



Friends of Europe Les amis de l'Europe

In partnership with



ATLANTIC RENDEZ-VOUS DEBATE SERIES

Transatlantic dialogue between Brussels and Washington DC

**SECURITY OF SUPPLY AND CLIMATE CHANGE:
ARE AMERICA AND EUROPE ENERGY COLLABORATORS
OR COMPETITORS?**

Spring 2007

With the support of



Author: Mike Scott

Publisher: Giles Merritt

Production Co-ordinators: Giovanni Colombo and Sarah Collins

Design & Production: Brief-Ink

Photographs: Frédéric Remouchamps

CONTENTS

ACKNOWLEDGEMENTS	6
INTRODUCTION	9
POLICY RECOMMENDATIONS.....	10
ANALYSIS	12
Background	12
The Problems	13
Energy security.....	13
Climate change	15
The Solutions.....	16
International regulation.....	16
Carbon trading.....	18
Carbon capture and storage	20
Nuclear power	21
Renewable energies	21
Biofuels.....	22
Energy storage	23
Energy efficiency	24
Conclusion.....	25
ANNEX 1	
<i>Friends of Europe</i> and Gallup Europe high-level poll:	
EU and US Leaders' views on Energy Security.....	26
ANNEX 2	
Summary of the Atlantic Rendez-Vous Satellite Debate:	
America and Europe: Energy Collaborators or Competitors? ...	37
About the debate	40
EU and US – collaboration or competition for energy?	41
Taxation: an instrument to shape energy strategies?.....	42
Carbon: differences across the Atlantic	43
Biofuels.....	44
Energy security = sustainable development	44

ACKNOWLEDGEMENTS

This report would not have been possible without the participation of many people, including:

Spencer Abraham, Chairman of the Board, AREVA Inc. and former US Secretary of Energy, US

Paul B. Abramson, Special Associate Chief Administrative Judge, Atomic Safety and Licensing Board Panel, Nuclear Regulatory Commission (NRC), US

Edmond Alphandéry, Chairman of the Supervisory Board, Caisse Nationale de Prévoyance, France, and Trustee, *Friends of Europe*

James W. Angelo, Director, Performance Surety Division, Los Alamos National Laboratory (LANL), US

Martin Apple, President, Council of Scientific Society Presidents, US

Joachim Bitterlich, Executive Vice President, Veolia Environnement, France and Trustee, *Friends of Europe*

Guy F. Caruso, Administrator, Energy Information Administration, US

Reid Detchon, Executive Director, Energy Future Coalition, US

Patrick Doherty, Director, Corporate Social Responsibility, City of New York Comptroller's Office, US

Jonathan Faull, Director General for Justice, Freedom and Security, European Commission

Hans-Aasmund Frisak, Senior Adviser, Statoil, Norway

Paal Frisvold, Policy Adviser, Bellona Europa, Belgium

Lord Timothy Garden, Liberal Democrat, House of Lords, UK

Michael Glos, Minister of Economy and Technology, Germany

Thomas O. Gray, Deputy Executive Director, American Wind Energy Association, US

Heinz Hilbrecht, Director for Conventional Sources of Energy, Directorate General for Energy and Transports, European Commission

David Hone, Group Climate Change Adviser, Shell International Limited, UK

William C. Horak, Chair, Energy Sciences & Technology Department, Brookhaven National Laboratory, US

Mark Johnston, EU Energy Policy Campaigner, Greenpeace EU Office, Belgium

David Kelly, Chairman, Matthews International Corporation, US

Thomas R. Kuhn, President, Edison Electric Institute, US

Pascal Lamy, Director General, World Trade Organisation and Trustee, *Friends of Europe*

Cindy Lee, Programme Director for Environmental Sustainability, Chemical, Bioengineering, Environmental and Transport Systems Division, National Science Foundation, US

Leslie Lowe, Programme Director, Energy and Environment, Interfaith Center for Corporate Responsibility, US

Harold F. McFarlane, President, American Nuclear Society, La Grange Park, US

Cesare Merlini, Vice President, Council for the US & Italy, Italy

Andrés Ortega, Director, Foreign Policy Spanish Edition, Spain

Andris Piebalgs, EU Commissioner for Energy

Arne Richters, Senior Specialist Government Affairs, Toyota Motor Europe, Belgium

Martin Rocholl, Chair, Friends of the Earth Europe, Germany

Matthias Ruete, Director General for Energy and Transport, European Commission

Rusdu Saracoglu, Chairman, Yapi Kredi Bank, Turkey

Henning Schulte-Noelle, Chairman of the Supervisory Board, Allianz, Germany

Jacques de Selliers, General Manager, GreenFacts, Belgium

Lord John Kerr, Deputy Chairman, Shell, UK

Keith Smith, Senior Associate in the Europe Programme, Center for Strategic and International Studies (CSIS), US

Claude Turmes MEP, Member of the European Parliament Committee on Industry, Research and Energy

Tapani Vaahtoranta, Director, Finnish Institute of International Affairs, Finland

James A. Wendt, Director, Department of Energy, US

Hans Verolme, Director, Global Climate Change Programme, World Wildlife Fund (WWF)

Piotr Grzegorz Wozniak, Minister of Economy, Poland

Disclaimer

The views expressed in this report are the private views of the speakers and participants and are not necessarily those of the organisations they represent, nor of *Friends of Europe*, its Board of Trustees, its members or partners. Reproduction in whole or in part is permitted, providing that any such reproductions, whether in whole or in part, are not sold unless they are incorporated in other works.

Friends of Europe

Bibliothèque Solvay, Parc Léopold, 137 Rue Belliard, 1040 Brussels, Belgium

Tel: + 32 (0)2 737 91 45

Fax: + 32 (0)2 738 75 99

Email: info@friendsofeurope.org

www.friendsofeurope.org

INTRODUCTION

This report presents the outcome of the 4th *Atlantic Rendez-Vous* (ARV) project in *Friends of Europe's* 2006-2007 ARV series. The ARV series is an initiative of *Friends of Europe* in collaboration with the European Commission Delegation to the US and Gallup Europe. It aims to create a platform for enhanced dialogue and policy debate between the EU and the US on key transatlantic issues. While the present ARV is devoted to energy, the 2006-2007 series includes four other projects, which focus on: innovation; homeland security; the EU-China-US policy triangle; and climate change and biofuels.

The pioneering transatlantic satellite format that connects Brussels and Washington in a lively TV-style debate, and the contributions of a wide range of American and European experts, make *Friends of Europe's* ARV series unique in its genre and represent an unprecedented attempt to create a transatlantic platform for debate.

The global energy landscape has evolved rapidly in recent months and has confronted the EU and the US with a range of problems that threaten their prosperity and the sustainability of their economies. Increased global insecurity, particularly in the Middle East, and greater scientific understanding of the human impact on the world's climate have pushed the twin threats of energy security and climate change to the top of the political agenda. Russia's disputes with Ukraine and Belarus over gas and heightened tensions between the US and Iran, combined with the conflict in Iraq and the continued demand for energy in China and India illustrate to Europe and the US that their energy supplies are increasingly precarious. As a result, governments around the world have been spurred into action. It is against this background that *Friends of Europe* publishes this ARV report on energy.

The results of an opinion poll of leaders on both sides of the Atlantic on a range of energy issues (strand I) were presented during *Friends of Europe's* European Policy Summit entitled "Energy Europe: Security of Supply, Competitiveness and Environmental Sustainability" on 9 November 2006. The Summit featured a transatlantic satellite debate (strand II) involving EU Energy Commissioner **Andris Piebalgs**, Poland's Minister of Economy **Piotr Grzegorz Wozniak** and **Spencer Abrahams**, Chairman of the Board of AREVA Inc. and former US Energy Secretary. The project was completed by interviews (strand III) with political, government, business, NGO and academic figures in Europe and the US, including **Michael Glos**, Germany's Minister for Economy and Technology. This report brings the three strands together, analyses the results of the project and puts forth policy recommendations.

We would like to thank our partners, the European Commission Delegation to the US, Gallup Europe and the Center for Strategic and International Studies, who made this ARV possible, and all respondents, speakers and interviewees who took the time to contribute their valuable input to the project.

