissions data between competitors in a given industry sector (due to competitive concerns) , can we establish realistic benchmarks for " best in class " performance? Without such benchmarks how can governments determine a fair basis for allocation of permits to a given sector(auctioned or otherwise)? Thanks.

1. What is currently being done to influence the policy of the US to develop the emissions trading system? A related: Question is: Based on the policies of the two potential US presidential candidates can we expect the ETS to develop in the next 4 years?

Dan, Shell has several installations, refineries and petrochemicals, in the EU that will be exposed. These installations represent significant investments in the EU and have product markets in both the EU and outside of the EU. We have no plans to move these installations as a result of EU - ETS however we will continue to discuss with the Commission on profit neutrality.

Stephen

There are a few ways of approaching this. There are consultancies which gather data independently to establish benchmarks which ensures that we do not share data with each other. The regulator can also gather data from companies and commission research to establish "best in class" and benchmarks for allocation. In the EU research is already under way by industry associations and governments such as UK government which are looking at how realistic benchmarks can be established. However best practice performance benchmarks are very complicated to develop and apply for policy. There is a very active debate in the US on the issue of emissions trading. This is taking place at both state and federal level and companies like Shell have been involved both directly and indirectly through proactive organisations such as USCAP which wants to see an emissions trading approach develop. Both presidential candidates have said that they will

Tanya

David

2. One of the slides talked about global competition issues , but compared only the EU , US and ME. Since a large % of imports to Western countries comes from the East (e.g. China) , how can China's competitive advantage be neutralized in the near future?

As I understand the Emmission Trade System gradually makes the costs of carbon dioxide emmision part of the cost of energy. For the allowances scheme the today's levels of emmissions are the starting point. Developed countries produce far more carbon dioxide than the developing countries. Will the devolping countries perceive the ETS as being unfair to them , and will this pose a risk to the system?

Thx for your clear presentstion.

How can compnies already be involved in the ETS system or CO2 reduction program in a simple way.

What is a good way for companies who are not in the ETS system yet to anticipate

introduce a cap-and-trade system in the USA. In addition, John McCain was the original supporter of the cap-and-trade bill that has been put forward twice in the US Senate (originally the McCain-Liebermann bill). I agree that China will also be important in the competitiveness issue and that steps will need to be taken to deal with this. In the short term this will most likely be dealt with in places such as the EU and Australia through free allocation to the affected industries, but I think that in the medium term we will see China starting to take commensurate action in its own economy as part of the implementation of a global deal on CO2 emissions. This will then level the playing field as a CO2 price develops in the Chinese economy as well."

Nolles, the broad framework governing global climate policy negotiations is based on a principle that would see industrial countries take the lead in implementing climate regulations in advance of developing countries. So for a while at least, emission trading systems in industrial countries would give developing countries a competitive edge. For most products and sectors this competitive difference would not be that decisive, but for some sectors it could matter a lot. These sectors are often referred as emissions intensive and trade exposed. Many proposed designs for emission trading systems provide special support to such exposed sectors.

Hi, regulators choose which types of companies that are involved in the ETS system, i.e. the large emission sources such as power generators and industrial facilities. The value in the emissions permits gives a simple incentive to reduce allowances. Companies will want to review their emissions profile and consider policies and investments to reduce their emissions. It is worth finding out what your emissions are right now. Not everyone will want to buy and sell emissions allowances: there are companies, like Shell, that offer this as a service to others. If you are not in an ETS system yet but expect to be in future, it is worth looking at websites of trade associations in the EU to find out what their experience has been. In

Steven

Tanya

How does the government involve Shell in decisions about allocation? Is the same process used across all EU countries?

the UK, the Carbon Trust has been established by the government to help companies reduce CO2. They can provide advice as well.

We have installations in several EU countries and these local installations would provide their emission details to the local authorities to therefore define the allocations in that trading period. This is a standard process under the current ETS phase 2 across EU countries

Stephen

Sorry I can't see or hear the web chat. Anyway , my question concerns Carbon mitigation schemes for the HC industry. In addition to the usual suspects (Solar , Wind , Hydro , Nuclear etc)what prospects does Shell see for 'algal biomass' capture of CO2? Especially in view of your Hawaii investment. Time frame? Long term impact on global CO2 levels? Viable technology?

Algae biomass looks like a useful technology for making biofuels on a large scale without impacting the food chain, and Shell is actively researching this technology. However, the production of algae biomass will have no impact on CO2 levels in the atmosphere, either up or down. This is because the CO2 comes from the biosphere and will be returned to it as the biofuel is used or where not used as the algae biomass decomposes as part of its natural life cycle.

David

Congratulations to Shell for creating open discussions like this. Very interesting overview.

Why should governments allow for Emissions Exposed Industries Credits (i.e. free allocations) when we re trying to create a unregulated market?

Hi, many proposed designs for emission trading systems provide for some special treatment of emission intensive and trade exposed sectors. Because these sectors are exposed to potential competition from unregulated , foreign producers , it is often proposed that these sectors receive a relative high proportion of their emission allowances for free to cushion them from the market distortions that arise from a patchwork of climate policies across countries.

