



**“Can Do”**

# **Youthful Energy for Europe**

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Café Crossfire Evening Debate  
Europe’s innovation-driven future. Do we have a road map?  
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**Jeroen van der Veer** is Chief Executive of Royal Dutch Shell plc. He joined Shell in 1971 and worked in manufacturing and marketing in the Netherlands, Curaçao and the United Kingdom. In 1992, he became a Managing Director of Shell Nederland. Three years later he became President and Chief Executive of the Shell Chemical Company in the United States. He was appointed a Group Managing Director in 1997.

Jeroen was born in the Netherlands, and is married with three daughters. He has two degrees – one in mechanical engineering from Delft University and another in economics from Rotterdam University.

He is a Non-executive Director of Unilever.

**The European Union has wisely given itself until 2020 to meet its ambitious energy and emissions targets. Our economies need time to adjust. Reaching a cleaner energy future will involve painful choices and trade-offs. These will have to be made by all EU member states in a coordinated and disciplined way. Europeans also need to come to terms with the reality that, even if the 2020 goals are met, Europe will still be importing energy, including from Russia. That is why Europe and Russia must work for mutual dependency by mutual investment. With the right "can do" mentality, Europe can turn its energy vision into reality.**

### **European energy dream**

Let me start by congratulating Mr. Barroso with the 50 year-anniversary of the Treaty of Rome, which was celebrated in Berlin yesterday.

The European dream of peace, prosperity and security on the European continent has become a reality. But times change. The European dream faces new challenges. Energy security and climate change are two important ones. And both are closely related to the issue of global economic growth and poverty reduction. These are issues that even 500 million Europeans cannot solve alone.

Over two billion people currently have no access to modern forms of energy. They are at the bottom of the energy ladder. These people aspire to the same quality of life as most Europeans and Americans are accustomed to: light, heating and air conditioning in their house, a computer, a television and a car. As they acquire more wealth, they will climb the energy ladder. Hundreds of millions of people will succeed – they will use electricity, buy cars and fill them up with petrol. Like we do ourselves. And, since no level of energy conservation in Europe and the United States can offset the increase in demand for energy in the developing world, global energy demand is set to grow in the coming years. It could grow by as much as 50% in the period 2005-2030.

How should Europe respond? The European Union, with the Commission in the driver's seat, has formulated an ambitious energy policy for 2020 and beyond. It is wise the European Union has set targets for 2020, which gives us time to adjust, instead of making short-term promises that would require European industry to stand-still in order to fulfil them.

We at Shell believe that nothing is

impossible. So we appreciate the "can do" mentality of Mr. Barroso and his team. Let me offer three observations on the European energy dream that may help it become more than just a vision:

First, even if all of the EU's goals are met, Europe will continue to import much of its energy, including natural gas from Russia. A growing network of pipelines is connecting Russia and the EU . . . to our mutual benefit. The relationship between the EU and Russia is one of mutual dependency. The European Union wants security of supply. Russia wants security of demand. Both sellers and buyers like predictability. Mutual dependency has a lot to do with mutual investment: if European companies should be allowed to invest in Russia, Russian companies should be allowed to invest in the European Union. So there is ample reason for the EU and Russia to maintain an open and constructive energy dialogue.

Second, to meet the 2020 targets, all member states must stick together. If 27 member states start nibbling away at the targets, they will rob the strategy of its internal logic. If the EU member states approach the 2020 goals in a coordinated and disciplined way, they will get the best response from industry. If, instead, there is going to be a mosaic of national standards and regulations, industry will find it much harder to respond effectively.

Take the discussion on transportation fuels. A Europe-wide approach to fuel efficiency makes more sense than a collection of national rules. I will leave the debate over the actual targets to the automotive experts.

Third: meeting the energy challenge requires trade-offs and choices. The ideal type of energy is Cheap, Clean and

Convenient. I call this the criterion of the "three Cs". What you find is that energy types usually fit no more than two out of the three Cs. Let me illustrate this:

Coal is cheap and abundant, but dirty. It is abundantly available in China, India and the United States. We can expect the use of coal to grow over the coming years, despite its heavy CO<sub>2</sub> footprint. This reinforces the case for coal gasification and carbon capture and underground storage.

Solar panels are clean, but expensive. They produce tiny amounts of electricity for the money invested. Shell is involved in thin-film solar panels, which are a lot cheaper to produce than traditional silicon-based panels.

Biofuels can be relatively clean, though not all of them are. In any case, we will have to pursue them carefully, to avoid putting pressure on food prices. The US drive for more ethanol has pushed up world corn prizes. This has, in turn, led to higher tortilla prices in Mexico. We need to do more to avoid competition between biofuels and food production. There are many ways to do this. Shell's vision is to produce more of them from plant waste or wood chips, or from non-food crops like switchgrass.

Of all renewable forms of energy, wind energy is closest to the economic break-even point of conventional power generation. Shell is actively involved in building some of the world's largest wind parks. The downside to wind energy, especially from the point of view of local communities, is that wind parks need to occupy huge swathes of land to produce meaningful amounts of electricity. Even offshore, where the wind is strong and steady, it easily takes over 300 (three MW) turbines to produce the equivalent of a single gas or coal-fired power station.