POLICY RECOMMENDATIONS

1. **Act now!** Climate change is a reality, and measures must be taken both to limit the rise in emissions and to adapt to changes that are already 'built in' to the climate system. It is cheaper to introduce measures to deal with global warming now than to leave it to future generations.
2. **Focus diplomatic efforts on a post-Kyoto framework.** Rapid changes are happening around the world, helped by electoral cycles in a number of key countries, such as the US, Australia and Canada. There is real international momentum for action on climate change and the opportunity should be seized. Europe has created a position for itself as a leader on climate change and needs to leverage this to put in place the building blocks for a post-Kyoto low-carbon global economy after 2012.
3. **Make a long-term commitment to emissions trading.** One of the best ways to encourage continued emissions cuts after 2012 is to commit to an extension of the EU's Emissions Trading Scheme (EU ETS). This gives investors, both in Europe and the rest of the world, greater confidence to put cash into carbon trading and gives businesses more incentive to generate surplus allowances.
4. **Auction allowances in cap-and-trade schemes.** Giving away allowances for free means that participants receive a valuable asset without having any incentive to cut their emissions. Auctioning focuses participants on their responsibility to change their behaviour, and encourages them to take action, regardless of the price. It also increases the price of allowances, further boosting the incentive to cut emissions.
5. **Diversify energy supplies.** This means not just a geographical spread of supplies from different countries and regions to reduce reliance on Russia (for gas) and the Middle East (for oil), but also introducing a wide range of fuels to make oil and gas less crucial. Renewable energy technologies include wind, solar, biofuels, hydro-electric and geothermal (where appropriate) and in the longer term, hydrogen.
6. **Don't ignore the easy options.** The recent announcements by Australia and the EU on phasing out traditional light bulbs exemplify policies that are relatively easy and inexpensive to implement, and likely to be popular. Measures such as this can be introduced while the arguments rage over whether to build new nuclear power stations. Energy efficiency is the quickest, easiest and most effective way to cut emissions.
7. **Look beyond technology.** Demand management can be just as effective in cutting emissions, so market mechanisms must be in place to encourage consumers to act in a more environmentally friendly

manner. This in turn will lead businesses to seek the profit opportunities from satisfying the demand for low-carbon products and lifestyles.

8. **Put in place the infrastructure for distribution of biofuels.** There are many issues surrounding the benefits of first-generation biofuels, including their effect on food production, deforestation, efficiency and whether they can provide value for money compared to fossil fuels. Many of these problems will most likely be overcome by second-generation cellulosic ethanol, a very promising technology that's still some years from commercialisation. Using first-generation biofuels to create a biofuels distribution system would speed the introduction of second-generation biofuels and help cut emissions from transport.
9. **Boost energy storage.** Energy storage technologies are often overlooked, but they allow intermittent renewable energy sources to provide constant power, while improving their profitability. Energy generated at off-peak times can be stored and then sold at premium prices during peak demand. Energy storage also improves the efficiency of existing electricity infrastructures and makes decentralised energy generation more viable.
10. **Increase knowledge.** "You cannot manage what you cannot measure." The old business mantra fits well with efforts to control energy use. Businesses and householders often do not know where their energy consumption is highest and what the best way to reduce it is. The range of measures to improve customers' awareness includes smart meters, better labelling of products and appliances and more information on bills.
11. **Don't compete, co-operate.** The US and Europe must avoid competing for ever-scarcer energy resources and must begin to introduce their own clean technology products into the global market. But energy supply and climate change are everyone's problems and require global solutions. The US and Europe must join together to counter the increasing nationalisation of fossil fuel and work to ensure that clean technology is as widely distributed as possible.

ANALYSIS

Background

The global energy landscape looks very different today than it did a year ago. Prices for oil and gas soared then dropped back, illustrating the continued volatility of energy supplies and highlighting the precariousness of energy security for the EU and the US. Meanwhile, three documents helped to seal the importance of global warming as a political issue: Al Gore's Oscar-winning film, *An Inconvenient Truth*, was seen around the world and helped to define the climate change agenda; Sir Nicholas Stern's *Review Report on the Economics of Climate Change* laid out the economic arguments for dealing with the issue now rather than later; and the latest report from the Intergovernmental Panel on Climate Change (IPCC) emphasised the overwhelming likelihood that climate change is man-made and that the consequences will be severe, especially if measures to reduce greenhouse gas (GHG) emissions are not taken soon.

Oil prices rose last year on the back of continued instability in the Middle East – both in Iraq and in Palestine – and as a result of the huge thirst for oil in China, where rapid economic growth pushed demand for oil up by 9.3% in 2006. Gas prices jumped after Russia cut off supplies to Ukraine in January 2006 in a dispute over prices, temporarily blocking the flow of gas to western Europe – this coincided with a severe winter in Europe that pushed up demand. The incident was followed by a further dispute with Belarus over gas and moves by Gazprom (the world's largest gas company, providing a majority of Russia's production, and a substantial amount of global production) to take control of Russian oil assets being developed by western companies, in places such as the Sakhalin oil fields.

The market's jitters over oil and gas prices were not helped by increasing tension between the US and Iran, home to the world's second-biggest gas reserves and a significant proportion of its oil reserves.

Under the International Energy Agency's (IEA) Reference Scenario¹, which provides a baseline vision of how energy markets will evolve without government measures to alter underlying energy trends, global primary energy demand will increase by 53% between now and 2030. Over 70% of this increase will come from developing countries, led by China and India, where fossil fuels will dominate. Oil will remain the single largest fuel in the global primary energy mix, with demand for gas growing at 2% per year in 2002-2030 – the fastest rate of any fossil fuel. However, coal will still be the world's second-largest energy source in 2030.

Even under the IEA's Alternative Scenario, fossil fuels will be the dominant driver of the global economy by 2030, but if governments implement the policies they are so far only considering, global energy demand will fall by 10% in 2030 – equivalent to China's entire energy consumption today.

¹ *World Energy Outlook 2006*, International Energy Agency.

Will the US adopt a system to price carbon and put a cost on carbon producers in the near future?

I think there is a high probability the US will adopt some kind of carbon framework over the next five years.

Spencer Abraham, Chairman of the Board, AREVA Inc. and former US Energy Secretary

Because of the coming political shift, affected industries are trying to get ahead of it with carbon management plans that they think will be better for them under this administration than in two years' time. So we might have a relatively weak deal now, or nothing will happen until after the next election.

Reid Detchon, Executive Director, Energy Future Coalition

Europe's energy policy is based on three pillars – sustainability, competitiveness and security – but opinions differ as to whether these three aims are compatible. Michael Glos, German Minister for Economy and Technology, says: “The three objectives are all compatible with the reduction of energy consumption and the improvement of energy efficiency – provided that the boundaries of economic viability are considered.” But the use of coal, Glos adds, causes environmental damage. “We, and even more the large emerging economies like China and India, nonetheless cannot do without this relatively secure and inexpensive source of energy. Here, the promotion of more efficient power plants and the development and application of carbon capture and storage (CCS) technologies² can help to minimise environmental pollution as far as possible.”

The Problems

Energy security

The world is reliant on the Middle East for its oil. Of the trillion barrels of current estimated reserves, 66% are in the Middle East. The country does not provide 66% of current demand, though: Russia is currently the number two global producer behind Saudi Arabia, but reserves outside the Middle East are being depleted much faster than those of Middle Eastern producers. Their reserves-to-production ratio, an indicator of how long proven reserves would last at current production rates, is much lower (about 15 years for non-Middle Eastern and 80 years for Middle Eastern producers). If production continues at today's rate, many of the largest current producers, such as Russia, Mexico, the US, Norway, China and Brazil, will cease to be relevant players in the oil market in less than two decades. At that point, the Middle East will be the only major reservoir of abundant crude oil.

² Carbon capture and storage (CCS) is an approach to mitigating climate change by capturing carbon dioxide (CO₂) from large point sources such as power plants and subsequently storing it away safely instead of releasing it into the atmosphere. Storage of the CO₂ is envisaged either in deep geological formations, deep oceans, or in the form of mineral carbonates.

For gas, the situation is different. While there are vast reserves in the Middle East, Europe is a close second. Unfortunately, from the EU's perspective, most of that is in Russia, which seems increasingly keen on using its energy reserves as a tool to exert political pressure on its European neighbours. And while European production is very high, the Middle East has only just started and many fields are relatively underdeveloped. Iran, for example, despite sitting on the second-biggest gas reserve in the world, is a net importer of gas. While Europe is competing with the US and Asia for oil resources, its gas comes mostly from Russia, so the issue is more to do with reliance on one supplier.

Russia is just one example of the growing trend to nationalise production and ownership of fossil-fuel resources. Most Middle Eastern producers, Venezuela and Bolivia have also moved to take control of their energy assets in the past few decades. About 77% of proven oil reserves are controlled by governments that significantly restrict access to international companies, according to PFC Energy, an industry consulting firm in Washington. These countries do not provide market incentives to encourage production, so the investment necessary to meet projected demand is not being made.

Compared to private companies, nationalised oil groups pump a lower proportion of their reserves, have less modern technology at their disposal, more erratic management, and spend much less on exploration – about a third of the amount private companies did in 2003, for example. More national ownership of reserves limits supplies, increases uncertainty and pushes up prices.

On top of that, state oil groups are far less transparent than private groups – many OPEC members, for example, will not publish data about supplies and reserves – which raises fears about the sustainability of oil supplies and has given rise to theories that oil production has already peaked, with the Worldwatch Institute pointing out that oil production is falling in 33 of the 48 largest oil-producing countries.