Steven

Which industries will be effected by the ETS in the near future? Transportation , consumers , retail , high-tech?

Hi - right now, the EU ETS covers large emitters like power stations and refineries. Aviation will be included from 2012, the last year of Phase II. Other countries, e.g. Australia and New Zealand are planning to use ETS more widely to cover road transportation and domestic fuel use. The EU is looking at expansion to shipping and perhaps in the long term to road transport fuels. In the UK, a separate cap-and-trade scheme (the Carbon

Tanya

Is there a roll-out plan by the EU or other governmental bodies?

Thanks.

Reduction Commitment) has been set up which covers medium sized businesses such as hotels, supermarkets and large office buildings.

Meindert (Netherlands)

How are regulator's likely to allocate permits in the first few rounds? i.e.: Are they likely to be based on a site's historical performance , based on industry best practice or some other way? Also , do we expect permit allocations be made at a site level or to the company as a legal entity?

Where free allocation is the chosen method of distribution (vs. auctioning), the simplest and most pragmatic approach in the first round of allocation is to base it on historical emissions. This also helps industry adjust to the ETS in the early years. Later on we would expect auctioning to come into play in any case so free allocation would phase out. Where some free allocation remains for certain trade exposed industries, this could be based on a performance benchmark or continued allocation against a (rolling) historical baseline.

David

What is the probable scope of Clean Development Mechanism after 2012 and how are carbon markets and carbon financing institutions going to react post 2012

The CDM is likely to exist post-2012, with the EU ETS proposal for post-2012, Australian Green Paper on CPRS; New Zealand proposed ETS and noises from Japan and US all supporting import of Certified Emissions Reductions post-2012. CERs are the unit of emissions reduction generated under CDM. 1 CER = 1tCO₂e. There may be restrictions in terms of the types of technologies that can be used, for example reducing/removing the potential to use CERs from large industrial gas projects (HFC, N₂O). There may also be further restrictions on the absolute number of CERs that can be used by any installation/government. In a recent response to EU Proposed Directive on ETS post-2012, proposals have been put forward to have more relaxed restrictions on volumes of CERs to be used if they are sourced from particular 'gold-standard' projects (i.e. from particular geographies or technologies), although we believe

Toby

that fracturing of the CER market by creating different standards will damage the ability of the market to price CERs, and therefore CO₂, accurately. For most CDM projects that require the sale of CERs post-2012 on a forward basis today, a lack of clarity on the precise rules around use of CERs post-2012 reduces the interest from buyers, as they see it as an increased risk to buy CERs without being clear on where they can be used to meet targets. This is a concern, as it will undermine the ability of CDM to deliver emissions reductions as projects that need to lock in a revenue stream from forward sale of post-2012 CERs in order to be implemented may be unable to source buyers. It is imperative to get the post-2012 rules as clear as possible as soon as possible.

Which measures would you suggest to tackle the "first mover disadvantage" (loss of competitiveness versus rest of the world carbon leakage) of the EU implementing tough caps before others and which one do you think is more likely to succeed in case it is applied?

There are three broad approaches to dealing with this issue; David

1. Implementation of commensurate action in certain economies;
2. A trade agreement between economies to counter the impact of the CO₂ price - e.g. a voluntary export tax in the exporting economy that is competing with the EU;
3. Compensation within the EU

Whilst all three are possible solutions typically through continued free allocation. The third approach is likely to be used for the time being. The first and second approaches may figure in the international agreement in some way possibly as a "sectoral approach".

You mentioned that CCS would be critical to the viability of emission trading systems. Why is that? So long as we use the right cap on emissions, shouldn't the market

I agree that the market will choose, but our own scenario analysis of the future energy system looking forward shows that the depth of CO₂ reductions

David

determine which technologies or changes in consumption are necessary to deliver emission reductions? thanks

required cannot be achieved just through the application of renewables. Fossil fuels will continue to be used for much of this century, particularly coal for power generation, just to meet overall energy demand. Therefore, CCS will be needed to manage these emissions.

What is the position of Shell with respect to the changing energy mix (and reduce the CO2 emitted) in the transport sector (reducing the current 95% liquid hydrocarbon part to include more battery powered vehicles)?

Hi, we recognise that in order to reduce emissions from the transport sector there will need to be both significant gains in vehicle efficiency and a gradual shift towards low carbon fuels. These low carbon fuels could be advanced generation bio-fuel (i.e. those sustainable biofuels that do not rely on or displace food crops) or on vehicle electrification. This electrification could take the form of batteries or fuel cells. The jury is still out on which one of these technology pathways will prevail. We follow closely technology developments in each of these areas. We also have a significant involvement in bio-fuel including development of advanced bio-fuels and work closely with partners in other industries on vehicle efficiency and electrification.

Steven

What is Shell's opinion on the promising combination of carbon capture and storage (CCS), solar and wind power for reducing CO2 emissions in the road transport sector?