Oil and natural gas will continue to dominate the global energy mix for a long time to come because they are relatively cheap and convenient to produce. Oil is still the fuel of choice for the transport sector, because it is easy to distribute and use. To fill up your tank

with petrol takes a couple of minutes: now that's the essence of convenience. To reduce the CO<sub>2</sub> footprint of oil and natural gas, we must continue to improve the efficiency with which we produce them. We can re-inject the CO<sub>2</sub> that escapes during production back into the reservoir to increase pressure and enhance the oil recovery rate. We are working with partners in Norway and Australia to demonstrate the feasibility of this technique.

Industry can make the technological breakthroughs that will lead us to a cleaner energy future. But governments must establish the rules and incentives that help societies get there more quickly. Governments are responsible for determining the energy mix. They decide, for example, whether nuclear energy is desirable or not. The Canadian government decides whether or not to exploit its oil sands. The responsibility of a company like Shell is to be best in class in producing them safely and responsibly.

In thinking about the future, leaders will have to take account of the advantages and disadvantages of all the various energy types. There is no silver bullet. Reaching a cleaner energy future is going to be hard work for governments, industry and consumers.

### **Europe's talent**

I believe Europe can realise its energy dream, provided it nurtures and fosters the talents of its people, especially of its young people. Tomorrow's Nobel Prize winners are in school or university today, or still in their nappies. Do we have a road map to nurture and foster their talents? Do Europe's current leaders have ideas to kindle the fire of imagination of the next generation?

These are questions we should be thinking about – and we should be answering them.

Mr. Barroso has proposed the creation of a European Institute of Technology (EIT) to boost innovation in Europe. This initiative deserves our full support. Europe needs a decentralised cross-border network, tying together its

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centres of excellence and making better use of its collective brainpower. The EIT is the missing link between universities, industry and research institutes.

### **Shell's experience**

Let me give you an idea of what Shell is doing to turn dreams into reality.

This year, Royal Dutch Shell celebrates the 100-year-anniversary of the merger of Royal Dutch and Shell Transport. The history of innovation has taken us from the Murex, the world's first seagoing tanker, in 1892, to synthetic liquid fuels made from natural gas – GTL. It has brought us Snake Wells . . . horizontal wells that twist and turn, reaching oil that was out of reach in the past. In future, it will take us to intelligent biofuels made from plant waste, and to the capture and storage of CO<sub>2</sub>, or its "mineralisation" - turning CO<sub>2</sub> into building materials.

For Shell, words like "innovation" and "talent" are more than buzzwords. Finding the sharp minds needed to drive innovation in the future is a strategic issue. The energy industry has an aging work force. At the same time, the industry needs more people to respond to the booming demand for energy.

In response, Shell has stepped up its recruitment effort. In 2006, we hired some 6,000 experienced professionals and university graduates from over 60 countries. The recruitment drive is continuing.

I also firmly believe in the need to think out of the box. To foster this spirit of innovation, Shell has a Chief Technology Officer and 7 Chief Scientists. They are responsible for coordinating our innovation drive, and serve as our company's technology ambassadors. All good ideas we consider worth pursuing get the funding they need. Our efforts to step up our Research and Development are paying off. According to the Intellectual Asset Magazine, Shell currently outperforms its competitors in terms of growth and

impact of its patent portfolio. So Shell is creating many options for the future. The trick will be to pick the winners.

Shell also tries to foster this out-of-the-box mentality in society as a whole. Let me give you some examples:

First, the World Challenge, run by BBC World and Newsweek magazine, and sponsored by Shell, rewards entrepreneurs who provide local solutions to issues like hunger, poverty and pollution. Last year's winner was a Sri Lankan company that turns elephant dung into paper.

Second, the Eco-Marathon. The idea is to drive vehicles the maximum distance using the minimum fuel. The current record for a combustion engine entry, set in 2004 by a French university team, is driving the equivalent of 3,410 km. In 2005, a Swiss-built hydrogen-powered vehicle achieved 3,836 km. This is the equivalent of driving from Paris to Moscow! I would like to thank the Commission for its support for this event. Commissioner for Energy Andris Piebalgs opened last year's Eco-marathon. Commissioner for Science and Research Janez Potočnik is the Patron of this year's edition.

Third, Jet-Net. In 2002, a number of companies, including Shell, created JetNet to promote interest in the sciences among schoolchildren in the Netherlands. There is close cooperation with the Dutch government. This year, for the first time in years, the growth in the number of first-year students in the science faculties outpaces that of other university faculties. Maybe our efforts are beginning to pay off.

We at Shell believe in making the impossible possible. Europe can meet its 2020 goals if governments, industry and consumers adopt a "can do" mentality.

I would like to thank Mr. Barroso for instilling some youthful energy into the European Union. And I wish him all the support he deserves in moving Europe forward.

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