Rio offers the chance to look at things differently

During a recent speech at a meeting of the World Social Forum, Brazilian president Dilma Rousseff explained how the foundations for growth in her country are being built on a sustainable model

It is very important that this meeting of the World Social Forum is taking place a few months before the United Nations Conference on Sustainable Development – Rio+20. The financial crisis and the uncertainty hanging over the future of the world economy give Rio+20 a special meaning.

In much of the developed world, the crisis was addressed by regressive fiscal policies, which have adverse social and environmental consequences and bring dangerous threats of unemployment, xenophobia and authoritarianism, paralysis in confronting global warming, and threats to world peace.

A few months ago, I was at the G20 Cannes Summit, which proposed a new world, with new ideas. Despite the advances eventually made there, I confess I was not satisfied with the results. It is not easy to generate new ideas and alternatives when we are dominated by political and ideological prejudice.

We are familiar with this story. In the 1980s and 1990s, we faced profound macroeconomic imbalances. Political and ideological prejudices imposed a conservative model on the countries of Latin America that, in Brazil, caused stagnation, the loss of democracy and sovereignty, and deepened poverty, unemployment and social exclusion. Today, in Europe, these failed ideas are being put forward again.

Rio+20, in which heads of state and government will participate, as well as significant sectors of civil society, should be an important occasion in a process of generating new ideas.

Rio will focus on significant environmental issues and the problems of climate change. The main topic of the debates will be a new model for development, which is made up of three dimensions – economic, social and environmental. From now on, we want the word 'development' to be always associated with the term 'sustainable'.

Alongside the Millennium Development Goals, it is also necessary to establish the goals of sustainable development. These goals, which include commitments and targets for all the countries of the world, are based on fighting poverty and inequality, and on environmental sustainability.

We assume that it is possible to grow in an inclusive way, as well as protecting and conserving. What will be under discussion at Rio+20 is a development model that can link growth and job creation; the eradication of poverty and the reduction of inequalities; social participation and the strengthening of rights; education and technological innovation; and the sustainable use and preservation of environmental resources.

The place that Brazil occupies in the world is not the result of any economic miracle, as it was in the past. It is a result of the efforts of the Brazilian people and their government, who chose a new path

In Copenhagen, almost three years ago, our government took on new responsibilities on climate change. We presented to the world, and here in Brazil, our voluntary commitment to significantly reduce greenhouse gas emissions. Unfortunately, some countries were reluctant – and even today are reluctant – to announce what they intend to do to reduce emissions. We are the country that, according to the United Nations, has done the most to reduce greenhouse gas emissions across the globe. These commitments are part of the great transformation that has been under way in Brazil over the past nine years.

What sustainable development means

When we talk about sustainable development in my government, I want to make it clear what we are talking about: for us, sustainable development means the accelerated growth of our economy in order to distribute wealth; it means the creation of formal jobs and an increase in workers' income; it means income distribution to put an end to misery and poverty, with public policies to improve education, health, public safety and all services provided by the state; it means balanced regional income growth, to correct the imbalances among the regions of the country and to correct the underdevelopment of one part of the country, and it means the creation of a broad market for mass consumer goods to support internal development. It also means that Brazil is changing, and every day we will help it change, from the socioeconomic point of view, into a middle-class country; it means development, with environmental sustainability a prerequisite.

Our choices in energy, food security, logistics infrastructure and technological innovation take into account the sustainable use of our natural resources.

Furthermore, sustainable development means strengthening social participation mechanisms and our democracy; it means encouraging and defending our values, our culture, our cultural diversity; finally, it means a sovereign and competitive integration in the world.

The huge problem that President Lula began to unravel in 2003 was that of exclusion and social inequality. We are winning this battle, as 40 million Brazilians have been lifted out of poverty and ascended to the middle class. Our efforts to eradicate this social problem in the coming years will be seen in our determination to implement the 'Brasil sem miséria' (Brazil without poverty) programme.

The place that Brazil occupies in the world is not the result of any economic miracle, as

it was in the past. It is a result of the efforts of the Brazilian people and their government, who chose a new path. Brazil is now a different country. Nobody – nobody – and no group can ever take that from us. Today, we are a stronger, more developed and more respected country – a country that lives in harmony with its neighbours in South America, Latin America and the Caribbean, and wants to build with them a centre of development and democracy in the world.

Similarly, we have opened new relations with our African brothers, and with the Arab world, paying special attention to Palestine, which we hope can soon become a free state, a peaceful and democratic state, with guaranteed sovereignty.

In the BRICS countries of Brazil, Russia, India, China and South Africa, we stand for a new economic and multipolar political world order, which is fairer and more democratic. In all global forums, we favour multilateralism, disarmament and negotiated solutions to all threats to world peace.

Recent studies by the Organisation for Economic Co-operation and Development show growing income concentration and increased inequality in developed countries and even in some emerging economies. The downside of this – and it is happening now – is soaring unemployment and widespread poverty around the world.

These two phenomena – unemployment and social inequality – are particularly cruel for rich nations, which won rights and have now lost them. And they are also cruel because they strike primarily young people, women and immigrants.

The dissonance between the voice of the markets and the voice of the streets seems to be increasing in developed countries, jeopardising not only social achievements, but democracy itself.

The dawn of a new era

The anger of young people, women and militants who occupy the streets in cities around the world is an important symptom that cannot be disregarded. In this context, the women of the world have taken an increasingly central and decisive role in promoting change. I am sure that we women will do everything to ensure that the 21st century is the century of women.

Civil-society organisations and progressive governments: each in its way can turn these first years of the new millennium into the beginning of a new era. To this end, it is crucial to strengthen the South-South solidarity and cooperation that unite our peoples. The great movements of humanity are created by action, and also hope. It was the hope that moved my generation decades ago. Today, when I look at the path travelled and the goals achieved, I can only tell you – it was worth it. It is this hope that unites us and mobilises us for Rio+20. It is this hope that should always guide us in the search for a new, inclusive and sustainable way of life.