There is scope to reduce emissions in the road transport sector by shifting more to electricity and hydrogen as the vehicle fuel. In these cases, technologies such as CCS, wind and solar could come into play. But much has to happen in the area of vehicle technology for this shift to take place. CCS may also contribute to emission reductions in a biofuel based transport system. Many biofuel production routes emit (bio) CO2, which could be captured and stored. This would actually mean that a fuel is produced with an overall negative CO2 footprint - i.e. taking bio-CO2 (from the biosphere) and returning it underground.

David

What is the specific influence of local governments (especially in EU) to decide how to implement the ETS extensions (e.g. in Germany, France and Benelux) for which companies?

The local (assume member states) governments are fully involved in the ETS extension process e.g. Phase 3, through their membership of the European Council and their MEPs who will be looking out for the interests and impact on their local companies as well as trying to conclude an implementable agreement within the time frame of the legislative processes.

Stephen

On a long term basis: Do you think that the mentality behind CO2 emission trading , e.g. forcing the industry to reduce CO2 emissions from the top to bottom , will damage both our national and international markets? Do you think that forced technological developments and induced implementations will bring the advancement?

In answer to first point - no - in order to deliver long-term behavioural shifts (as individuals, industries and governments) to address rising levels of CO2, the price of CO2 must ultimately be priced in across the global economy. Cap and Trade allows the market to filter a CO2 price into the economy, allowing companies to make decisions on how to allocate shareholder capital effectively when deciding either how to MAKE emissions reductions or BUY Allowances (or even sell resulting surplus!). This is the most parsimonious way to allow national and international markets to continue to operate. We also note that there may be significant commercial opportunities arising for companies able to generate emissions reductions, or develop new technologies. In answer to second point - yes - we do think that Cap and Trade encourages companies to make technological developments in the most economically efficient manner across the globe and we are already seeing roll out of low-CO2 technologies as a result of the cap and trade regulations that already exist. Toby

Hello David , thank you for taking the time to make this webcast. I have an environmental engineering background , but my query relates to the internationalization of an emissions trading market. Do you believe this is a role that should be undertaken by the WTO? To prevent artificial market distortions due to non-regulated markets. Also , are you concerned about the involvement of market opportunists , whose aim is to seek profit and potentially disrupt the function and primary objective of an ETS market? With regard to the actual dilemma of a changing climate , should ETS revenue fall short of funding adaptation projects , how would this be reflected in an ETS market?

Hi, you have raised a number of important points. Let me try to answer them in turn. Steven

On the internationalisation of the carbon market , it is likely that the emission trading systems in industrial countries would have provisions that seek to minimise the market distortions that would arise from competition by foreign , unregulated producers. These provisions usually take the form of a relatively high free allowance allocation to emission-intensive, trade exposed sector.

The best protection against manipulation of the secondary (or primary market) for emission allowances to design the system to make sure that these markets are liquid and transparent. Given the potential size of these markets, there should be of

sufficient scale to make sure they are deep and liquid. Regarding the use of proceeds from the sale of emission allowances by governments, we think that most of these revenues should be returned to consumers who are indirectly paying for them through higher product prices. Funding of adaption projects should largely be done through normal government budget processes rather than the earmarking proceeds from allowance sales.

SECOND WEBCAST: EUROPE, AMERICAS

User_name	Message	Response	Shell expert
Steve	I'm curious as to your view of the different presidential platforms as it relates to climate change and emissions trading. What are the pro's and con's of each platform?	Hi, What is most important is that both Presidential candidates have recognised the critical importance of responding to the challenge climate change and of regulating emissions. It is also important that both candidates have put emission trading systems at the centre of their regulatory proposals.	Steven
Scott Lorey	David, How do believe regional programs, such the the New York-New England Regional Greenhouse Gas Initiative (RGGI), will impact the need for national and international programs. Scott	Scott, Our preference is to see large national cap-and-trade systems, such as the EU-ETS here in Europe. In fact the EU-ETS superseded a local Danish system and a UK system (which overran into the EU-ETS time-frame by two years). With regards to the USA, I think that as long as the architecture of these regional systems is open or that a federal system recognises them for a given time such that participants can stay in the regional one before moving over to the federal one, then regional are a useful starter to a more widespread approach. David	David
charl42	You seem to favour an approach based on initial "free allocation" to evolve into "full auctioning" eventually. Can you explain with a bit more detail, or by simplified example, how this type of distribution system can evolve	Hi, In broad terms, the balance between free allocation	Steven

in real world situation-- politically, economically?

and auctioning should be guided by the extent to which the cost of emission allowances can be passed through to product prices. This pass through is desirable because consumers then face some of the environmental costs of their choices. However, it may take time for competition to generate the pass through effect.

This is why we advocate a gradual transition towards auctioning in general. Also, for those sectors that are emission intensive and trade exposed we would also advocate a high share of free allowance allocation until foreign producers face similar climate regulation.

Canada

How can emerging ETS in North America, elsewhere globally, ensure that emissions traded under their schemes are fungible under other schemes?