State groups' profits are also likely to be siphoned off for political purposes rather than be reinvested in the industry – Venezuela, Iran and Russia are prime examples of this. This likely lack of investment will coincide with a surge in demand for fossil fuels. Electricity demand is expected to more than double from 2003 to 2030, with most of that growth coming from outside the OECD, i.e. in emerging markets. If oil production and reserves are smaller than is currently believed, it is possible that an unforeseen shock to the world economy is being stored up, which will bring the world economy to a grinding halt, with potentially catastrophic consequences.

It is not surprising then, that energy security should be a preoccupation of policymakers and other influential figures. In his 2006 State of the Union address, President Bush made it a priority to wean the US off its "addiction to oil" in an attempt to improve US energy security.

Energy security means different things to the US and the EU – Europe’s fears are mainly about gas supplies from Russia and oil from the Middle East. The US is less dependent on Middle Eastern oil and gets most of its gas from Canada, but it has to deal with the increasing recalcitrance of one of its main suppliers, Venezuela. As its domestic supplies dwindle, “it is likely to have to become more outward-looking,” said one European official.

Many people are pessimistic about energy security in the long term but, as one European politician suggests, they may be focusing on the wrong issue – access to fossil fuels. “The only way for the EU and the US to be in a better position vis-à-vis producers is to change the rules. We need to have the ideas and the technology. If we want less reliance on gas, we need to invest in the building stock. If we want less reliance on oil, we need to introduce strict fuel economy standards and invest in public transport. As the resource base reduces, the only way to get some bargaining power is to reverse the game from resources to investment in technologies and concepts.”

It is technology that many people see as the solution to the energy security problem – both in terms of extending the life of oil and gas fields, as supplies are depleted, and in providing alternatives to fossil fuels.

Climate change

The other side of the energy coin is the emissions that energy consumption entails. The IPCC’s report, released in February 2007, concluded that global warming was more than 90% certain to have been caused by human activities, in particular the burning of fossil fuels and the consequent release of CO₂ into the atmosphere. “This day marks the removal from the debate whether human action has anything to do with climate change,” **Achim Steiner**, the Head of the United Nations Environment Programme, said at the launch of the report.

The earth has warmed by 0.74°C since 1906; and about 0.4°C of this increase has occurred since the 1970s. Climate change can be seen in increases in global air and ocean temperatures, melting snow and ice, rising sea levels and extreme weather events.

The report adds that we can have “very high confidence” that global warming has been caused by rising greenhouse gas emissions. The concentration of CO₂ in the earth’s atmosphere has risen from the pre-industrial value of about 280 parts per million (ppm) to 379ppm in 2005. These greenhouse gas emissions are due to human activity, in particular emissions from fossil-fuel use, agriculture and land-use change.

Continued greenhouse gas emissions will lead to significant changes in the global climate system, with a projected warming of the planet over the next 20 years of about 0.2°C per decade. This is likely to result in snow-cover contracting and sea-ice shrinking in both the Arctic and Antarctic, and it is “very likely” that hot extremes, heat-waves and heavy precipitation will continue to become more frequent. “The long-term view will probably come from scientists,” says **Martin Apple**, President of the Council of Scientific

Society Presidents. “For long-term solutions to emerge, we need the full fostering of creativity on both sides of the Atlantic.”

The IPCC report has combined with the Stern Report and the Al Gore film *An Inconvenient Truth* to seal a consensus that climate change is real, it is happening now and it must be dealt with sooner rather than later. This has given momentum to efforts to deal with climate change, which have been spurred on by the benefits to global economies and energy security that such efforts will bring.

Most of the growth in emissions will come from emerging markets, with China due to take over from the US as the largest emitter of CO₂ before 2010 and India set to see considerable growth in emissions as well.

As a result, governments around the world have been spurred into action – Australia, one of the arch-sceptics on Kyoto, is talking of introducing a cap-and-trade system³ and is to phase out conventional light bulbs, a move that has been copied by the EU. Canada, another country unsure of the merits of Kyoto, has stepped up its efforts to address the issue, while in the US, a change of control in Congress has seen the introduction of seven bills proposing a nationwide cap-and-trade system, among a raft of other initiatives.

The Solutions

International regulation

The Kyoto Protocol had rather fallen by the wayside as a result of the refusal of Australia and the US to sign up and the fact that developing countries have no obligations to cut their emissions. Nor was there widespread enthusiasm for attempts to look beyond the expiration of the protocol in 2012.

But now a great deal of energy is being put into the search for a post-Kyoto framework to continue efforts to deal with climate change, and a raft of initiatives to tackle climate change have been launched in recent months. Cap-and-trade systems are the preferred policy instrument, as the EU’s Emissions Trading Scheme – the world’s first – overcomes its teething problems and shows how such a scheme can work.

The EU continues to set the agenda in this area, with its recent agreements to a 20% cut in greenhouse gas emissions by 2020 (compared to 1990 levels), rising to 30% if other nations also agree to make cuts; to generate 20% of its energy from renewable sources by the same date; to improve energy efficiency by 20% by 2020; and a commitment to have biofuels account for 10% of its overall energy mix.

³ A cap-and-trade system is a term for emissions trading, an approach used to control pollution by providing economic incentives to reduce the emission of pollutants. For example, a carbon project that aims to produce a reduction in greenhouse gases may induce participants in the scheme to trade carbon credits

Even China and India, two of the biggest emitters in the developing world and previously implacably opposed to cutting their own emissions, are giving out (admittedly fairly ambiguous) signals that they might sign up to a post-Kyoto agreement that commits them to emissions cuts.

What role should taxation play in improving energy efficiency and combating climate change? Do Europe and America have broadly common approaches to taxation as a way of encouraging energy saving and innovation?

“Taxation of energy consumption can send signals to promote energy saving and the development of energy-efficient technologies. The eco-tax reform in Germany, for instance, has resulted in a perceptible reduction of fuel consumption.”

Michael Glos, Minister of Economy and Technology, Germany

“Europe and the US do not have broadly common approaches to taxation for these purposes. The US government is much less willing to impose taxes of any kind, let alone for encouraging energy saving and innovation, whereas European governments have been using taxation for this purpose for several years.”

Cindy Lee, Programme Director for Environmental Sustainability, National Science Foundation

“Taxation should not be used to deal with carbon emissions. Taxation removes capital from the sector and redirects it to other parts of the economy. Rather, the approach should be to redirect that capital within the sector to low-carbon emission projects. Emissions trading is an effective way to do this.”

EU energy company

One measure unlikely to gain support in the US as a means to change consumer behaviour – in contrast to Europe – is taxation. “Americans are allergic to taxes,” says **Leslie Lowe**, of the Interfaith Center on Corporate Responsibility, while **Reid Detchon**, Executive Director of the Energy Future Coalition in the US, adds that taxation has not succeeded in changing behaviour when it comes to transport. “People’s mobility choices seem to be governed by much more powerful forces than price, so we shouldn’t try to change people’s behaviour through economic measures, we should change cars and fuels,” he adds. “Europe has much more ability to increase taxes in an attempt to affect economic choices. In the US, tax increases have been politically very difficult and usually have not been seriously considered.”

Another thing all participants in the *ARV* project have agreed on is that there will be no movement at federal level in the US while George Bush remains President, but that his successor will take action. Even his apparent U-turn in the run-up to the G8 summit in Germany was greeted with scepticism. “Most people assume that only partial gains are possible for the rest of this

administration but in 2009 the attitude will be strikingly different. All the major candidates are committed to action on climate," Detchon says.

Policymakers also seem to be coming round to the idea that less flamboyant gestures have an important role to play. It seems likely that the moves by Australia and the EU to phase out traditional light bulbs, saving up to 25 million tonnes a year of carbon emissions in Europe, will be copied elsewhere. It is a politically painless and popular way to start cutting emissions in developed countries and may help to highlight the benefits of other energy-efficiency measures.

Targets related to emissions are likely to become more widespread, in the manner of those recently introduced in the EU. We are also likely to see further developments along the lines of the UK's proposed climate change bill, the first of its kind. Its key features include making legally binding the target of a 60% cut in CO₂ emissions by 2050 and a 32% reduction by 2020, as well as a five-year 'carbon budgets' system for businesses and individuals, prepared 15 years ahead so that there is certainty in investing in low-carbon technologies.

Carbon trading

These measures follow on from the introduction of the world's first emissions trading scheme, which had a chequered start but is showing signs of becoming more effective as the first Kyoto compliance period in 2008 approaches. However, the rest of the world is fast catching up: a number of cap-and-trade systems are being planned at state level in the US – California is leading the way, with emissions trading joining a host of other policies, including the 'Million Solar Roofs' initiatives and tighter fuel efficiency standards. The emissions trading plan has attracted five other US states – Arizona, New Mexico, Oregon, Utah and Washington State – and the Canadian province of British Columbia. Meanwhile the Regional Greenhouse Gas Initiative (RGGI) involves 10 north-eastern US states in a similar scheme.