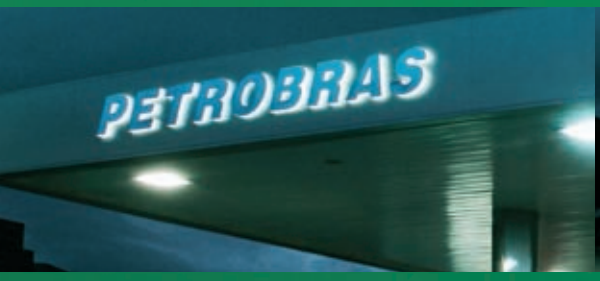
Knowing that the role of civil society will be crucial to the success of Rio+20, I am counting on your mobilisation, your engagement and your presence in Rio de Janeiro. I am sure another world is possible. ■

Unofficial translation of an address by President Dilma Rousseff at the World Social Forum in Porte Alegre, Brazil, on 26 January 2012

Although poverty is still an important issue in Rio de Janeiro, the Brazilian government has made huge strides in overcoming social inequality



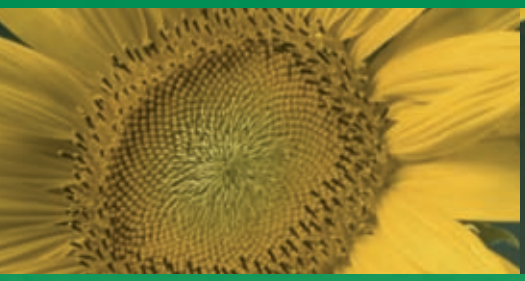
I il compan



I I I I





i ld for i logy and leadershi i ltr - lorati ı . It’s also a pi i i ls and i i lternatı .

ww .

But, more i ly, Petrobras i i i l and envi l development and fosters good ci i i lues, culture and the art . If the future i llenge, Petrobras i ı .

BR PETROBRAS

CHALLENGE IS OUR ENERGY

Enhancing energy security: lessons from Germany and Japan

For different reasons, two G8 countries have made the decision to abandon their nuclear generating capacity and focus on renewable energy instead

By Miranda Schreurs, member, German Environment Advisory Council (SRU)

Energy security is a major concern for countries around the globe, as well as in the G8 more specifically. In the United States, concerns about energy security have led to offshore oil and shale gas drilling and talks about building more nuclear power plants.

In Canada, exploitation of the oil sands is bringing the country new wealth, but at a cost to the environment. Russia continues to lead in fossil fuel extraction and is also looking to unexplored reserves in the Arctic waters. France, which relies heavily on nuclear energy, has suffered energy shortages at periods of peak demand that have been offset by energy imports from its neighbours.

The G8 has been dominated by energy models that depend on fossil fuels (coal, oil, natural gas) and nuclear energy. However, new models that could be both attractive and positive for energy security are emerging in Germany and could take root in Japan as well. Germany and Japan are both in the midst of energy revolutions.

Germany's revolution is planned from above. Japan's is an unplanned response to a crisis. For different reasons, both countries are likely to lead the G8 in promoting energy efficiency improvements and in developing new low-carbon energy systems. They will provide other countries with alternative energy models to consider as they develop their own energy markets.

The 1986 Chernobyl nuclear accident triggered Germany's energy transition. Soon after the explosion, the German government established an environment ministry and gave it responsibility both for nuclear safety and the development of renewable energy.

At the beginning of the 1990s, Germany derived only three per cent of its electricity from renewable energy sources. Today, as a result of policies to promote renewables and strong public support, Germany generates 20 per cent of its electricity from a combination of wind, solar, hydro and biomass. The German government has set ambitious goals: to generate at least 35 per cent of electricity from renewables by 2020, 50 per cent by 2030 and 80 per cent by 2050.

Changes are to be made in the heating and mobility sectors as well, with 60 per cent of all energy from renewables by 2050. The plan has been likened to the Marshall Plan in scale, or to the Apollo project in terms of ambition.

A future in renewables

The transition to a renewable energy future is to be done at the same time that dependence on nuclear energy is to be phased out. As early as 2001, the German government had established a nuclear shutdown law, with the closure of the last nuclear plants envisaged for the early 2020s.

Although a decision was made in 2010 to slow the phasing out by extending the licences of operating nuclear power plants, this decision was reversed in response to the Fukushima nuclear meltdown in Japan in March 2011. Following the advice of an ethics commission established to review the implications of Japan's nuclear reactor problems for Germany, a cross-party consensus for a more rapid phasing out was reached. Eight reactors were decommissioned in 2011. Nine remain and will be taken off the grid in the coming decade, with the next one to be shut down in 2015.

What does this energy transition mean for Germany, Europe and beyond? It means that the entire German energy economy needs to be restructured. Some worry about what this will mean for energy-intensive industries or for household electricity prices, but German society appears willing to pay higher costs up front in order to realise higher energy security

As part of its energy strategy, Germany is keen to exploit the potential of offshore wind farms for electricity generation

and a cleaner environment in the future. It is a little like investing in a university education. The initial costs are high, but the expectation is of a payback in the long run.

There is a strong sense that the energy transition is an opportunity for the country and that it will lead to technological, structural and process developments that will provide new, exciting job opportunities. Were Germany not to choose this path, the country would also face higher energy costs for conventional energy imports. It will be important to cooperate with neighbouring European countries in promoting transition across the region and also export newfound know-how to developing countries.

Reaching these goals will not be easy or inexpensive. There will be winners and losers. Some investments can pay off relatively quickly, such as improvements in energy efficiency in the residential and office sectors. Others will be more costly, such as the new high-voltage electricity grid infrastructure that will be needed to transport electricity from wind from the north of the country to the south. The higher the energy efficiency of the economy, the less energy is demanded, and this will mean a reduction in the new energy infrastructure needed.

New models that could be attractive and positive for energy security are emerging

Big hopes rest on offshore wind power as the wind blows stronger and more steadily 100 kilometres offshore than on land. Universities, think tanks and enterprises are researching possibilities for electricity storage systems and smart-grid technologies.

A major shift in planning

The energy transition in Germany has been long in the making. In Japan, the transition is being forced on the country by a natural and human-made disaster, the proportions of which are still not understood.

Japan derives about 30 per cent of its electricity from nuclear energy – or at least that was the case until the three reactors at the Fukushima Daiichi nuclear power plant experienced meltdowns. A little more than a year later, the last of Japan's 54 nuclear reactors is scheduled to be taken off the grid for scheduled safety checks.

Despite the efforts of some in government and the energy industry to restart the nuclear reactors, prefectural governors such as Shiga Prefecture's Yukiko Kaba (only the fifth female governor in the history of Japan) have blocked these calls, demanding that society be given a chance to discuss what kind of energy future it wants and what risks are associated with maintaining nuclear energy.

In the meantime, major shifts in energy planning are under way. Plans to build new nuclear power plants have been scrapped. Some cities – like Tokyo – have taken plans into their own hands and established their own renewable energy targets.