A key objective in creating a global GHG market is to link different emissions management approaches together, thus establishing a single CO2 cost and creating equitable access to the prevailing lowest cost abatement opportunities. In order to link, similar structural elements must exist. Important considerations include:

David

- Pricing measures -- Price caps and price floors could undermine linking. A price ceiling in one system would effectively flow through to other systems once met, possibly necessitating the need for a trading gateway. This could further complicate system design and operation.

- Penalties -- The penalties for non-compliance must be broadly similar in the linked systems. Each must require environmental make-up of any missed target (i.e. no buy out) in the next compliance period and any fines should be at a similar level.

- Banking and Borrowing -- Provisions for banking and borrowing should be similarly structured. Limits in one system would be bypassed by trading into a system where any limit in place had not been reached.

- Monitoring and Reporting -- The monitoring and

reporting guidelines in each trading system should follow similar protocols.

- Linkage and Offset Policies -- Ideally, linked systems should not impose any limits on trade flow (e.g. a limit on the percentage from linked systems that may be offered for compliance).

- Legal - An international set of accounting and verification principles, and common contracts.

- Different approaches to allocation can exist across linked systems. Grandfathering may be offered in one system vs. auctioning in another. The allocation process does not directly impact trading and price behaviour.

The decision to link them is based upon convergence of the CO2 prices within the respective markets.

Tom

David, thanks for a very interesting overview.

What do you see as the relative merits and demerits of an "Emissions Trading System" versus a "Carbon Tax" in creating incentives for GHG reduction? Which do you prefer & why? Thanks

The aim is to ensure an environmental result - namely CO2 reductions to an acceptable level. Cap and Trade allows that environmental objective to be achieved accurately, although the price of CO2 will not be known in advance of setting the regulation. A tax will give a fixed price for CO2, but the environmental objective may not be met.

Toby

We therefore prefer Cap and Trade, because we support the environmental objective being achieved. Additionally, we believe cap and trade is the most efficient way of adding a CO2 price into the global economy, and ensuring that the cheapest reductions are made first.

Canada

What role can projects surrounding projects to deliver Reduced Emissions from Deforestation and Degradation in developing nations play under an ETS?

There is a valid role in that a CO2 price can be a real catalyst for action in the land use sector (agriculture, forestry etc.). The challenge is to ensure that projects are clearly defined and that the emission reductions are measurable, reportable and verifiable. A second consideration is to ensure that there is sufficient scale within the cap-and-trade system to take in what could be a very large flow of credits from REDD projects - I

David

nick.caumanns	<p>David, do you think the US will adopt the system of distributing allowances to various manufacturing sectors which importers of various products will then have to purchase from those US manufacturers in order to comply with import laws? ie is it potentially a way for a government to cause importers to effectively pay for US manufacturers to upgrade their plants...as happened in the case of unleaded fuel and is currently happening with refrigerants?</p>	<p>think this then plays back to the first point about very clearly defined projects.</p>	Steven
		<p>Hi,</p> <p>The so-called problem of "carbon leakage" features prominently in policy debates on design of emission trading systems. Carbon leakage occurs when domestic producers face competition from foreign producers that do not face a similar emissions constraint.</p>	
		<p>The most widely proposed solution to this problem would be to provide emission intensive, trade exposed sectors with a relatively high share of free emission allowances, linked to their production. This helps to keep down the cost differences between domestic and foreign firms until more countries put in place emission trading systems.</p>	
Bloomberg	<p>Do you think that projects for tar sands development in Canada will be unprofitable with carbon capture limitations?</p>	<p>The profitability of the Oil Sands operations in Canada are directly related to oil price scenario and energy costs (as gas is used in the process). We don't comment specifically about the oil price and oil price scenarios, although we can tell you that include CO2 cost in our projects planning. We are investigating a carbon capture project called Quest which would involve capturing CO2 at Scotford Ugrader processing units and transporting it to mature oil fields or U/G storage for sequestration, although its too early to comment on how they will impact future profitability of operations.</p>	Gustavo
ccvanya89	<p>How does Shell view regional carbon trading markets in the US in reference to a national program? Are they learning opportunities attracting more financial players as a result or will likely be focused on compliance buying until a national market is created?</p>	<p>I just answered an earlier question on this so if you look down the list you will find it. In the EU two national systems preceded the EU-ETS and both provided useful learning for the eventual implementation of the broader based EU-ETS. But both really operated in compliance mode only and did</p>	David