A number of cities and municipalities, along with a raft of US companies, have already signed up to (admittedly not very onerous) commitments to cut their emissions through the Chicago Climate Exchange. Many US businesses, including some of the very biggest companies such as GE, have positioned themselves to take advantage of the business opportunities climate change will present and have lobbied for limits to US emissions. While doubts remain over whether President Bush really has moved from his opposition to the Kyoto Protocol and cap-and-trade, there seems little doubt that the next US president will be far more engaged on climate change, regardless of which party they belong to.

Pressure is building in Australia for a similar scheme to the EU's, Japan is planning one, while Clean Development Mechanism (CDM) projects – whereby industrialised countries can meet their Kyoto commitments by paying for carbon-reducing projects in developing countries – are taking off around the world.

Carbon trading is now seen as one of the key weapons in the fight to reduce CO₂ emissions. Last year, the global carbon market tripled, trading 1.6 billion tonnes of CO₂-equivalent (CO₂e). It was worth €23 billion, and it will grow by 50% in 2007, says the World Bank. Although the public perception of the EU ETS may not be that positive, the first phase of the scheme, from 2005 to 2007, was always meant to be a learning process and so it has proved. The crash in price in May 2006 showed that generous allowances to businesses achieve nothing and gave the European Commission the impetus to impose stricter National Allocation Plans (NAPs). Because allowances were not auctioned and because there were too many of them, utilities were essentially given a valuable asset for free. The price of Phase 1 allowances plunged because they produced a windfall profit for electricity utilities at any price. They also made it cheaper for utilities to burn coal and pay for allowances than to burn cleaner fuels such as natural gas – which was obviously not the intended outcome.

As a result, pressure is growing for allowances in the EU scheme and others yet to be introduced to be auctioned. “My organisation and many others will push for a sale of credits and a limit to grandfathering,” said Leslie Lowe. “There has to be auctioning to give carbon a meaningful price and give businesses the incentive to cut their emissions.”

“I hope we could do it better than the Europeans,” said another US figure interviewed by *Friends of Europe*, while the US Ambassador to the EU, **C. Boyden Gray**, told the UK’s *Independent* newspaper⁴ that the EU ETS “is simply not working”.

However, according to a survey by Point Carbon released in March 2007, it is working, with 65% of respondents saying that the EU ETS had resulted in emissions abatement measures within their organisations. Experts believe that the second phase, which is linked to compliance with Kyoto Protocol targets, will be more successful. One European politician, while acknowledging current flaws in the ETS, said that the EU was influential in carbon trading schemes. “I am optimistic there will be a quick move to a carbon market, either through cap-and-trade or just carbon trading.”

The EU took a bold decision when it introduced the world’s first carbon trading scheme, laying itself open to ridicule and scepticism in order to show the world that carbon trading could work. No one could claim that the scheme has been perfect – but other nations have looked to the EU ETS for lessons on how to run such schemes. Cap-and-trade proposals in various US states, Japan, Australia and a planned carbon trading exchange in Beijing would not have happened without the existence of the ETS. Cap-and-trade “will force industry to be much more innovative and drive the subsequent investment in renewables on a utility scale,” says Leslie Lowe of the Interfaith Center on Corporate Responsibility.

⁴ www.independent.co.uk, February 10, 2007

Carbon capture and storage

One of the technologies carbon trading is expected to encourage is carbon capture and storage (CCS), a kind of Holy Grail for the energy community. It could be the answer to all the problems fossil fuels present, yet it is currently very elusive. All the technology needed for CCS is already available and in use commercially in other applications. Its best use for tackling carbon emissions is on power stations that burn any kind of fossil fuel, and it could remove up to 80% of emissions. GE and BP have recently unveiled plans for at least five CCS power stations around the world.

The technology can be used on oil- and gas-fired power stations, but what gets people really excited is its potential to make coal-generated electricity clean. Unlike oil and gas, coal is plentiful, cheap and widely distributed around the world, which helps to address concerns over price and security of supply. Unfortunately, it is also the most polluting form of fuel on the planet. But CCS could change all that. The main problem is that the technology is entirely unproven in power stations. **Jean-Pol Poncelet**, Adviser to the CEO and Senior Vice-President, New Energy Policy, at AREVA, says we should be wary of thinking that technology can solve all our problems. “We have to be careful not to pin all our hopes on CCS. We are far from a CCS solution – there is no single solution. We must keep all our options open,” he said at *Friends of Europe’s* summit on energy in November 2006.

There are a number of pilot schemes in Europe and the US, but CCS remains many years away from being a viable answer to climate change. CCS is inherently a long-term and expensive solution. This is where auctioning allowances in trading schemes can come in. “We need money for R&D and that should come from selling allowances,” says Leslie Lowe.

Is a renaissance of nuclear power likely in the EU and the US? Is nuclear energy essential for solving both oil dependency and reducing greenhouse gas emissions?

“I think the economics do not add up and the environmental benefits are overrated. We have not dealt with the waste and proliferation issues. Look at Iran – the same people who want to bomb it are those looking for a nuclear renaissance.”

Hans Verolme, Director, WWF Global Climate Change Programme

“Nuclear power has nothing to do with oil dependency. In terms of GHGs, renewables, cogeneration and energy efficiency will provide the bulk of the savings.”

EU politician

“No, not in the US, the politics are very difficult.”

Pat Doherty, Director, Corporate Social Responsibility, City of New York Comptroller’s Office

“Nuclear doesn't immediately help oil dependency as oil is mainly for the transport sector. However, nuclear is a key component for overall GHG reductions globally. Without it we have to ramp up other technologies even faster.”

EU energy business

Nuclear power

Many people think that nuclear power is the answer to the climate change problem. According to 85% of respondents to an opinion poll conducted by Gallup Europe and *Friends of Europe*, European and US leaders agree that efforts must be made to persuade the public that nuclear energy is an indispensable part of the future energy mix. It has much going for it – it is relatively low carbon, the technology is proven and the fuel is widely available from stable countries. In addition, recent advances mean it is now safer than it used to be and produces far less waste.

Yet, there was surprising scepticism about a nuclear resurgence among some interviewees. “It will take too long to build capacity, we need solutions now. I do not think it is a solution at all – nuclear power plants have often been delivered late and over budget. By the time any new plants are built, they may already be outmoded. Without huge government subsidies, it is a non-starter,” said Leslie Lowe, while **Pat Doherty**, Director of Corporate Social Responsibility at the City of New York Comptroller’s Office, said that the politics were too difficult in the US.

While one European official said that nuclear “was certainly a valid part of the energy mix”, another said that he remained sceptical. “Some EU members – Finland, the Baltic states and France, for instance – will rebuild their capacity, but to call it a renaissance is a bit strong. Some countries that are phasing out their capacity may extend the life of existing plants because if they abandon nuclear without replacing it with any other CO₂-neutral generating capacity, they will have trouble meeting their CO₂ targets.”

These are not the ‘usual suspects’ who are ideologically opposed to nuclear power, either. Their objections are more practical – the time it takes to build nuclear plants and their cost. Of course, those opposed to nuclear power make some telling points, too. “We have not dealt with the waste and proliferation issues. Look at Iran – the same people who want to bomb it are those looking for a nuclear renaissance,” says **Hans Verolme**, Director of the WWF Global Climate Change Programme.

Renewable energies

Renewables are moving rapidly into the mainstream, with wind approaching cost competitiveness with other forms of electricity generation and solar catching up rapidly. But their place in the public consciousness far outstrips their actual weight in the energy mix. Renewable energy has a key role to play in boosting energy security and cutting emissions. Much more needs to be done to encourage renewable energy technologies, including the

development of energy storage solutions that allow them to overcome the problems of intermittency that many of them have (see below).

Governments have a key role to play in encouraging the development of renewable energies. The previously mentioned targets introduced in the EU and similar measures elsewhere will play an important role. There are many subsidies in place, in Europe, the US and increasingly Asia, to encourage renewable energy production, but too many of them are short term and subject to political whims, meaning companies cannot invest with any certainty that their market will still be there in a year's time. There is nothing wrong with phasing out subsidies over time as technologies become more competitive, but this needs to be well signalled so companies can plan for the future.

Biofuels

Biofuels are key in dealing with both energy security and climate change because they are the only current renewable source of energy that can deal with emissions from vehicles. The last year saw a huge surge in biofuels investment, particularly in the US, where an increase in oil prices and high tariffs against imports from more efficient producers such as Brazil provided a favourable climate for the industry.

However, the fallback in oil prices and a corresponding rise in corn prices have exposed some fundamental issues with biofuels. One problem is that the price of your output (biofuel) is dictated by the price of oil, while the price of your input (corn) is entirely divorced from that and is subject to the vagaries of the weather and food demand. This means it can very quickly go from being hugely profitable to totally uneconomic. There are also issues with the efficiency of biofuels production. Fuels made from corn or maize, as in the US, require significant fossil-fuel inputs in their production, lessening their carbon-reduction impact, while biofuels that come from Brazil or South-east Asia, made from sugarcane or palm oil, may contribute to the depletion of the rainforest, Jeffrey McNeely, Chief Scientist of IUCN, the World Conservation Union, told the BBC in September 2006⁵. There are also problems of competition between food production and fuel production. The grain required to fill the petrol tank of a Range Rover with ethanol would feed one person for a year.

