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Take renewable energy, for example. It's easy to say that we need to depend on renewables, but according to the IEA's 'road map' scenario, renewables could account for 50 percent of power generation, which is a huge number. Thirty percent is almost the maximum that the grid can digest because of fluctuation. Fluctuating power is very difficult to manage, so there always needs to be a back-up supply of base load, but this means not really saving much on CO₂ emissions. A large, smart and computerised grid would likely enable us to utilise far greater amounts of renewables.

So you have to invest in system design and smart metering, and consumers must be more efficient and knowledgeable about peak prices and low prices and let them change their ways of power usage. Industry must also adapt to new metering methods. Business, manufacturing and our general way of life could be very different quite soon, which is what lies behind this so-called revolution.

But today the fossil fuel-driven industry is in charge, and utterly dominant in many countries. How can these people be convinced to move in another direction?

In the end, the market will decide because the market price sends a signal as to where investment should take place. Fossil fuel manufacturers should understand that they have to start investing in something new. We know that Saudi Arabia is saying it's not an oil country, but is becoming a solar country. That country is investing a great deal in solar photovoltaic technology. It has sun, but other countries have wind.

Here in Ireland they have wind, tidal and ocean power. It all depends on the geographical location or geological structure. Without certain geological structures, carbon can be captured but not stored. Fossil fuel companies are investing in different places. Maybe some are moving into biotechnology, some are moving into gas, some into services.

Countries of Central and Eastern Europe are experiencing their first serious oil crisis. Is the CEE region now more vulnerable, or are there unique opportunities?

Some Central European economies are seeking security within the EU framework as member states. Also, these countries

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have excellent human resources and historical roots in industry, and have thus been quite successful in attracting EU investment. It's also true that East European countries are more dependent on oil and gas imports from Russia, so individual countries are in a relatively weak position in terms of energy security. But these countries will be in a strengthened power position as members of Europe—if Europe becomes a single energy market.

Having said that, individual members must give up some control of energy to the European Union as a whole. By doing so, I think that [member states] can secure sources [of energy]. Of course, you have to engage more with energy efficiency first of all, which is very important in terms of cost-effectiveness. You also have to invest more heavily in source diversification. The Nabucco Pipeline is a very interesting initiative.

Greece, Hungary and Bulgaria are participating in an alternative pipeline project sponsored by Russia. Does this have the potential to weaken Europe's 'single voice'?

Things should be done in unison, rather than as individual, country-by-country approaches. If conducted in unison, different projects will complement each other, because the more routes and sources you have, the better. If a single route is accidentally disturbed, you have other options.

Of course, gas won't be enough for Nabucco. You have to have more sources from other places. At the same time, there are so many countries in between

that there's increased shipment risks for the investor. As Germany and France are not party to the pipeline projects, there's no warranty for demand. Europe as a whole needs to offer assurance to investors for this project.

Is there something politically taboo about discussing energy efficiency?

Politicians have started speaking a great deal about energy efficiency, but it sometimes hits voters by way of higher gasoline taxes, which is very incorrect politically. Sometimes politicians must do things that voters may not like, so it's a tough choice. They have to make convincing arguments on behalf of energy efficiency, but also have to help sectors that are hardest hit, like life support for businesses.

These are political decisions that have to be carried out properly, but what we're saying is that they shouldn't jeopardise energy prices. If you subsidise energy or oil prices, those who gain most are the richest people driving the biggest cars, not the poor people. So our recommendation is to use proper methodologies to support those hit the hardest, but to not use the energy price mechanism to do so.

Is there a place for values like human rights, nature protection and social equity when energy supply is at stake?

Equity is very important, because a democratic country without equity cannot remain stable politically, and political stability is very important for economic growth. The political role is to simultaneously achieve economic equity, sustainability, economic competitiveness and growth. This is very challenging, I understand, and the conditions vary from country to country, so we have to select the right policy mix. We don't have any clear solutions for each country, but we do lots of policy analysis of different countries and make policy recommendations, and in general we try to advise using the energy sector in the most efficient, market-oriented way. This is not only the best way to make efficiency happen, it also increases security.

Are you optimistic about sustainability's chances for success?

Yes, I am. I think sustainability and energy security can be achieved together. Our analyses clearly show this. It is a matter of political commitment to huge investment in the future. If we can manage that, I think we can achieve both at the same time.