		not attract the broader financial market. Of course, at the time they were running the market knew that the EU-ETS was on its way.	
Andrew	Should CCS projects be able to qualify for emissions credits under the CDM?	Yes. For example, China, India and South Africa are using more than 80% of the total coal consumption in developing countries; much of this is for electricity consumption. CCS will be an important technology for them to help address CO2 emissions. A CDM funding mechanism to help them adopt this technology will need to be different than for developed countries. An approach that allows CCS projects to create tradeable CO2 certificates for CO2 stored underground will provide one of the necessary financing mechanisms to allow this technology to be deployed in developing countries.	Tanya
Bloomberg	Hello. Could you tell me what carbon price dynamic will be in the future? Also how I can access archives from the morning session?	Easy part first: in a couple of days, the archive from the morning session will be viewable on http://www.shelldialogues.com/emissions-trading Now, carbon price dynamics - currently, the price of CO2 is driven by many factors - fundamental supply and demand is initially based on the targets that are set by governments vs predicted emissions for the period. However, as we enter a trading period, many factors will influence CO2 supply and demand, for example economic growth (or decline), weather patterns (e.g. if it is windy in Spain, coal fired generation may be offset by wind power), gas vs coal prices, links to other emissions trading schemes and so on. These are all affecting the CO2 price today in EU.	Toby
Andrew	Why do you include Switzerland and Iceland in your EU ETS map? They're not included are they?	You are correct - so I've been too quick with the Fill tool on PowerPoint.	David
Kent Satterlee	Why would we believe that US consumers would support this approach when it will increase the cost of energy and essentially all commodities which require energy?	Hi,	Steven

		The benefit of reducing greenhouse gas emissions is that we would significantly lower the risks of significantly climate change. Significant reductions can be achieved through energy efficiency gains, which can save consumers money. However, other steps will likely lead to higher consumers costs, including for low carbon electricity and mobility.	
ccvanya89	How likely it is for the US scheme to link into the EU ETS and others given the US clearly wants to lead on its own plan?	Hi, see an answer above for the criteria that are needed to allow linking. The Lieberman-Warner Bill has provisions to allow for linking. It is in the interests of the USA to allow linking so that the lowest cost ways to reduce CO2 can be found.	Tanya
SGiacomo	David, How can "ownership" of carbon emissions or credits be established in a complex transaction where multiple parties, sectors and nations are involved? For example, a KLM flight from Amsterdam to Lagos. Thanks	This question was posed in this morning's web-cast and I answered it there - the full transcript will be back up within a couple of days. But ownership is defined by the legislation that creates the compliance requirement - so in the example you gave KLM would be the owner under the proposals currently being considered in the EU.	David
R Armstead	David, how is international shipping going to be effected by a cap and trade system? In addition to this question, can the entire supply chain of a good fall under a C&T system?	Hi, International shipping is one sector that is being considered for the EU ETS. To date, it has not been included in any cap and trade scheme. There are bodies looking at whether this can be done, i.e. by the International Maritime Organisation. It is possible for the entire supply chain to fall under a C&T scheme - it is being considered in the USA.	Tanya
Deborah	David, I'm curious about Shell's position on the RATE OF CHANGE that's occurring in the world today, in order to make sustainable policy decisions possible. Does Shell feel that change is occurring fast enough in the world to keep global warming from seriously impacting our economies or our way of life? Or is it just impossible to know at this point?	At this point in time the necessary change is not taking place around the world. Emissions are continuing to rise and in the last few years that rise has been accelerating, mainly due to a resurgence in coal use. In addition, we are not improving our energy efficiency fast enough either. So there is plenty more that needs to happen.	David
Christos	How do you envision a mechanism for governments using CO2 taxes from auctioned allowances to invest in	One of the principles we support is of "Profit-neutrality" which means allowances are allocated free	Stephen

renewable energy. Will this be through R&D spending or direct technology subsidies?

or auctioned depending on the ability of the sector to recover the marginal allowance cost from the consumer. Full free allocation would take place when the product price is driven by other factors, e.g. international competition, whereas full auctioning would take place when the product price fully embeds the marginal cost of an allowance.

“Profit neutrality” pertains to the government as well, in that they should not use the trading system to further boost revenue. Auction revenue has come indirectly from the consumer and should therefore be returned to them, typically through the tax system. Governments, who receive revenues from auctioned allowances, are also encouraged to further support the development of technologies whose objective is for energy efficiency, CO2 reduction technologies e.g. CCS. Governments have various mechanisms in place to direct the funding to meet these objectives and a wide range of institutions and organisations who would be capable to respond to these requests.

Andrew

The UK Government points to the fact that UK CO2 emissions are below their 1990 level. However it can be argued that CO2 emissions have simply been exported from developed countries, chiefly to China, where many manufactured goods are now exported. Therefore, why shouldn't EU importers be required to purchase EU allowances under the emissions trading system? This could even be an efficient way to include emissions from transportation.

Hi,

Steven

You are right to point out that part of the reduction in UK emissions has resulted from the shift in production away from manufacturing and towards services that reflects on ongoing process of structural change found in most industrialised countries. You are also right to suggest that uneven climate regulation between countries can give the unregulated producers a competitive edge. However, for many -- but not all -- sectors emissions costs are a relatively small share of overall production costs.