The question is how many nuclear power plants will return on line and how quickly plans will be laid to develop renewable energy alternatives. Already, Japan has shown the world what is possible after a crisis in a society with a strong sense of community. Not only did the country respond to the horrible aftermath of the March tsunami that claimed the lives of 20,000 and the homes and livelihoods of many tens of thousands more, but people and industry also responded to requests to conserve energy. Electricity demand was reduced by 15 per cent in Tokyo by these voluntary emergency measures.

True, Japan has had to resort to more use of imported coal, oil and natural gas to meet the shortfall from the nuclear sector. There has been a sea change in attitude, however, about the safety of nuclear energy – especially given that the country is earthquake-prone – and the desirability of electricity from renewable sources. Japan has been looking to Germany for ideas about how a new energy structure could be developed.

Sceptics question whether such major-scale transition in the energy system can happen in a relatively short time. Supporters regard the energy transformations that are being planned in Germany and debated in Japan as an opportunity that will help both countries maintain their economic competitiveness and provide them with new jobs and industries, while helping to develop energy systems that, in the long run, will be far more sensitive to environmental constraints. ■

Athabasca's Cleaner

The global demand for energy will continue to dominate the Canadian and international political and economic agendas. Athabasca Oil Sands Corp. offers an innovative solution to these energy chal lenges. The company holds an enormous acreage position in Alberta's oil sands region and antici pates using a breakthrough technology to produce its extra heavy oil resources in a sustainable and responsible manner.

Athabasca's new technology is called thermal as sisted gravity drainage (TAGD) which uses electric ity to gently heat the reservoir. Thermal heating is similar to the in-floor radiant heating systems people install in concrete floors to keep warm and comfortable. The heat is constant and even.

The company believes TAGD addresses a number of international concerns: it eliminates mines and tailings ponds, uses directional drilling from pads to minimize the surface footprint; it uses no water and significantly minimizes carbon dioxide emis sions. Thus TAGD could be more profitable and environmentally sensitive than other oil sands re covery methods.

The company's prize reservoir is in its wholly-owned Dover West oil field, about 70 kilometres north west of Fort McMurray. The oil is trapped in a 100 150 metres thick reef, called the Leduc carbonate, about 350 metres below the surface. Conservative estimates from third-party evaluators show approxi mately 17 billion barrels of contingent oil-in-place (best estimate) which could support production of 250,000 barrels per day for several decades.

Oil Sands Strategy

For commercial production, Athabasca could clear a select number of corridors through the forest, construct pads and directionally drill wells into the reef. Each pad is expected to be reclaimed shortly after the extra heavy oil production ceases, unless another technological advancement proves effective to sweep the reservoir clean.

Athabasca has a large extra heavy oil reservoir that could be Canada's answer to Saudi Arabia's elephant oil fields.

Although it is preliminary and not yet commercially proven, Athabasca believes TAGD may help Canada become an energy superpower, producing cleaner energy.

ATHABASCA
OIL SANDS CORP.

WWW.AOSC.COM

Why nuclear energy still has a crucial role to play

Despite the Fukushima tragedy, most countries have decided to retain nuclear power as an important ingredient in their overall energy strategies

By Victoria V Panova, Department of International Relations and Foreign Policy of Russia, MGIMO-University

Since the 2011 G8 Deauville Summit, nothing has happened that would allow for a drastic revision of the role of the nuclear energy in the world. The Fukushima tragedy of March 2011 reversed political thinking on the matter in several countries. Yet the general trend of keeping nuclear as an alternative energy source remained in the strategies of major or emerging nuclear users of China, India, France, Russia, Korea and the United States. Efforts in 2011 focused mainly on enhancing safety standards for existing nuclear reactors.

As the victim of the accident at Fukushima, Japan had only one reactor out of 54 functioning by the end of March 2012. Germany closed eight of its 17 reactors permanently, with a view to closing down all nuclear power plants completely by 2022. This trend was seen in Switzerland, Italy and other countries, even though several experts firmly believe that there remains no real alternative to nuclear energy. Nuclear power plants, while having high construction costs and long payback periods, emit virtually no greenhouse gases and thus could be considered climate friendly.

The cost of shutting nuclear plants

According to the estimates published by the International Energy Agency (IEA) in its *World Energy Outlook 2011*, shutting down nuclear power plants while trying to keep the global temperature increase within 2°C would cost the world up to an extra $1.5 trillion by 2035. Notwithstanding popular opposition to nuclear energy, even after the Fukushima tragedy, the IEA's forecasts did not change much: they suggested a 70 per cent increase in nuclear power by 2035.

The cost of a total reorientation away from nuclear energy seems too high for the today's world to bear, due to issues related to climate change, the depletion of hydrocarbon resources, the economic efficiency of nuclear stations and military aspects. Today, out of 63 nuclear reactors under construction around the world, China leads with 26. Ten are in Russia, seven in India and three in Korea.

The trend of investment in renewable sources of energy does not seem to have been influenced either positively or negatively by the events of 2011. Renewables continue to gain more and more ground. As an alternative to depleting hydrocarbons and using nuclear power in areas that demand much energy and heating, there could be greater use of combined cycle power plants, which now reach up to 55 per cent of output efficiency, or use of geothermal heat pump systems. If Russia were to use energy-efficient light bulbs, the electricity output would be the same as for 26 newly built nuclear reactors.

> ***Shutting down nuclear power plants while trying to keep the global temperature increase within 2°C would cost up to an extra $1.5 trillion by 2035***

Together, countries are undertaking measures to increase the share of renewables in the fuel and energy balance, to increase that share up to 25 per cent by 2025 in the US, 20 per cent and over in the European Union, and 14.5 per cent in China. The US, Germany, India, Spain and China possess around three-quarters of the world's wind-driven generators, while Europe, Japan and the US lead in installed solar-panel capacity.

The BRICS countries of Brazil, India and South Africa have a very good potential for renewables. Russia has only about one per cent of non-traditional renewable sources in its energy balance (without hydroelectric power). Nothing in terms of strategic thinking regarding nuclear energy's role for Russia has changed since it hosted the G8 summit at St Petersburg in 2006. That summit's

Renewable sources such as wind power are increasing their share of energy production, but do not offer a viable alternative to nuclear power

declaration on Global Energy Security found the formula to disagree by those of the G8 "considering plans relating to the use and/or development of safe and secure nuclear energy". This was, in a way, repeated at the 2011 Deauville Summit with the commitment of "those countries having chosen to rely on nuclear energy" to "pay due attention to the safe operation of their nuclear installations".

At Deauville, the leaders also approved the conducted or planned stress tests for their nuclear power plants to assess "accident prevention, emergency preparedness, crisis management and mitigation, and post-accident management". The G8 also prompted the International Atomic Energy Agency (IAEA) to take proactive measures in this area. As a result, by February 2012 new safety standards for the projected plants were worked out to replace the previous ones that had been created in 2000.