Significant cynicism surrounds the current enthusiasm for biofuels, with many people saying that it is at heart an attempt to woo farming voters in the US and to appease an agricultural sector hit by reforms to the Common Agricultural Policy in the EU. "There is a spike in support for ethanol whenever the Iowa caucus approaches – it has been the same going back 20-30 years," says Pat Doherty.

But we should not abandon these so-called first-generation biofuels. Many of these disadvantages do not apply to second-generation cellulosic biofuels, which will be able to produce fuel from waste from urban, agricultural and

⁵ <http://news.bbc.co.uk/1/hi/sci/tech/5369284.stm>

forestry sources. Apart from ending the competition for resources with the food industry, cellulosic ethanol provides greater cuts in GHG emissions than corn-based biofuels (80% as opposed to 10-20%) as well as providing 80% more energy than is required for its production, compared to corn-based ethanol's 26%.

A determined effort to roll out biofuels infrastructure for first-generation biofuels would mean that the means to distribute cellulosic biofuels will be already in place when they come to market, speeding their introduction. But biofuels can only be a partial solution – just as important will be measures to improve vehicle fuel efficiency, such as those announced by President Bush in his 2007 State of the Union address, and the EU plan to cut emissions from cars to an average of 120g per km.

Energy storage

The Cinderella of clean technology, energy storage has a vital role to play in increasing the role of renewable energies, but also in making existing transmission infrastructure more efficient. Renewable energy has been limited by the fact that it cannot be easily stored. This also means the creation of electricity infrastructures that can cope with the maximum power demand, even though it will only be needed a very small percentage of the time.

Although electricity is difficult to store, it is easy to store energy in other forms so it can be converted to electricity later. Energy storage technologies cut the need for new generation and transmission capacity. Baseload units can run outside peak times and store the energy to be sold at higher prices in peak times, making them more cost efficient and, in effect, increasing capacity by providing the ability to put power into the grid at times of heavy demand.

One criticism of renewable energy sources is that power output is not constant and often it is not generated when it is most needed. If the power can be stored and sold at peak times, making the energy 'dispatchable', the economics and the reliability of renewables become much more attractive.

Can fuel and vehicle efficiency standards be improved on both sides of the Atlantic? How will carmakers and consumers react?

"In Europe we have announced plans to reduce vehicle emissions, which will also lead to greater fuel efficiency. Carmakers will produce the vehicles consumers want. As a consumer myself my reaction to better fuel economy is – great!"

EU official

"US automakers do not seem to get that people want fuel-efficient cars. They are still wedded to SUVs that they are having to pay people to take off their hands."

Leslie Lowe, Programme Director, Energy and Environment, Interfaith Center for Corporate Responsibility

Energy efficiency

The easiest wins in cutting energy consumption are in efficiency measures, which are very simple and cheap to implement. They range from fitting energy-saving light bulbs, insulation and double-glazing to houses to more high-tech measures such as voltage optimisers and mini-CHP (combined heat and power) boilers. Other measures include energy-efficient appliances and phasing out stand-by buttons on electrical goods.

Clean energy analysts New Energy Finance say that smart metering could reduce energy consumption by 5-10%. It will also help to avoid costly blackouts, cut the need to spend money on new generation capacity and help the roll-out of decentralised power generation.

The UK's Energy Savings Trust calculates that energy-efficiency measures could cut consumption by a fifth, while environmental pressure group Greenpeace says that replacing incandescent lightbulbs with energy-saving bulbs would save the energy output of 25 medium-sized power stations in the EU.

But because energy efficiency is not high profile, it often gets ignored. According to the McKinsey Global Institute, a range of energy efficiency measures that are commercially justifiable are not being made because of market failures. For example, in rented accommodation, landlords have little incentive to cut energy use when tenants pay the electricity bills. Its research shows that energy productivity can be boosted by 64 million barrels of oil a day, cutting growth in energy demand to less than 1% a year, without compromising economic growth.

The global residential sector is the largest end user of energy, the McKinsey Institute says, accounting for 25% of demand, but by using available technologies the rate of growth for energy in the sector could be cut from 2.4% a year to less than 1%.

Energy efficiency needs a higher profile and more funding. It also requires some innovative policymaking to ensure that consumers and businesses have the right incentives to use energy more efficiently.

Things are moving in the right direction, with the Clinton Climate Initiative recently announcing a \$5 billion plan, backed by five global investment banks, to make existing buildings more energy efficient in 15 of the world's largest cities. The money would be lent to city governments and building owners and paid back through the money saved by implementing energy-saving measures.

Conclusion

The two key issues in energy today are security of supply and climate change. Competition for energy supplies has stepped up as a number of developing countries, such as China and India, have emerged as powerful players in the world economy. At the same time, there has been a trend towards nationalisation of supplies across the world at a time of increased instability in many of the largest energy producers.

Separately, the world has woken up to the threat to the world's climate posed by fossil fuel use, which it is now virtually certain has led to global warming and all the consequences that this entails.

Taken together, these two threats make it imperative that the EU and the US act to cut their usage of fossil fuels. The challenge is to do this without endangering economic growth, something that the US thought would be a consequence of signing the Kyoto Protocol. But the signs are that an international consensus is emerging on the need for a successor to the Kyoto Protocol – which may well be a global carbon trading system – to help the world move to a low-carbon economy.

The measures that will help achieve this include a range of regulatory initiatives and targets, carbon trading, energy efficiency measures and a variety of technological advances including CCS, renewable energies and energy storage. Debate rages about the merits of nuclear power and biofuels, but both are likely to play a role in attempts to decouple growth from carbon emissions. Serious investment in cutting emissions is needed – 1% of global output, according to Sir Nicholas Stern – but the consequences of not acting now are much more severe.

ANNEX 1

Friends of Europe and Gallup Europe high-level poll: EU and US Leaders' views on Energy Security

This poll was conducted by Gallup Europe for Friends of Europe and the findings are based on responses from 187 high-level policymakers and opinion-leaders.

Main Findings

1. A STRONG MAJORITY OF LEADERS ARE PESSIMISTIC ABOUT THE LONG-TERM OUTLOOK FOR ENERGY SECURITY

The majority (70%) of European and US leaders who responded to our survey agree that the long-term outlook for energy security is unlikely to improve, 50% mostly agree and 20% agree completely. In contrast, 23% mostly disagree and an additional 7% of respondents completely disagree with this statement.

Results:

To what extent do you agree or disagree with this statement: *“Long-term outlook for energy security is not likely to improve”*

US		EU
13%	Agree Completely	32%
50%	Mostly Agree	51%
29%	Mostly Disagree	13%
8%	Completely Disagree	4%

Highlights from some of the responses:

§ *Looked at under the aspect of climate change, none of the fossil sources of energy, whether domestic or imported, are secure because [they are] not sustainable.*

THINK-TANK LEADER/ACADEMIC

§ *A combination of present and potential political uncertainties and instabilities, under-investment and increasingly difficult exploration conditions, plus present and potential greater demand from countries like India and China, offers little to be complacent about. Europe might push energy economy policies: America won't.*

THINK-TANK LEADER/ACADEMIC

§ *The US continues to refuse to embrace conservation as the cornerstone of energy independence. The energy outlook could improve dramatically and quickly if we were to insist on the National Highway Traffic Safety Administration changing the Corporate Average Fuel Economy (CAFE) standards to require greater fuel*

economy for all classes of vehicles. Additional sources of power, such as nuclear and wind, also need to be expanded greatly in order to provide for long-term growth.

SENIOR POLICYMAKER

2. EU AND US LEADERS ARE SPLIT ON THE ISSUE OF WHETHER THEIR FOREIGN POLICIES WILL DIVERGE AS A RESULT OF COMPETITION FOR SCARCE ENERGY RESOURCES

European and US leaders in our survey nearly split on the issue of divergence in their foreign policies due to competition for scarce energy resources. Of the respondents, 41% mostly agree and 3% agree completely that as Europe and the US find themselves competing for scarce resources, their foreign policies will begin to diverge. However, the opposite view is held by 47% of respondents who mostly disagree and an additional 8%, who completely disagree, and think that EU and US foreign policy will not diverge despite mounting competition for scarce resources.

