ESTA Presentation 19 May 2011

For the purposes of this talk, I am going to assume the scientific case for global warming and climate change has been made, that manmade or released greenhouse gases (GHGs) are primarily responsible and that the thrust of EU policy is to dramatically reduce those emissions within a relatively short period of time in order to create a low carbon economy and society.

I can't resist however, adding the heretical thought that geology tells us we have had huge climate change and temperature variation in the past which must have had causes other than manmade, because they were so long ago. Nor can I resist posing the question; what if we achieve these extremely ambitious targets for CO2 emissions to be reduced by 80% within 40 years, and find it doesn't make a blind bit of difference to global warming?

I will say that I have a strong belief in the capacity of mankind to adapt and survive in the face of huge environmental challenges, or any other sociological or technological challenges thrown at us or even created by us for that matter.

Ok, so the first step in considering how to reach this Eldorado of a low carbon economy is to remind ourselves of the present situation, so as to get a measure of the challenge we face.

We consume a lot of energy and the world has increased its consumption significantly over recent decades. The pattern of where it is being consumed around the world has changed significantly as well, with OECD countries taking a smaller share, while the BRICS countries and developing countries are taking a greater share.

Next, we must realise that at present, we rely on fossil carbon fuels for two thirds of world energy consumption. So, it will be quite some achievement if we can move from that position to this low carbon economy where we have reduced carbon emissions by an even greater 80%. And by the way, the

EU share of final energy consumption is in the low teens percent or approximately 13.7%.

Arguably, Europe has already made some progress in reducing energy intensity, the amount of energy required per unit of gross domestic output, and in reducing its share of world energy consumption of and dependence on coal, the fuel that emits the most carbon per kilowatt hour (kwh) of output. However, we are still heavily dependent on oil and gas and remain seriously addicted to road transport. I apologise for drowning you in statistics, but it is important to back up assertions with facts. I must also point out the apparent inconsistencies which can be thrown up by one graph showing final consumption while another gives primary energy values.

Or, possibly different sources operate in different ways to confuse or, indeed, push different agendas. For examples, the OECD/IEA pie chart which gave us 5.5% final consumption from renewables, compared to the Eurostat compiled pie chart which gives 17.6% for renewable energy's share of primary

production. I would describe the Eurostat figure as very optimistic.

I have included tables on oil, gas and coal output, exports and imports to remind us of where carbon fuels come from and go to, so as to underline the degree to which Europe is dependent on imported supplies for over half its energy. You may ask what that has to do with achieving a low carbon economy but by showing how hooked we are on these fuels and how dependent on imports we have become, I make two points: first the dependence, and second, the huge potential benefit to our economy if we could reach the low carbon objective. Or, to put it another way, there is a powerful security of supply case for making the shift as well as an environmental one.

To underline this point, I have included a graph to show import dependency by country. And to throw some more light on the challenge we face, I have a graph to show household energy consumption per capita. Norway is doubly fortunate energy wise because it is a major exporter of oil and gas, 6th and

2nd ranking in the world respectively, while it has abundant hydroelectricity, unless there is a dry winter.
Denmark, the other net exporter, has surplus electricity from its wind generation capacity.

On the other hand, it is interesting to figure out why or how Iceland and Luxembourg have the highest household consumption per capita. I think the answer for Iceland lies partly in their climate, their position in the far north Atlantic and the abundance of geothermal energy derived from being on top of a major fault line. Luxembourg does not have indigenous energy resources but rumour has it that fuel tax there is lower than Belgium or France so the convoys that move between Brussels and Strasbourg twelve times year, all stop off to gas up and thereby distort the consumption figures. Who knows?!

However, that does bring me back to that transport issue. I used this slide from the European Environment Agency to show changes in GHG emissions by sector and to compare the performance in the old Member States with the new ones. I

haven't been able to track down a version which includes the two most recent Member States but I think the diagram makes the significance of the transport sector clear, as well the greater improvement in the new Member States' performance. I have no doubt this is down to their starting level being so low but it seems to me to be encouraging in terms of what can be done.

The next two slides are to make the point that there has been a long-term shift into electricity from primary energy. This is not surprising because electricity is the most flexible and convenient form of energy for most applications. This is important for tackling those transport emissions by offering an alternative source of energy for cars in particular to petrol and diesel as long as we can generate enough electricity.