The G8 leaders at Deauville also called on all countries still not adherents to several relevant IAEA conventions to join or ratify them. They asked all relevant multilateral forums of safety authorities and operators to strengthen their efforts to that end. This had a somewhat minor effect with regard to the conventions. In the summer of 2011, Albania and Ghana acceded to the IAEA Convention on Nuclear Safety, while 10 countries remained outside that mechanism (including such important players as Algeria, Egypt, Israel and Syria).

This convention will have its Second Extraordinary Meeting on 27 August 2012 to look into ways of strengthening the regime as a whole, including introducing an efficient peer-review mechanism, as well as preparing for the sixth review conference.

Suggestions for the summit

Nuclear safety soared on the international agenda after Fukushima. Yet an understanding of interconnectedness and mutual vulnerability, not just of Japan or of the G8 countries, has led to work at all levels of international cooperation. It was important for G8 leaders to state their moral support for the Japanese people at such a difficult time and also to calm the world by stating that they were ready to take action to prevent such a disaster from happening again. Otherwise, there does not seem to be a technical need to foster cooperation in this area.

With the usual stress on nuclear non-proliferation, the G8's 2012 American hosts will push through the relevant meetings of the G8 Nuclear Safety and Security Group and other mechanisms that the G8 supports for the activities taken by the IAEA and the relevant national authorities.

This was the case with G8 endorsement for the IAEA Response and Assistance network to strengthen international emergency preparedness. It looks as if the G8 summit will not need to play a bigger role than mere endorsement or promotion, for the necessary work is being done by lower-level national and multilateral experts on specific components, such as at the new sequence of nuclear safety summits, so far held in Washington DC in 2010 and in Seoul in 2012. ■

Shale: a global game-changer

Around the globe, a shale revolution is occurring, creating jobs, boosting economies, and redefining the international energy scope. From the United States to China, governments of all geographies are reassessing their energy portfolios, businesses are reallocating investments, and consumers are taking a second look at their energy bills. The shale revolution has taken hold of the global energy stage.

Game-changing technology: hydraulic fracturing

Today, thanks to technological innovation and industrial dedication, natural gas locked in tight shale formations is physically and economically accessible for our oil and natural gas producers.

While hydraulic fracturing was first used more than 65 years ago, the combination of this stimulation technique with horizontal drilling technology has revolutionised the world's natural gas supply, becoming a catalyst in the development of extensive unconventional resources.

Hydraulic fracturing is a method in which a fluid mixture of 99.5 per cent water and sand is pumped down the wellbore at high pressure to create cracks and fissures in shale to access natural gas that is otherwise trapped.

Despite speculation and propaganda, hydraulic fracturing is a proven-safe technology. In fact, out of the 1.2 million wells that have been fractured in the US, not a single case of groundwater contamination has ever been proven as a result of hydraulic fracturing.

A study from the Energy Institute at the University of Texas at Austin reaffirmed this fact in February 2012. The study found "no evidence" of hydraulic fracturing ever leading to groundwater contamination.

Like any other industrial process, industry is aware of the need for continual advancement to ensure the safety of the environment in communities where development is taking place. From preliminary testing of the area via seismic data to restoration of the completed well site, industry places safety and the environment as a top priority in development. Industry has stepped up to voluntary disclose chemicals used in more than 11,410 wells in the US. Safety, efficiency, water conservation, wellbore integrity and environmental protection are key chapters in development.

> **"I'm not aware of any proven case where the fracking process itself has affected groundwater"**
>
> US EPA Administrator Lisa Jackson (May 2011)

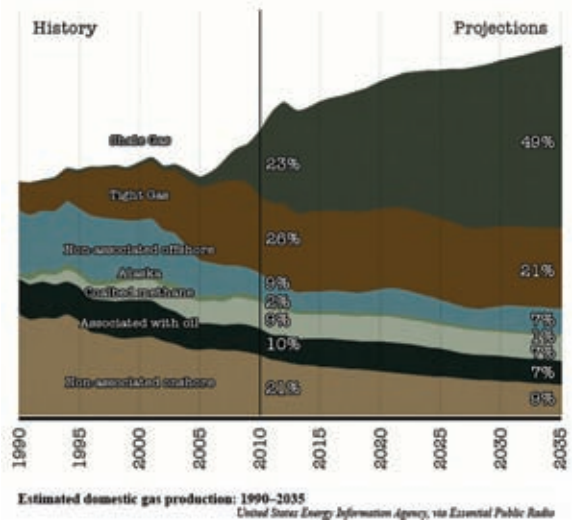
Shale around the world

Between 2010 and 2030, global demand for natural gas is expected to grow by close to 50 per cent. The need to develop our natural gas resource base is clear. Right now, more than 6,622 trillion cubic feet of known natural gas reserves exist in shale gas areas around the globe.

European Union: Newfound shale reserves throughout the EU – from the UK to Spain – could provide a new source of much-needed domestic clean-burning natural gas for consumers, while enhancing the EU's energy security. Poland, for instance, is moving forward with a robust plan to develop its shale reserves – which are equal to 300 years of domestic energy for the nation – and define its energy independence from Moscow.

China: Recent research surrounding China's prolific shale resources base (which may be 50 per cent greater than that of the US), and a national commitment to constantly develop and enhance the national standard of living, has spurred the government to increase its natural gas production.