Results:

To what extent do you agree or disagree with this statement: *“As Europe and America find themselves competing for increasingly scarce energy resources, their foreign policies will begin to diverge.”*

US		EU
6%	Agree Completely	*
33%	Mostly Agree	54%
51%	Mostly Disagree	41%
10%	Completely Disagree	6%

**less than one percent*

Highlights from some of the responses:

§ *The key question is not, ‘Who competes more cleverly over the energy resources?’, but ‘Who learns faster to run a successful economy using much fewer resources?’*

NGO LEADER

§ *Differences in approaches may occur from time to time in specific situations, but the security of both Europe and America is in the interests of both parties.*

PRESS

§ *Their companies will compete commercially to supply both the EU and the US, but foreign policy will have long-term stability as a goal. There will often be disagreements on how to achieve this, but it will not be competitive in the commercial sense, although there will be competition to win support for different approaches to increasing stability.*

BUSINESS LEADER

§ *There is already – and has been for a very long time – a wide gap between what Americans and Europeans pay for their energy, and that has not substantially caused a divergence of policy. In fact, I believe that America and Europe will be forced naturally to develop joint ventures in future energy alternatives, which could drive foreign relations farther away from foreign energy dependency.*

SENIOR POLICYMAKER

§ *People do not get elected to office by placing anyone except their own constituency first. The body politic of representative democracies pretty much prevents co-operative multilateral strategies on fundamental issues of survival.*

SENIOR POLICYMAKER

3. EUROPEAN AND US LEADERS AGREE THAT EFFORTS MUST BE MADE TO PERSUADE THE PUBLIC THAT NUCLEAR ENERGY IS AN INDISPENSABLE PART OF THE ENERGY MIX

Large majorities of the EU and US leaders (85%) that we surveyed agree that efforts should be made to persuade the public that nuclear energy is an indispensable part of energy mix; 64% completely agree and an additional 21% mostly agree with this. Still, 11% mostly disagree and 4% completely disagree with this statement.

Results:

To what extent do you agree or disagree with this statement: *“Efforts should be made to persuade the public that nuclear energy is an indispensable part of the energy mix in the next 30 years.”*

US		EU
66%	Agree Completely	60%
20%	Mostly Agree	23%
11%	Mostly Disagree	10%
3%	Completely Disagree	7%

Highlights from some of the responses:

§ *No other choice for Europe to remain competitive.*

BUSINESS LEADER

§ *We have enough experience with nuclear, and the right mix of technology options, to ensure that nuclear power is safe, that disposal of nuclear wastes is handled appropriately, and that non-proliferation concerns will be addressed. Climate change is a much more serious concern than the use of nuclear energy.*

SENIOR POLICYMAKER

§ *A central issue will be to figure out how to use nuclear power to affordably meet the needs of the developing countries without exacerbating the issue of diverting nuclear material for weapons.*
 SENIOR POLICYMAKER

4. TWO IN THREE LEADERS AGREE THAT NEW TECHNOLOGIES, IMPROVING ENERGY EFFICIENCY AND THE USE OF RENEWABLES WILL EASE THE PROBLEM OF ENERGY SECURITY

Two-thirds of EU and US leaders in our sample agree that new technologies will help to ease the problem of energy security. Half of the respondents mostly agree and an additional 16% completely agree that new technologies combined with improvements in energy efficiency and the increasing use of renewables will substantially reduce the challenge of energy security. However, nearly a third (31%) mostly disagree and 3% completely disagree that new technologies will help to lessen the energy security issue.

Results:

To what extent do you agree or disagree with this statement: *“The problem of energy security will be substantially eased by the growing use of new technologies such as oil-sand extraction and deep-sea drilling, combined with improvements in energy efficiency and the growing use of renewables.”*

US		EU
17%	Agree Completely	15%
41%	Mostly Agree	64%
38%	Mostly Disagree	20%
4%	Completely Disagree	1%

Highlights from some of the responses:

§ *Energy security perhaps may benefit, but environmental and physical security will not by any means be eased by continued use of fossil fuels.*
 BUSINESS LEADER

§ *This question is mixing two things: a) the problem of energy security will not be eased by exploiting new sources of oil. This would mean to speed up the catastrophic consequences of climate change, which will in consequence make the world much more insecure. b) Energy efficiency and renewables are the best way to tackle the problem of energy security. To achieve that, the EU must set the necessary economic and political framework (e.g. improved buildings directive, eco-design directive, legally binding regulation on the CO₂ emissions of cars, end of subsidies to fossil fuels and nuclear, change of research policies, etc.)*
 THINK-TANK LEADER/ACADEMIC

§ *You must not mix renewable energies that are beneficial in terms of climate and the exploitation of fossil energies like oil sands or heavy oils in Canada and Venezuela. As of 2020 all coal- or oil-fired power plants that do not separate and store CO₂ should be banned.*

THINK-TANK LEADER/ACADEMIC

§ *This will depend on political will to take some difficult decisions on energy pricing.*

SENIOR POLICYMAKER

5. LEADERS ARE SPLIT OVER WHETHER THE MAJOR CHALLENGE IS CLIMATE CHANGE OR ENERGY SECURITY

A little more than half of the respondents (55%) to our survey concur that climate change is the major challenge rather than energy security, 36% mostly agree and 19% completely agree with this. On the other hand, 35% mostly disagree and 11% completely disagree that climate change is the major challenge. European leaders in our sample (73%) are much more likely to agree that climate change is the bigger challenge than American leaders (44%).

Results:

To what extent do you agree or disagree with this statement: *“Climate change, rather than energy security, is the major challenge.”*

US		EU
11%	Agree Completely	32%
33%	Mostly Agree	41%
41%	Mostly Disagree	24%
15%	Completely Disagree	3%

Highlights from some of the responses:

§ *Climate change is a complicated and confusing scientific issue that clearly should be monitored and understood better through continued research. However, efforts should be spent less on attempting to stop or mitigate global warming and more on finding ways to adapt to changes that may result from such warming.*

BUSINESS LEADER

§ *The facts regarding global warming are still inconclusive and, while the balance seems to point toward a problem, that is still a many-decades problem. The energy situation is a much more near-term problem which could destabilise the world as we know it.*

SENIOR POLICYMAKER

§ *They are both significant challenges. It is unhelpful and largely meaningless to ascribe more importance to one than the other.*

SENIOR POLICYMAKER

§ *Humanity must develop a new type of energy supply that will be totally CO₂-emission free, by 2100 at the latest. If we fail on this, goodbye western civilisation. This is possible technically! It only requires the US and EU to become serious in tackling climate change. Not in 2020 but now!*

THINK-TANK LEADER/ACADEMIC

6. ACCORDING TO MOST EU AND US LEADERS, CLIMATE CHANGE AND ENERGY SECURITY REQUIRE THE SAME POLICY RESPONSES

According to our sample, 68% of the leaders agree that climate change and energy security are two sides of the same coin, and demand the same policy responses. Out of those, 49% mostly agree and 19% agree completely with the statement. Conversely, 22% of the respondents mostly disagree and 11% completely disagree with this view.

Results:

To what extent do you agree or disagree with this statement: *“Climate change and energy security are two sides of the same coin, and demand the same policy responses.”*

US		EU
18%	Agree Completely	21%
45%	Mostly Agree	54%
24%	Mostly Disagree	18%
13%	Completely Disagree	7%

Highlights from some of the responses:

§ *Yes, they are both linked to the use of fossil fuels for energy production. Mitigating climate change requires reducing the use of fossil fuels, which would also help us to deal better with energy security.*

THINK-TANK LEADER/ACADEMIC

§ *Both are important, but only with the correct measures can they be aided simultaneously. For example, diverting investment towards non-GHG renewables would help solve both, but investing more in coal (a US example) would benefit only energy security (and only the US's).*

BUSINESS LEADER

§ *Today's definition (this administration) of energy security is ‘more for us at any cost’. Climate change is not a flip-side of this argument, it is a result of this argument.*

SENIOR POLICYMAKER

7. THREE-QUARTERS OF LEADERS THINK THAT OIL IS NOW AT AROUND THE RIGHT PRICE

A significant 69% of our respondents agree that oil is now at around the right price. For the last 30 years, energy had been (before the Iraq crisis) gradually getting cheaper in real terms and this eliminated incentives to be more efficient and to develop alternatives. However, around one in three (31%) of EU and US leaders think just the opposite. European leaders (78%) tend to agree with this statement more than US leaders (63%).

Results:

To what extent do you agree or disagree with this statement: *“Oil is now at around the right price. Until the Iraq crisis, energy had for 30 years been getting progressively cheaper in real terms, thus removing the economic incentive to be more efficient and develop alternatives.”*

US		EU
12%	Agree Completely	8%
51%	Mostly Agree	70%
25%	Mostly Disagree	19%
12%	Completely Disagree	3%

Highlights from some of the responses:

§ *Yes, oil was so far too cheap to bring forward the necessary efficiency revolution. No, oil and other fossil fuels do not yet have the right price. If one takes into consideration the enormous costs of climate change, it is still too cheap.*

NGO LEADER

§ *The oil price needs to double in order to provoke the necessary revolution of our energy systems and our lifestyles. A doubling of oil prices – to \$120/150 per barrel – is bound to come. The faster it comes the better it will be for the future of humanity. We can easily digest another doubling of oil and gas prices. It will not come overnight. But we should prepare for it now.*

THINK-TANK LEADER/ACADEMIC

§ *The transportation market is relatively elastic to price. For real change that does not do economic damage (inflation) and adversely affect rural and poor parts of populations we need very tough efficiency mandates on transport and also on housing and domestic appliances. The market can compete within these mandates. Cap-and-trade systems for carbon are essential to this.*

BUSINESS LEADER

§ *We should have a floor on the price of oil to ensure that we push ahead with efficiency improvements, recovery of oil from unconventional resources, and implementation of alternative technologies. If the floor is supported by taxes, these could provide revenue for technology development, demonstration and implementation.*

NGO LEADER

8. ALMOST TWO-THIRDS (63%) OF LEADERS BELIEVE THAT CLIMATE CHANGE WILL BE MET BY TECHNOLOGICAL BREAKTHROUGHS

According to the poll, 63% of EU and US leaders are of the opinion that technological breakthroughs will eventually address climate change; 50% mostly agree and an additional 13% completely agree with this view. However, 30% mostly disagree and 7% completely disagree that technological breakthrough will resolve the problem of climate change. US leaders are more positive about the potential technological breakthroughs than Europeans. Almost three times more US leaders (17%) agree completely that technological breakthroughs will meet the challenge of global climate change than EU leaders (6%).