For those sectors where emissions costs are relatively large, some additional policy measures are required to even out the competitive playing field. One approach could be the border adjustment that you

		propose. Another is to give emission intensive trade, exposed sectors a relatively high free allocation of free allowances.	
Christybgj	Please talk about "grandfathering" in allowable emissions. It seems to be a point of disagreement.	Grandfathering is a word that describes the allocation of emission allowances for free based on historical emission levels for a given facility. It is a useful way to kick-start an emissions trading system, but is not a sustainable approach. As the CO2 price is passed down the value chain into the goods and services provided by the emitter, auctioning will become the main method of allowance distribution.	David
LM Todd	David, thanks for this overview. You specifically discuss ETS for industrial bodies and state the system is not amenable to CO2 reduction in transportation. What is your reasoning? Could vehicle fleets participate in such a program?	Hi, The reason why we don't think C&T schemes work well for personal transportation, i.e. car users, is that there won't be the link between the holder of the allowance (e.g. the fuel supplier) and the person making the decision about whether to buy allowances or make reductions in CO2 emissions (the car owner). This break in the "make-or-buy" decision making process means that C&T may not be that effective in this sector. Instead, we think policies aimed at car owners, car makers and fuel suppliers would be more effective. The owner of a vehicle fleet would both hold allowances and make decisions about whether to invest in CO2 reductions, so vehicle fleets could participate in an ETS.	Tanya
JanPaul	Should the rules of the WTO (World Trade Organisation) be changed in such a way that products from countries that have not implemented an ETS can be imposed by a "CO2 import tax" ?	Hi, This is potentially one way forward, but the process of changing WTO rules would likely be very protracted and unlikely to deliver a solution in a timely manner.	Steven
Ufuk	Who will pay for the carbon credits and what will be the price for CO2 in 2020 and in 2050? Thanks!	Currently some Allowances are given out for free by governments, and others are held back and will be sold to participants via auctions. The proportion that is auctioned will increase in the future, and proposed schemes, such as those in US (regional), Australia	Toby

and New Zealand will look to possibly auction 100%. However, this is not the whole picture - under Kyoto Protocol governments will have to meet targets, which may mean that in some cases governments are accessing the market to buy CO2 directly, either from other governments or directly from companies. So you can, in some cases, see companies competing with governments to purchase CO2 from emissions reduction projects.

2020 and 2050... I would love to know what the price will be per tCO2e! This is obviously difficult to estimate given the lack of clarity on the regulatory environment currently. However, we can say that the CO2 price in EU (for 2012) has peaked north of EUR32 earlier this year, and estimations for price out to 2020 are currently around EUR40, although analysts' views vary widely. We currently believe that higher prices will be needed to make some of the larger projects economically viable, for example CCS is likely to need a price >EUR40. As this will be a key technology for delivering lower CO2, this type of large project will have significant impact on CO2 price going out to 2020 and beyond. Going to 2050 - who knows? Too many variables to make a prediction of any meaning for CO2 price.

Paul Lynch	Who should be responsible for ensuring that emitters really make the carbon reductions required to stay within their allocation in a cap and trade scheme?	The competent authority in each local government who receives the details of each installations emissions would be responsible to check level against the cap. They have the capability to visit / audit installations if required and they will also have an increasing database of historical emissions to be able to cross check.	Stephen
Estephan	The first phase of the EU-ETS led to severe underpricing and failure to meet targets in large part because of overallocation and free allowances. As a result of this lesson learned many RGGI states are auctioning all or	Just to be clear first up, the EU-ETS did not fail to meet targets, end of period emissions were at or below the targeted levels. That being said, there was an over supply of allowances in the system.	David

most of their allowances. Why not let the market speak in establishing the initial price through auctioning from the very beginning?

What has been recognised in the RGGI system, partly as a result of learning in the EU-ETS, is that the power sector can pass the CO2 price along the value chain faster than many other sectors, which means that there is a case for auctioning allowances at a much earlier stage in the life of the system. However, this is not true for all sectors. Where it takes longer to pass through the CO2 price or it isn't possible then the case for auctioning is reduced or isn't there at all.

rdinnage

David,
Do you have a view on the import limits for Phase III of the EU ETS on UN project-based credits [CERs/ERUs]? Should the import limits be raised from the current average of 14%?

We support the increase/removal of import limits on CERs/ERUs, as we believe that these mechanisms encourage the cheapest reductions to be made across the global economy.

Toby

estephan

How does a global company such as Shell deal with its emissions being regulated in Europe and not regulated at most points of extraction or in the US? Does this pose coordination and accounting difficulties?

Hi, In short, no. Shell considers that a key policy to address climate change will be the development of C&T schemes in all countries where we operate. So our expectation is that even where we are not currently regulated, we will be in the future. Shell is used to coordinating internally the approach to many different regulatory and environmental requirements across the 110 countries in which we operate.

Tanya

Kent Satterlee

Carbon cap and trade legislation must be accomplished country by country. Why would we expect the US government to implement a policy which increases cost to the consumer which would have no potential environmental benefit unless all countries participate in CO2 reductions?

Hi,

The way forward on this will require a high degree of global cooperation. The broad principle of the UN framework that governs the international negotiations is shared but differentiated responsibilities. In simple terms, this means that industrial countries would move first to regulate and reduce emissions and that developing countries would follow in time consistent with their development progress. The challenge will be to create a framework that makes this sequence of steps credible.