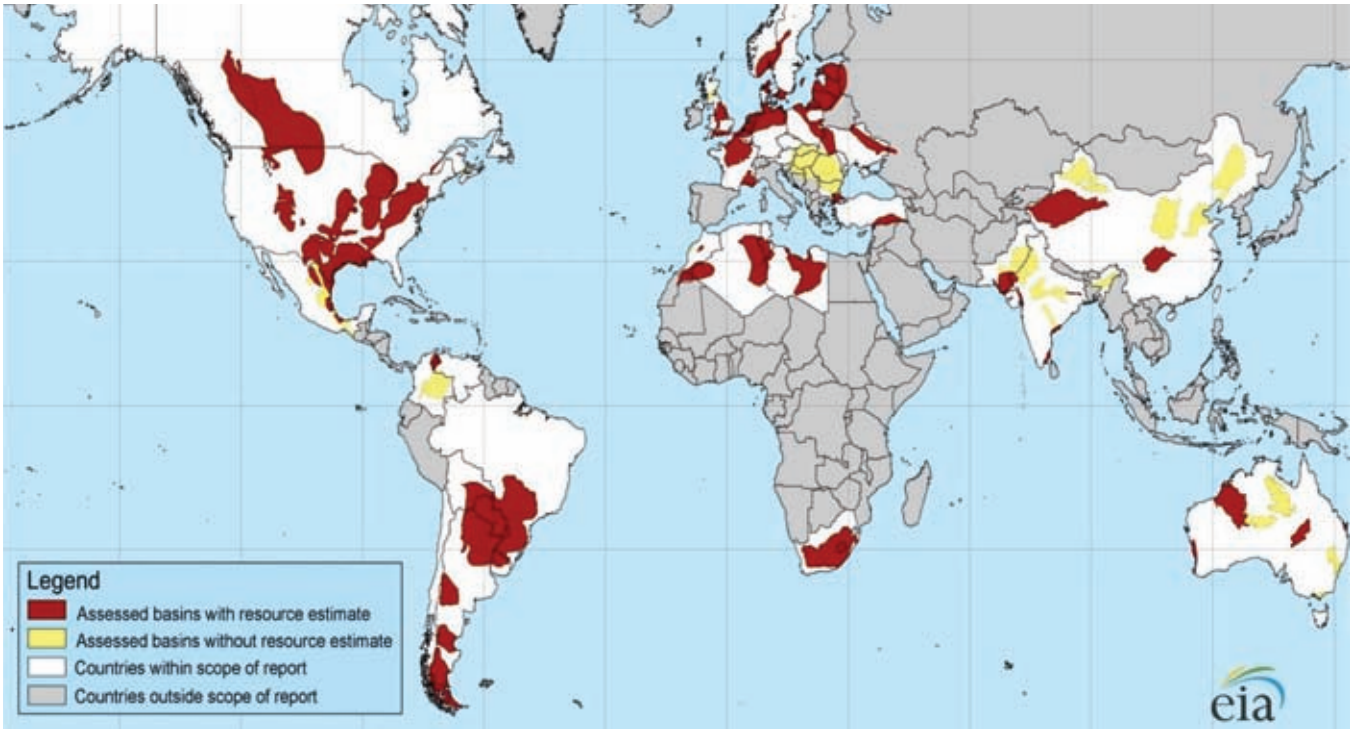
South America: Argentina is the largest natural gas producer in South America. Yet barriers to production have limited private investment, resulting in a decline in oil and natural gas production while consumer demand rises. Recent assessments, however, suggest that its shale reserves may hold some of the world's largest natural gas supplies, making Argentina a significant player in the global energy supply.



Estimated domestic gas production: 1990–2035
United States Energy Information Agency, via Essential Public Radio

ENERGYINDEPTH

Launched by IPAA in 2009, Energy In Depth (EID) is a research, education and public-outreach campaign focused on getting the facts out about the promise and potential of responsibly developing America's abundant oil and natural gas from shale reservoirs. Learn more about hydraulic fracturing and safe natural gas development from shale on our website: www.EnergyInDepth.org



Shale around the US

The US is estimated to have a 100-year supply of low-cost, clean-burning natural gas. In 2011, shale gas had grown to 34 per cent of total US natural gas production. By 2020, domestic natural gas production from shale alone is expected to supply 50 per cent of natural gas in the US.

Job creation, economic stimulus: As shale development supports industries across the nation, production has become a catalyst for job growth throughout North America. From reviving local steel mills to supporting family businesses, the safe development of America's homegrown natural resources is providing real opportunities for communities that might otherwise be casualties of the global recession.

In 2010 alone, shale development supported 600,000 jobs. According to estimates from global information company IHS CERA, this will grow to nearly 870,000 in 2015 and to more than 1.6 million by 2035. Development also contributed more than $76 billion to GDP in 2010, while furnishing $18.6 billion in federal, state and local taxes and federal royalty revenues.

> **"From my point of view, [hydraulic fracturing] can be done safely and it has been done safely"**
>
> **US Interior Secretary Ken Salazar (February 2012)**

Chemical and manufacturing industries that rely on natural gas as a feedstock for production are flourishing, capable of keeping their firms and workers at home for the first time in decades.

Energy security: In the US, oil imports have fallen from 60 per cent in 2005 to 47 per cent today, while OPEC nations are realising the potential of North America's vast new energy supplies and what they might mean for the future of global energy trade. As shale development continues to grow, expected to account for nearly 50 per cent of US dry gas production in 2035, our nation moves one step closer to securing its domestic energy security.

Conclusion

Global recessions. Unemployment spikes. National security. These are the foremost issues of our time, complicated and dynamic quandaries that require innovative and multifaceted solutions. The development of natural gas from shale presents an opportunity for global leaders to work together and provide our growing world with the energy it needs to expand, advance, and progress. From Lower Saxony in Germany to the Eagle Ford in Texas, across to the Cooper Basin in Australia, shale gas areas around the globe are redefining our world's energy potential and providing countless economic benefits for local, federal, and global economies.

Footnotes

1 Energy Information Administration: *Argentina's Natural Gas Reserves*
2 IHS CERA, *The Economic and Employment Contributions of Shale Gas in the United States*, December 2011
3 Resources for the Future, *The Future of Natural Gas*, June 2010
4 IHS CERA, *The Economic and Employment Contributions of Shale Gas in the United States*, December 2011

IPAA
INDEPENDENT PETROLEUM ASSOCIATION OF AMERICA

www.ipaa.org

North America as a global oil and gas power

A delicate balancing act is required as governments find ways to develop low-carbon energy sources, keep prices down and protect jobs in the industry

By Robert Johnston and Nitzan Goldberger, Eurasia Group

In recent years, governments have endeavoured to maintain a tricky energy-policy balancing act in seeking to shore up the physical security of supply, develop low-carbon energy resources, and promote affordable energy and job creation amid the global economic downturn. The challenge is perhaps best captured in US president Barack Obama's recent emphasis on 'all of the above' energy development. The shift to 'all of the above' as a policy centrepiece for the White House arguably reflects some lost momentum on the climate change and renewable energy front, but also the stunning transformation of the oil and gas outlook within North America thanks to the innovation relating to unconventional resources in oil sands, tight oil and shale gas.