Results:

To what extent do you agree or disagree with this statement: *“The challenge of climate change will eventually be met by technological breakthroughs.”*

US		EU
17%	Agree Completely	6%
48%	Mostly Agree	53%
27%	Mostly Disagree	35%
8%	Completely Disagree	6%

Highlights from some of the responses:

§ *We need a dramatic change in lifestyle and how we use energy, from the design of our urban communities to the sustainability of our economies. Technology breakthroughs without behavioural and settlement changes will amount to next to nothing.*

SENIOR POLICYMAKER

§ *We should not hope for miracle solutions. There will be no dramatic technological breakthroughs. We have the technology at hand, from wind to waves, biomass, PV and solar heat. We should not count on nuclear fusion. If it will ever be feasible technically and economically, it will come too late, after 2050. Humanity has to act now, starting in the USA, and reduce CO₂ emissions.*

THINK-TANK LEADER/ACADEMIC

§ *Technological breakthroughs are needed but they may come too late to prevent the dangerous rise of the temperature. Technological development alone is not sufficient, we also need political measures and changes in our daily lives.*

THINK-TANK LEADER/ACADEMIC

§ *The technological breakthroughs exist already and will develop further, but for being used, they need citizens' will and political rules and regulations (like Kyoto, hybrids, biofuels, CO₂ severe limits, etc.).*

BUSINESS LEADER

The following section of this poll deals specifically with responses from EU leaders

9. NINE IN TEN EU LEADERS BELIEVE THAT ENERGY SECURITY SHOULD BE AN EU-LEVEL RESPONSIBILITY

The survey asked leaders in Europe about their specific opinions on energy security and the European Union. An overwhelming majority (90%) of EU leaders strongly believe that energy security should be addressed at the EU and not at the national level.

Results:

“Should energy security be an EU-level issue or a strictly national responsibility?”

EU	
90%	EU's responsibility
10%	National level

Highlights from some of the responses:

§ *Energy security and climate policy have to be tackled at global level. The EU has to lead. The job exceeds the capacity of individual Member States. Still, each Member State needs a strategy adapted to its particular conditions. Wind energy may supply Denmark with energy, but not Slovenia. Biomass and hydropower are an effective answer in Sweden but not in the Netherlands.*

THINK-TANK LEADER/ACADEMIC

§ *National level because people will insist on this via their national government, even if a more efficient and secure method would be via the larger clout of the EU.*

BUSINESS LEADER

- § *On energy security the EU should speak with one voice, and not allow itself to be too dependent on one single provider.*
PRESS

10. A SUBSTANTIAL MAJORITY OF EU LEADERS BELIEVE THAT THE CREATION OF AN EU ENERGY AGENCY WOULD BE A POSITIVE DEVELOPMENT

Close to seven in ten (69%) EU leaders would welcome the creation of an EU energy agency and see such an agency as a positive development. But 31% of our survey respondents do not see a need for another EU agency of this kind. Seventeen percent (17%) mostly disagree and 14% completely disagree that an EU energy agency would be a positive development.

Results:

To what extent do you agree or disagree with this statement: *“Would the creation of an EU energy agency be a positive development? If so, what should be its role?”*

EU	
25%	Agree Completely
44%	Mostly Agree
17%	Mostly Disagree
14%	Completely Disagree

Highlights from some of the responses:

- § *Co-ordinate an EU framework energy policy to avoid a nationalistic view (the famous national champions).*
BUSINESS LEADER
- § *Initially persuade Europeans of the need to act at the European level in the world energy market – if we act nationally it will be a case of divide and rule. Negotiate with energy suppliers for future energy needs and security of supply, but I suspect security of price will be too difficult.*
BUSINESS LEADER
- § *I am not sure that it would be able to guarantee a flexible, innovative policy. Energy security could be integrated in the ESDP [European Security and Defence Policy] as a whole.*
PRESS
- § *What should an energy agency do? We need the political will. We need an EU commissioner in charge of climate policy. We need a European strategy for enhancing awareness of 500 million citizens, a European-inspired programme for upgrading our stock of buildings with the most advanced technologies of heat insulation. We need a European initiative for reducing the average CO₂ emissions of vehicles by half at the horizon of 2020*

etc. We cannot expect an energy agency to show political leadership. The International Energy Agency in Paris has failed to demonstrate political leadership. We do not need a replica at the European level.

THINK-TANK LEADER/ACADEMIC

11. EU LEADERS WOULD STRONGLY SUPPORT THE RISE OF ENERGY POLICY TO THE TOP OF THE EUROPEAN UNION'S AGENDA

An overwhelming majority (93%) of the EU leaders agree that energy policy has been a much-neglected domain in EU strategy and should therefore be at a top priority of the Union's political agenda. Only 6% of those polled mostly disagree and 1% completely disagrees with this view.

Results:

To what extent do you agree or disagree with this statement: *“Energy policy has been a much-neglected area of EU strategic thinking, and should now rise to the top of the Union's political agenda.”*

EU	
50%	Agree Completely
43%	Mostly Agree
6%	Mostly Disagree
1%	Completely Disagree

Highlights from some of the responses:

- Energy policy has always been the EU stepchild. It has not done enough to encourage more research. It has failed to impose more stringent CO₂ emission quotas. The necessary marriage between environmental and economic aspects has been strongly biased in favour of the latter.*
(THINK-TANK LEADER/ACADEMIC)
- I believe the EU has to have a policy on future supplies to Europe. In the end people will vote for SUPPLY whatever that costs. We cannot go back to cutting wood. We cannot let national rivalry dominate energy, although last winter there were talks of some nations cutting supplies through their countries to others (the UK in particular had a problem).*
(BUSINESS LEADER)
- It should be left to a real market, not politics.*
(THINK-TANK LEADER/ACADEMIC)

12. EU LEADERS ARE EVENLY SPLIT ON WHETHER THE UNION’S REAL POWER TO AFFECT ENERGY POLICY LIES IN COMPETITION POLICY

EU leaders answering our survey are evenly divided in their views on the EU’s real power to affect competition in the energy market. The majority, 44%, mostly agree and an additional 6% agree completely that the only area where the EU has any real power to affect energy issues is in competition policy. The other half of the EU leaders do not agree that competition policy is the only real power the EU has with this regard; 27% mostly disagree and 23% completely disagree with this view.

Results:

To what extent to you agree or disagree with this statement: *“The only area where the EU has any real power to affect energy issues is in competition policy, where its interference in energy sector mergers and take-overs is in general unwelcome and is also irrelevant to energy security.”*

EU	
6%	Agree Completely
44%	Mostly Agree
27%	Mostly Disagree
23%	Completely Disagree

Highlights from some of the responses:

- *Competition is, up to now, the only area where EU has power on energy issues, and it is relevant to energy security but not sufficient.*
(BUSINESS LEADER)
- *Competition policy in energy sector mergers today has little to do with policy on future supply. As the demand and markets develop over the next several years today’s issues will be seen as irrelevant. A possible scenario if things go really badly wrong is a retreat into nationalism or at the other extreme the emergence of a European single source buyer.*
(SENIOR POLICYMAKER)
- *The location of the major pipelines and the influence of the EU in those regions is also important.*
(THINK-TANK LEADER/ACADEMIC)

13. THE MAJORITY OF EU LEADERS WOULD LIKE TO SEE AN EU ENERGY COMPETITION WATCHDOG

The large majority of EU leaders (84%) support the idea of having an EU energy competition watchdog to create a level playing field in energy. However, 16% believe in a national over an EU-level watchdog.

Results:

“Should we only look for a national or EU energy competition watchdog to create a level playing field in energy?”

84%	EU's responsibility
16%	National level

Highlights from some of the responses:

- *As cross-border ownership and supply grows we need an EU standard.*
(SENIOR POLICYMAKER)
- *At national level it has become totally ineffective to monitor competition in the energy field. Recent examples in France, Germany and Spain have amply demonstrated the need for an EU-wide merger control.*
(THINK-TANK LEADER/ACADEMIC)
- *Yes, but we don't need a new specific watchdog – just make the present institutional equipment function.*
(THINK-TANK LEADER/ACADEMIC)

ANNEX 2

Summary of the Atlantic Rendez-Vous Satellite Debate: America and Europe: Energy Collaborators or Competitors?