Steven

Will Bigelow

How are CO2 emissions or credits quantified? Is there a governing body that certifies a factory's or project's consumption/reduction each year?

In the initial phase of a scheme each installation would have to have its emissions verified by the

Stephen

		<p>competent authority in the country. Annually the factory would have to report its emissions to the same authority that has the capability to visit / audit.</p>	
JOSE	<p>From Shell Venezuela. Doubling the concentration of CO2 in a greenhouse can increase tomato production by 25%, and in the Netherlands growers run their natural gas heaters in summer expressly to boost CO2 levels. In 2005 the Pernis refinery, spotting the opportunity to turn their CO2 into a useful resource, began capturing the CO2 produced from its hydrogen-making plant for supply to local farmers. Question: How feasible it is to introduce this project, or similar ones, in a largest scale?.</p>	<p>This is a niche opportunity for using CO2 and is not really scalable to the very large reduction requirements needed to stabilise atmospheric CO2 at an acceptable level. That being said, this project still makes a difference in our Pernis Refinery and for the growers in the Rotterdam area. If such opportunities exist we should take them, but the really big reductions lie with technologies such as CCS.</p>	David
Christybg	<p>Back to the subject of giving away allowances vs. auctioning (initially). Do you think that auctioning will protect consumers by ensuring that the value generated by limiting global warming pollution goes to people and not polluters? Is it true that the European experience with emissions trading has shown that regulated entities will charge consumers the value of an allowance whenever possible, regardless of how it was acquired, leading to massive windfalls at the expense of consumers?</p>	<p>Hi, We think that there should be a gradual transition towards auctioning for the initial allocation of allowances for the reasons you set out. We also think that proceeds from auctioning should be returned to consumers, preferably through reduction in other taxes. For example, the proceeds could be used to increase the income tax exemption or lower the basic rate of income tax. This approach would target support for low income households.</p>	Steven
Stafets	<p>You mentioned that carbon trading would not be an efficient process for real estate. Couldn't a corporate real estate portfolio strategies be integrated into the overall goal of a corporation for reducing it's carbon footprint? Couldn't the carbon savings within this real estate portfolio be traded on the market?</p>	<p>Hello, Shell is working now to find ways to reduce its carbon footprint across its real estate portfolio as part of our CO2 strategy. The question is whether a C&T scheme is the best regulatory approach to incentivise this. Most of emissions from real estate are associated with electricity use. Electricity is already covered by emissions trading in the EU. Other approaches to real estate can be strengthening building and appliance energy efficiency standards. The EU has introduced legislation that requires building owners to have an energy efficiency rating done on new or refurbished buildings, to encourage</p>	Tanya

		best practice.	
Ufuk	David. You spoke about Global Competition Issues. If other regions do not introduce a trading scheme or end up with a different scheme which has a different price as a result, the European companies will have a disadvantage. So what is your suggestion to prevent this from happening? Will you sell all of your refineries in Europe and move them to some other "cheaper" region? Will the European workers have to worry for their jobs? Thanks a lot.	Hi, For emission intensive, trade exposed sectors such as refining we would advocate that these sectors be given a relatively high share of their allowances for free until the foreign producers with whom they compete face a similar regulation.	Steven
2005rd	David, thanks for your presentation, following which I have two questions: 1) How is our advocacy to governments (which ones?) linked with clear milestones in the run-up to Copenhagen in Dec 2009? 2) How are the energy industries co-ordinating their message to governments in order to achieve convergence of views? (ie, energy providers on one hand and main industrial emitters, on the other hand, the latter being concerned with maintaining their competitiveness)	We are working at both national and international level to achieve our advocacy goals. At the national level this includes entering into the national discussion on tools such as emissions trading, which we are doing in the USA, EU, Australia and NZ. At the international level, we are seeking different objectives, such as the recognition of CCS within the Clean Development Mechanism and the use of sectoral approaches as a pathway to real action in developing countries. We work through organisations such as the World Business Council for Sustainable Development and the International Emissions Trading Association to take our views into forums such as the UNFCCC. Through such associations, we have to reach a shared view with a wide variety of industries.	David
Andrew	Should emission performance standards be introduced for power stations?	No, we think emissions trading is the better approach to manage emissions in the large industrial and power generation sectors.	David
LizaB	How does something like the Chicago Climate Exchange pay into this process?	CCX and other Exchanges provide a pooling of liquidity in a market as many companies may be looking at and trading on the same exchange. They allow companies to manage credit exposure/ contractual obligations with a single entity - the exchange - something which is quite attractive in today's economic climate. Also, the price of CO2 on an exchange is transparent, which helps give	Toby