G8 governments must work together on best practices to develop resources safely

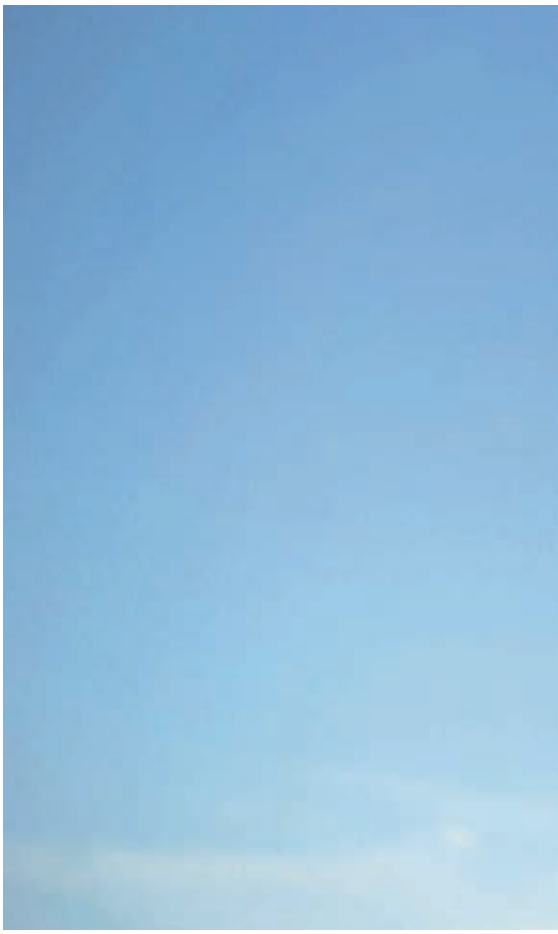
Delaying difficult questions

For the G8, the role of the unconventional boom in North America and beyond will bring breathing space for addressing difficult political questions on climate and economic questions for renewables, as the more optimistic outlook for oil and gas helps to stabilise prices and calm public anxieties about peak oil. To achieve this vision, G8 governments must work together on best practices and standards to develop unconventional oil and gas resources safely and responsibly. Moreover, G8 governments will also need to analyse the implications of changing energy supply chains and trade flows as new supply sources come online. The boom in North America shale gas has turned the natural gas market on its head, and the US, once expected to become one of the world's largest importers of liquified natural gas (LNG), is in fact likely to become an exporter. The large volume of natural gas in the market has produced noteworthy gains for North American energy security, as well as for other national economic and environmental policy goals, while simultaneously changing the strategic trajectory for other major global gas producers around the world.

At the same time, the technologies and techniques used to tap into the vast shale gas reserves in North America are unlocking so-called, light and tight, oil potential in older conventional formations and shale formations. If estimates by the International Energy Agency (IEA), the National Petroleum Council and other sources are correct, the US could be producing two million barrels per day (bpd) or more of tight oil by the end of the decade. Together with offshore oil production, these resources would lessen the country's dependence on unstable countries for seaborne crude imports.

The Canadian oil sands are the third leg of the North American energy security table, along with shale gas and tight oil. The oil sands are expected to be the largest source of new supply from non-members of the Organization of the Petroleum Exporting Countries (OPEC) over the next decade, along with the US and Brazil. Over 800,000 bpd of new capacity is already under construction and expected to come online by 2016, with another 700,000 bpd to follow by 2020.

The technologies and techniques used to tap into vast shale gas and tight oil reserves in North America could have a considerable impact on global supply as the technologies proliferate to new markets. The shale gas play is well under way in Europe, with Poland



the most active market. Similarly, a recently announced strategic US-Russian joint venture seeks to apply tight oil extraction techniques beyond US borders to boost production from mature fields in Western Siberia.

Overcoming market disruptions

The combined Alberta oil sands/US tight oil boom is straining existing pipeline infrastructure, but gradually pushing out to coastal markets along the Gulf of Mexico and the Atlantic and Pacific coasts. The availability of these domestic barrels is already reducing the US pull on OPEC suppliers, freeing up barrels for other G8 members in Europe when supply from markets such as Libya and Iran is disrupted by political events. The availability of lower-cost domestic barrels also helps to sustain refining capacity in the US, bolstering

Barack Obama's 'all of the above' strategy to increase domestic oil production and promote new energy sources aims to protect jobs and keep oil prices low

energy security for the entire Atlantic Basin. Canada is also using its oil sands boom to build deeper economic links with Asia as it pursues a West Coast pipeline.

Both Canada and the US are moving towards the export of LNG to help open new markets for struggling US gas producers facing an oversaturated domestic market. This shift will help price realisation for North American producers, but also provide a new source of gas for Japan as it adjusts to a more gas-intensive future energy policy after the 2011 Fukushima disaster.

Preserving social licence to operate

The North American unconventional energy boom has been a job-creating engine and has the potential to deliver other public goods – for example, shale gas used in lieu of coal to generate power, or more favourable trade balances should US LNG exports expand. On balance, however, broader public support for unconventional energy remains elusive even within North America, let alone the emerging unconventional plays in markets such as Western Europe. The oil sands have struggled to manage public perceptions and environmental opposition with regards to pipeline safety, lifecycle greenhouse gas emissions and tailing ponds.

Shale gas and tight oil operators are working to assure the public on issues such as chemical disclosure for fracking fluids and safety issues concerning the treatment of flowback water from unconventional oil and gas wells. These concerns have created friction within G8 member governments, with France moving to ban hydraulic fracturing, uncertain support from the European Union for European shale gas development, and the European Commission's efforts to impose fuel-quality directives targeting oil sands exports.

The promise of unconventional energy

Going forward, G8 governments will have to find ways to bridge these differences – differences between the US and Canada on oil sands pipelines like Keystone XL, between Canada and the EU on oil sands and climate change, and between the US and EU on responsible shale gas development.

Without a common understanding on all of these issues, the full promise of unconventional energy as the key plank of an 'all of the above' approach to energy security will not be realised. ■

We have a better way to harvest the billions of barrels of

IOSA

crude oil from the oil sands... pure and simple.

Hundreds of feet beneath the forests of northern Alberta, Canada, lies an ancient oil bearing formation commonly referred to as oil sands. This rock solid formation of extra heavy oil offers a secure source of energy. About 80%, or 140 billion barrels, of Canada's oil sands reserves are too deep to be to recovered using surface mining techniques.

The trick is how to get it out of the ground simply.

That's where advanced technology and the In Situ Oil Sands Alliance (IOSA) come together to provide North Americans with a responsible and innovative energy future. The alliance is a group of independent oil companies dedicated to the development of Canada's oil sands using in situ technologies.

These locked-in reservoirs of heavy oil (bitumen) require special methods to free the oil and bring it to the surface for refining. In situ simply means that the oil is extracted from where it is trapped using surface facilities similar to those used for producing light crude oil. Canada's oil reserves are estimated at 180 billion barrels, 175 billion in the oil sands and five billion trapped as light oil.

IOSA companies drill for heavy oil (bitumen). To do this, the formation is heated to free the bitumen that then flows through the wellbore to the surface. The technology avoids trucks and shovels, open pit mines and tailings ponds.