My final slide in this section on the current situation lists the costs and GHG emissions of the mainstream sources of electrical energy. We need to keep both sets of figures in mind as a reality check.

So, I come to the European 2020 Energy strategy. There are five main priorities. First is achieving an energy-efficiency Europe and four actions are listed.

-Tapping into the biggest energy-saving potential in buildings and transport.

-Reinforcing industrial competitiveness by making industry more efficient.

-Reinforcing efficiency in energy supply.

-Making the most of national energy efficiency action plans.

You may think that these are fairly broad brush in approach and that the devil is in the detail. At any rate, that is what I think and we await more detailed proposals in efficiency measures.

The second priority is building a pan-European integrated energy market. Again, there are four actions listed.

-A timely and accurate implementation of the internal market legislation.

-Establishing a blueprint of the European infrastructure for 2020-30.

-Streamlining permit procedures and market rules for infrastructure developments.

-Providing the right financing framework.

By way of comment, let me say that all of this has 'been work in progress' in some shape or form all the time I have been in the European Parliament, nearly seventeen years. We are some way off achieving this single, internal market but we have made progress. There remains much to be done, including the need for huge amounts of investment in generation and transmission capacity, particularly in order to cope with the very different and varying requirements of renewables feeding into grid.

The third priority is empowering consumers and achieving the highest level of safety and security. Just two actions are listed for this priority.

-Making energy policy more consumer friendly.

-And, continuous improvements in safety and security.

Well, helping and encouraging consumers to participate better in the energy market is laudable, but must be viewed from the perspective that we need that competitive internal market to be fully functional as a pre-condition. As for safety and security, let us hope the panicky reaction in Germany to lurid press and media reporting from Japan will not set the cause of rational planning on science-based evidence back permanently, in the realm of knee jerk emotional decision making.

The fourth priority is extending Europe's leadership in energy technology and innovation. There are three actions.

-Implementing the SET plan without delay. That is SET as in Strategic Energy Technology.

-Second, the Commission will be launching four new large-scale European projects.

-The third action is ensuring long-term EU technological competitiveness.

There is much more flesh on the bones of these actions. The SET plan encompasses the Joint Programmes of the European Energy Research Alliance and six European industrial

initiatives on wind, solar, bio-energy, smart grids, nuclear fission and CCS or carbon capture and storage.

The four new large-scale projects are: one, a smart grid to link the whole electricity grid system; two, electricity storage both large-scale and for vehicles encompassing hydrogen fuel cells, compressed air storage, hydro pumped storage and improved battery efficiency; three is large-scale biofuel production; and four is the Smart Cities innovation partnership covering smart heating and cooling systems, electric mobility and the like. Perhaps describing some of all this as new is stretching the point but they are reasonable worthwhile aims.

Now, if you can keep up with all this numbering, the third action, i.e. ensuring long-term EU technological competitiveness, can be described under three sub-headings.

- A €1 billion initiative to support frontier research to deliver low-carbon energy break through.
- Maintaining Europe's leadership with the global flagship research project ITER or nuclear fusion.

- And a research programme for energy materials to combat concerns over dwindling rare earth resources. Or perhaps we should say- come up with alternatives as the Chinese corner the market and progressively cut off supplies.

Finally, we have priority five: the strengthening of the external dimension of the EU energy market. There are four actions listed here but I have reached saturation point on speaking them out, so suffice it to say this is mostly, in my view, about keeping on good terms with our suppliers while trying to export European good practices in areas like safety standards and persuading everyone else in the world to adopt our ETS, emissions trading scheme. I would be happy to delve into more detail in questions, but that is the outline of the 2020 Energy plan.

You may have picked up a slight note of scepticism in my comments. That is because there is something of a habit of talking big at European level, or should I say ambitiously, with not such a good outcome of results. So, I have made a few lists

of my own thoughts on what must happen if we are to reach that low carbon future.

In essence, we have to cut our consumption of oil and coal drastically and we have to deliver replacement energy. Personally I am confident that we can do the latter by a mix of nuclear fission and renewables, backed up by gas on stand-by. I am less confident about achieving the low hung fruit of European energy policy, namely energy efficiency and conservation. I believe that a combination of financial incentives and regulatory push is the way to go. And I remain of the view that the only way to wean people away from their cars is through the price mechanism, as oil supplies become steadily more expensive. But, that may take longer then 2050, let alone 2020.

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