An “Atlantic Rendez-Vous” TV Debate
Between Washington DC and Brussels

Thursday 9 November, 2006



Speakers:

Spencer Abraham, Chairman of the Board, AREVA Inc. & Former US
Secretary of Energy

Andris Piebalgs, European Commissioner for Energy

Piotr Grzegorz Wozniak, Polish Minister of Economy

Moderators:

Giles Merritt, Secretary General, *Friends of Europe*

Keith Smith, Senior Associate in the Europe Programme,
Centre for Strategic and International Studies (CSIS)

About the debate

Both heavily reliant on imported energy, the US and the EU are equally vulnerable to the vicissitudes of international politics and have for many years based their foreign policy thinking on shared threat assessments. Will that continue to be the case, or are there signs of divergence as they each face increasing competition from Asia for scarcer energy supplies? And on climate change, how true is it to say that while Europe has championed Kyoto and is a pioneer in R&D on cleaner and more efficient energy, the US has yet to create a more environmentally friendly energy culture?

These and other questions were addressed by the satellite debate between Brussels and Washington DC entitled “**Are America and Europe energy collaborators or competitors?**”, co-organised by *Friends of Europe*, the European Commission Delegation to the US, Gallup Europe and the Centre for Strategic & International Studies (CSIS). The debate took place during *Friends of Europe's* summit “**Energy Europe: Security of Supply, Competitiveness and Environmental Sustainability**” on 9 November 2006.



EU and US – collaboration or competition for energy?

For **Keith Smith**, Senior Associate in the Europe Programme, Centre for Strategic and International Studies (CSIS), one key question is whether the US and the EU are competing in ways that increase the price leverage of the producers. “Does competition between us become more intense as world oil and gas prices increase? Is there something we could do to moderate those price increases through collaboration?”



Piotr Grzegorz Wozniak, Minister of Economy of Poland, cautions that it is important to remember that

there are more players than just the US and the EU. “Emerging economies are vacuuming every source of energy. There is no immediate solution to competition, but we should avoid framing the argument in terms of security of supply and security of demand. When we buy energy, we never consider the seller or security of demand. Poland cannot say it is competing for gas supplies because it has only one supplier.”

EU Energy Commissioner **Andris Piebalgs** stresses the importance of collaboration in dealing with energy markets. The EU and the US, which account for 40% of global energy use at the moment, have an interest in ensuring that energy markets work globally rather than having a series of bilateral agreements.

There are several areas of ongoing collaboration, says **Spencer Abraham**, including the International Thermonuclear Experimental Reactor (ITER), the partnership on the hydrogen economy and the carbon sequestration leadership forum. Superconductivity and nuclear power are other possible areas of collaboration. “It makes sense for these gigantic projects – carbon sequestration, hydrogen, fusion and nuclear energy – these are extraordinarily large projects, very expensive, where the collaboration of the top minds worldwide is the surest route to success and the cost is going to be more than one nation or group of nations will be able to bear by themselves.”

Giles Merritt, *Friends of Europe's* Secretary General, asks whether the foreign policies of the US and EU will diverge as they compete for scarce energy resources. The results of *Friends of Europe's* and Gallup Europe's poll are inconclusive as they show that EU and US leaders are split on the issue.

Spencer Abraham thinks a divergence unlikely. “We share far too many factors of heritage, years of traditional relationships to stray far from the historic nature of our friendship. We also have similar objectives. We want to see more sources of energy developed worldwide, more fuels developed and more countries with energy-producing capabilities thrive. We must and will work together.”

There are also common threats to existing sources of energy – those using energy resources as a political tool and terror threats to supply. “The challenges we both must meet bring us together, not apart,” Abraham says. Minister Wozniak illustrates this by referring to Russia’s energy strategy to 2020, which sets out five priorities for the gas industry, one of which is support for Russia’s political interests in Europe and Asia.

For the US, Abraham says, Venezuela is acting in a similar manner. “In a tight marketplace with limited spare production capacity, any single producer wields considerably greater clout than before. In the 1970s it took all the OPEC countries working together, because there was spare capacity. Today any major supplier has leverage of a political sort,” says Abraham.

Yet, Ambassador Smith believes that energy security means something a little bit different on both sides of the Atlantic. “One of the changes in the last 10 years has been the takeover of the energy industry by governments such as Russia and Venezuela, which has implications for energy security around the world, a detrimental effect on competition, as well as affecting investment decisions – government decisions are slower and more politicised.”

Taxation: an instrument to shape energy strategies?

According to Giles Merritt, taxation is a sacred cow that no-one mentions, but it is going to be the crucial instrument to shape future strategy on energy security and climate change. Andris Piebalgs says that taxation is a huge instrument that makes the biggest difference on the demand side – diesel is used in Europe only because taxation changed the pattern of consumption, for example. But there will be no major new tax measures proposed in the



short term, because they would not be endorsed by national governments (in the taxation field EU Member States take decisions based on the unanimity principle).

Piotr Grzegorz Wozniak stresses that taxation should be a matter for Member States, allowing them to decide their own energy mix. “We would

like to see energy flowing tax free in and out of the EU.”

US sentiment on taxation has been made clear in the last mid-term elections, says Spencer Abraham. California, the most liberal state in the US in terms of environmental policy, had a ballot proposal for an energy tax on Californian oil production, with the proceeds to go towards alternative energy technologies. “It was soundly defeated, so it gives a sense of the mood of voters in the US on higher energy taxes.”

The US has a different approach, he continues – a policy of encouraging alternative energy through production tax credits for renewable energy and of encouraging the use of natural gas vehicles. “It has been used as an incentive rather than a price signal and a demand destroyer, but what has been missing is consistency.” Tax policies have not been permanent, which has discouraged some people from taking advantage of them. In 2005, a new set of policies was introduced to encourage nuclear power.



Carbon: differences across the Atlantic

Commissioner Piebalgs identifies a crucial point of difference in the carbon price. “If we want to attract investments to Europe, we want the ETS to continue in the long run because then private investments will come and do the job I can’t do – I can support some investments in new research but I need the force of the market to support this activity.” He adds that the US and the EU “clearly face the same challenges. We should use our common force to create a new energy perspective for the world.” The Commissioner’s big dream is “carbon markets that are very close on both sides of the Atlantic.”

A question from **Paal Frisvold**, Policy Adviser at Bellona Europa, about the possibility of a US emissions trading scheme prompts an interesting response

from Spencer Abraham. “I think there is a high probability the US will adopt some kind of carbon framework over the next five years,” although it will probably not be Kyoto. “There have been legislative efforts led by Senators McCain and Lieberman to try to begin the process and something is quite likely in the next 4-6 years. I think the individual actions of states will make it happen sooner rather than later.”

Biofuels

President Bush’s policy of encouraging biofuels is all about avoiding energy dependency – says a participant in Washington – without any consideration of the environmental benefits.

Minister Wozniak is in favour. “We have just introduced a policy encouraging them,” he said. “There are big advantages for our farmers and we have lots of land. Nor is there anything wrong with reducing oil dependency. Biofuels are more environmentally friendly than oil or gas and it is right to develop them as widely as possible.”

Commissioner Piebalgs reaffirms that the EU is also promoting biofuels, particularly second-generation products. “They will not replace oil, but they help diversity of supply, which helps security of supply. It is one way of addressing the environmental impacts of transport.”

Energy security = sustainable development



Is climate change more important than energy security? Americans are less convinced that climate change is the big challenge than Europeans, according to *Friends of Europe's* and Gallup Europe's poll. “It is better rephrased as sustainable development,” says Abraham. “Moving in the direction of energy security necessarily moves us in the direction of sustainable development. We attain energy security by diversifying types and sources of energy. That means more nuclear, more renewables, more domestically sourced energy. I don't think energy security and climate change have to be viewed as an either/or choice, they can be addressed together.”

Commissioner Piebalgs agrees. “We have no other option but to address both problems in the same way. We don't want action taken in a crisis situation because energy investments take a very long time and cost billions. If we start now, very ambitiously, with market encouragement for new technologies, you can achieve results reasonably fast.” With mixed signals coming from Russia,

the key is to maximise the number of sources of energy production and the number of pathways to consumers, thus enhancing energy security.

For Wozniak, the definition of security of supply is the constant opportunity to choose their supplier and the direction of supply. “We take 90% of our crude from the east, but we have alternative sources available. On gas, our eastern partners cut supplies overnight – our system collapsed. I had to cut supplies to the chemical industry – we were about to privatise this industry, so investors discounted the industry because of the insecurity of supply. We faced a catastrophe immediately.”

NOTES

NOTES



Friends of Europe Les amis de l'Europe

Friends of Europe thanks its VIP partners (Visibility - Input - Platform)



European Active Citizenship

With the support of the European Commission:

Support for bodies active at European Level
in the field of active European Citizenship