Drilling in these heavy oil (bitumen) formations reduces greenhouse gas (GHG) emissions through several practices including co-generation facilities, down hole pumps and infill wells.

Water for the in situ plants comes from deep aquifers unfit for human or agricultural purposes. About 90 to 95% of the water used is recycled.

IOSA companies expect to invest about $7 billion to develop their respective resource bases over the next five years to produce more than 200,000 barrels of oil per day.

IOSA
IN SITU OIL SANDS ALLIANCE

IOSA – OUR FUTURE IS ENERGY
www.iosa.ca

Energy security is of crucial importance for the G8

Access to energy is the bedrock of global economic stability and growth, and policies that focus on maintaining security of supply are a priority

By Maria van der Hoeven, executive director, International Energy Agency

Energy markets in 2012 face a particularly daunting set of overlapping challenges and risks. Those can heighten market uncertainty – but concerted, vigilant and well-designed international energy governance can do much to mitigate it. I would like to urge leaders at the G8 summit at Camp David to seize the initiative on energy policy, especially given the backdrop of record carbon dioxide emissions, little or no progress in energy efficiency, as well as sustained high oil prices.

In times of economic uncertainty, one aspect of energy policy remains a priority: energy security. That is the case both for economies trying to stave off recession and for those whose rapid growth demands increasing energy inputs. Recent events such as the civil unrest in North Africa and the Middle East, as well as the incident at the Fukushima Daiichi nuclear power plant, have further heightened concerns, as was apparent at the October 2011 ministerial meeting of the International Energy Agency (IEA) in Paris.

Since the founding of the IEA in the 1970s, the traditional focus on oil supply security has expanded to other fuels, notably gas and electricity. At the same time, the nature of energy security is changing. Patterns of global energy consumption and production are shifting. There is a growing emphasis on universal access to energy. And the competitive and efficient transition to a low-carbon economy remains a priority, both for security and sustainability.

A fuller definition of sustainability

Sustainability means more than reducing carbon emissions. A sustainable international energy system is one that addresses the economic and social aspirations of all countries' citizens. That does mean limiting climate change, but also moving over the long term toward cleaner and more efficient energy systems, and reducing dependence on fossil fuels. That has knock-on effects on international relations, political and economic stability, price volatility and national security. Indeed, sustainability is also security.

The IEA has continually adapted to these changing circumstances, but that does not mean that it has strayed from its core mission. From its founding in 1974, the IEA has been committed to ensuring oil supply security, most notably through the management of strategic oil stocks, but also through the provision of statistics and in-depth analysis of the oil market. Until now, the IEA emergency response system has been activated three times – in the run-up to the Gulf War in 1991, after hurricanes Katrina and Rita destroyed oil infrastructure in the Gulf of Mexico in 2005, and as global demand picked up after civil war stopped Libyan production in 2011. In all cases, the IEA's rapid response offset concerns about supply shortfalls and helped to stabilise global markets. However, IEA collective stock release actions are designed to alleviate supply shortages, not to manage oil prices.

Emergency action is only one tool in the IEA's box. Governments and market players rely on the IEA to offer sound advice and analysis, and to recommend appropriate action, both day to day and in times of crisis. That analysis is particularly important as global oil demand – driven by the economies of countries that are not members of the Organisation for Economic Co-operation and Development – continues to grow, leading to declining oil stocks and contributing to high prices. Tightening markets can make prices more susceptible to shock, which in turn can threaten economic recovery. Long-term supply security is even more worrying, particularly if current uncertainties, together with altered

Gas can play a part in reducing emissions. Here, the newly-opened Gazelle pipeline in Prague is able to supply natural gas within Europe

government spending priorities, discourage or delay the near-term investments that are so crucial to meeting rising energy demand.

The changing face of gas supplies

Gas security, a more recent general concern, has been partly ameliorated by increases in conventional gas reserve estimates and also the unconventional gas boom. But the latter remains primarily a US phenomenon. Emulating the US experience in other countries will require understanding of how much gas can be recovered, bringing in companies with the right expertise and material, solving potential environmental issues to the satisfaction of the public and assuring that returns justify costs. If domestic prices are too low, or if there is a lack of a transparent and predictable investment and regulatory framework, such resources will not be developed. 'Golden rules' to guarantee environmental and health standards, as well as a sound investment environment, will be key to ushering in a golden age of gas.

Uncertainties around game-changers go beyond gas. The share of coal-fired power in China and the growth of renewable energy will depend both on strong policy commitment and on technological developments over the coming years.

In Europe, power markets will have to handle the impacts of the German nuclear moratorium imposed after Fukushima. And significant integration of variable renewable technologies, such as wind or solar, worldwide will require upgrading power transmission networks to advanced smart-grid variants to maintain electricity security to customers. Energy supply security can also take its most basic form – the provision of energy and energy access to those without it. Alleviating energy poverty has become a major priority for some of the biggest and increasingly important energy players. It is also an important area of analysis for the IEA. A special excerpt of the World Energy Outlook 2011 highlights the challenge and offers insights into mobilising the necessary financing to be able to respond.

Finally, one must consider energy sustainability, which goes hand in hand with energy security. The door is closing on achieving climate change goals that limit temperature increases to 2°C. On the current path, by 2017 the energy sector's total carbon allowance will be locked in. All additions beyond that limit would have to be carbon neutral. One reason that reducing emissions is important is because climate change can have a direct impact on security by affecting energy demand, supply and assets.

Today is, potentially, the cusp of a golden age of gas, but gas can also crowd out lower-emission renewables and is no panacea for climate change

Improving energy efficiency will be a key battleground for achieving carbon-reduction objectives, as well as for creating renewed social and economic development. When the G8 commissioned the IEA to develop 25 Energy Efficiency Policy Recommendations in 2008, there was an urgency and a strong commitment to global energy efficiency. It needs to be revived if everyone is to benefit from this most cost-effective hidden fuel.

Tackling the issues together

The G8 leaders should consider all of these challenges together. This is the last year of the Kyoto Protocol's first commitment period. Countries and industry in Kyoto countries will have to finalise their plans to comply with their emission goals. Here, pricing mechanisms and policy commitments that develop energy efficiency play an important role, particularly given the energy security benefits of curbing demand and imports. On politically and legally sensitive issues such as aviation carbon tariffs, leaders must remember that measures taken in order to reduce emissions do not necessarily have to impede their competitiveness.