David	I think you need to be a lot clearer in spelling out the potential savings of ETS to consumers, if you are really going to get the political support you need.	confidence in the current market price.	Steven
Jill Feblowitz	I have been looking a information technology needed to support carbon trading. From what I've learned, in markets such as the EU ETS, existing energy trading and risk management systems have modules for transacting that support carbon trading. There is still a very low penetration of analytics that allow a company to gauge its position in the carbon market. At this point, most of the management and reconciliation of carbon emissions is done through environmental health and safety applications. Reconciliation is done on an annual basis. But I haven't seen any systems so far that take into account carbon offsets. Do you foresee that there will be more frequent reconciliation? Or that companies that participate in the carbon market will need to have real-time visibility to their carbon position?	<p data-bbox="1134 162 1186 186">Hi,</p> <p data-bbox="1134 235 1890 560">Political support for climate policies must come from the widely shared understanding that uncontrolled greenhouse gas emissions pose an unacceptable risk to the earth's climate and that reducing emissions will be costly. It would be misleading to say that an ETS would lower costs to consumers. That being said, the schemes can be designed in such a way so as to recycle much of the emission allowance costs back to consumers through tax cuts and other measures.</p> <p data-bbox="1134 592 1890 771">The range of tools available to manage emissions and compliance within an ETS is growing rapidly. In addition, many companies have developed in-house software to do this job, which of course you wouldn't see in the market.</p> <p data-bbox="1134 779 1890 1177">I don't think that companies will need real time visibility of emissions, but as the market grows and becomes more complex, the traders will need increasingly up-to-date access to expected changes in emissions profiles - e.g. the timing of a shutdown in a refinery. A decision to move it from December to January by the refinery manager could be quite important from a compliance and market exposure perspective and the sooner the traders know about this the better. So good information systems and models will be important.</p>	David
Neno	The absence of federal greenhouse gas (GHG) regulation in the United States has not diminished the importance of businesses assessing their impact on global climate change. Growing concern among shareholder and investor groups has motivated many organizations to quantify their greenhouse (GHG) emissions and commit to GHG reductions. Accurate quantification and detailed documentation of GHG emissions is critical for these programs to succeed, yet	We have comprehensive management information systems which we use to maintain records of emissions from our facilities. These systems enable us to provide consolidated data externally in the Shell Sustainability Report and the Carbon Disclosure Project both of which are available online	Stephen

companies are doing very little to demonstrate they are serious about it. A robust computing platforms and databases are still in its infancy and most companies relay on spreadsheets to manage GHG data. Establishing a comprehensive corporate GHG inventory is an important first step in developing a climate change strategy. Due to the lack of investment in database technologies, conducting even a baseline corporate GHG inventory can be a challenging process, particularly with respect to data gathering and data validation. Empirical formulas currently used will simpl not work on the long term. Current data management chaos need to be addressed. Can you comment what Shell is doing on the subject of information management when it comes to organizing and managing its GHG data?

Christybg

To follow-up on your answer to estephan's question re: first phase of the EU-ETS, can you please give some examples from your answer: "Where it takes longer to pass through the CO2 price or it isn't possible then the case for auctioning is reduced or isn't there at all."

You said in your videocast that the price travels rapidly through the electricity sector and that consumers were impacted immediately. But other markets could be slow. What are examples of other markets? And why do you think it is slow?

fwitchger

Why is Shell against a price cap and price floor? In the early phases of a stringent C&T/ETS, sustained high allowance prices, with a high cost pass through to consumers would likely create backlash against the policy. Wouldn't it be important to set some reasonable bounds on CO2 prices?

Hi,

Steven

There are many empirical studies on precisely this issue. It appears from these studies that the cost pass through was relatively quick and complete in the electric power sector. But even on this point there is a range of findings. For other sectors, there has yet to be a significant body of evidence developed, but work is underway.

Our view is based on both an understanding of the basic economic principles involved and a cautious approach towards waiting for further evidence to guide the evolution of policy in this area.

The concern is that a price cap or price floor will not allow the market to discover the correct price for CO2 within a scheme, and will prevent the environmental objective from being achieved. The focus needs to be on ensuring that targets and allocations are set appropriately, with 'safety valves' included by allowing the scheme to link to other schemes around the world, or to allow the importing of offsets, thereby potentially giving access to buyers to cheaper reductions elsewhere.

Toby

David	Hi David The 'scientific' and economic benefits of the system are neatly explained in your presentation. But - as Steve hints in the first question above - the problem is really a political one. At the TUC conference yesterday, speaker after speaker demanded a Windfall Tax on the oil companies. How can you make Emissions Trading equally sexy, how can we dramatise the benefits to the man in the street, who would - quite frankly - prefer an energy rebate?	Good question - in terms of getting the man on the street interested, I don't think they are really going to be interested until a broad international agreement is hammered out. Just look at how much media attention Bali drew at end 2007. It is important to continue to keep profile on these large scale political events, and to focus on some of the publicly palatable benefits such as CDM investments.	Toby
Christybgj	If, as you stated in the videocast, that offsets are an important part of an ETS - how effective do you think offsets are without an ETS in place?	Not very - they simply become a voluntary tool, which will deliver some emissions reductions, but will not deliver the wholesale investment in offsetting projects that arises when targets are placed on companies or governments.	Toby