On the supply side, leaders should consider fuel diversity. Gas can play a role in reducing carbon emissions at the expense of coal. Today is potentially the cusp of a golden age of gas, but gas can also crowd out lower-emission renewables and is no panacea for climate change. Renewable energy technologies themselves are rapidly maturing, but will require significant investments in transmission infrastructure to lay the ground for a low-carbon energy economy.

Despite the challenges facing G8 countries, I urge leaders not to allow short-term interests to overshadow long-term global energy security and sustainability. In the end, these are challenges that we must face together. ■

UNIVERSITY OF TORONTO

MUNK SCHOOL OF GLOBAL AFFAIRS

Join the Global Conversation

G20 Research Group

The G20 Research Group is a global network of scholars, students and professionals in the academic, research, business, non-governmental and other communities who follow the work of the G20 leaders, finance ministers and central bank governors. It is directed from Trinity College and the Munk School of Global Affairs at the University of Toronto, also the home of the G8 Research Group.

Our mission is to serve as the world's leading independent source of information and analysis on the G20. As **scholars**, we accurately describe, explain and interpret what the G20 and its members do, and, on this basis, responsibly predict what they will do. As **teachers and public educators**, we present to the global community and G20 governments the results of our research, ways to learn about the G20 and information about the G20. As **citizens**, we foster transparency and accountability in G20 governance, and the connection between civil society and G20 governors. And as **professionals**, we offer policy advice about G20 governance, but do not engage in advocacy for or about the G20 or the issues it might address.

The G20 Information Centre
www.g20.utoronto.ca

The G20 Information Centre is a comprehensive permanent collection of information and analysis available online at no charge. It complements the G8 Information Centre, which houses publicly available archives on the G20 as well as the G7 and G8.

Speakers Series

The G20 Research Group hosts a speakers series in its efforts to educate scholars and the public about the issues and agenda of the G20. Past speakers have included senior officials of the International Monetary Fund and scholars from Columbia University and elsewhere.

Media Assistance

As part of its research program, whenever possible the G20 Research Group sends a field team to the summits and finance meetings of the G20 to assist the world's media on site at the international media centre and to collect the documentation uniquely available there.

Research and Publications

Among the material available on the G20 Information Centre is a document detailing the **Plans and Prospects** for the G20's agenda, updated frequently. Also available are compliance reports and performance assessments, as well as online publications.

Working with Newsdesk Communications in the United Kingdom, the G20 Research Group has also produced a special volume commemorating the tenth anniversary of the G20, *The G20 at Ten: Growth, Innovation, Inclusion*, as well as an edition for every G20 summit since then, all available online as well as in print.

In addition, refereed research books are published in Ashgate Publishing's Global Finance Series.

Related Books from Ashgate Publishing

- ***G20 Governance for a Globalized World***, John Kirton
- ***Global Financial Crisis***, Paolo Savona, John Kirton and Chiara Oldani, eds.
- ***The G8 System and the G20***, Peter I. Hajnal
- ***Governing Global Derivatives***, Chiara Oldani

G20 Research Group
Munk School of Global Affairs, 1 Devonshire Place, Room 209N, Toronto, Ontario M5S 3K7 Canada
Telephone 416-946-8953 • E-mail g20@utoronto.ca • Twitter @g20rg
www.g20.utoronto.ca

The G8 and great hopes for sustainable energy

Camp David is a chance for the G8 to steer global energy governance and address key issues such as the transition to sustainable energy sources

By Dries Lesage, Ghent Institute for International Studies, Ghent University

A summit of the largest advanced economies in the world is always an excellent opportunity to discuss the planet's ecological future. In that context, energy is a top priority – and one for which the G8 can realise its comparative advantage.

Energy is multidimensional. It affects the global economy, climate change, development and poverty, as well as international security. Heads of state and the governments of the major powers are among the few political actors in the world mandated and resourced to oversee the interplay between these dimensions and detect governance gaps. Moreover, as a small, flexible and powerful group, the G8 is well placed to maintain political pressure on ongoing multilateral processes. Many of the latter, including in the realm of energy, are in desperate need of lasting high-level commitment.

Energy governance commitment

The G8 has already demonstrated its great potential to guide global energy governance in the absence of a world energy organisation. One of its achievements, following the 2005 Gleneagles Summit, was boosting the work of the Paris-based International Energy Agency (IEA) on energy efficiency and clean energy. This effort included intensifying the IEA's collaboration with non-members such as China and India. Since then, however, the G8 seems to have relinquished its once promising energy agenda. Some aspects of that agenda have moved to the G20, but the latter is not yet assuming the role of political leader for global energy governance. Given the select composition of the G20 and the fact that its summitry has rendered the G8's outreach to large emerging economies superfluous, the G8 is no longer eligible to take up this role.

Still, the G8 cannot afford to remain silent on energy at the summit. Indeed, it should resume its commitment to global energy governance in an ambitious way, with a set of strong messages.

So what impact, then, can we expect the G8 Camp David Summit to have on global energy governance?

Urgency for green energy transition

First, G8 leaders must express a sense of urgency about the required transition to a sustainable energy supply for all. As the IEA indicated in its 2011 *World Energy Outlook* in November, even if governments live up to their recent promises on clean energy, the world is heading for a long-term average increase in temperature of more than 3.5°C compared to pre-industrial levels, well above the maximum limit of 2°C set by a global scientific and political consensus. A broad range of new and radical measures must thus be implemented quickly. This has to be done against the backdrop of financial and economic crisis and a steep decline in support for nuclear power since Japan's Fukushima disaster in March 2011. Moreover, 1.3 billion people still lack access to electricity, while the world's population is expected to grow from today's seven billion to nine billion by 2050.

More than ever, energy saving, energy efficiency and renewables – backed by more decentralised power generation and robust regulatory pricing and taxing tools – deserve the lion's share of coordinated efforts. It is time now to question the idea of massive new investment in fossil fuel sectors as a path to energy security. Furthermore, solutions such as carbon capture and storage, new drilling in ecologically vulnerable areas, clean coal or unconventional fossil fuels, can only play a limited role – if any – in a sustainable energy future.

On nuclear energy, it can only be hoped that the Camp David Summit will follow up on the language that the G8 agreed at

In the face of a 3.5°C long-term increase in global temperature, the adoption of sustainable energy sources needs strong advocacy from the developed countries

its 2011 Deauville Summit. There, the G8's leaders rightly pointed to a glaring gap in global governance with regard to the international coordination of the safety of civilian nuclear infrastructure. A robust global framework is required, governed by the International Atomic Energy Agency.

Adhering to nuclear conventions

Existing international regulation is, most of the time, non-binding and non-enforceable. Adherence to relevant conventions could improve significantly.

A key message here is that nuclear safety can no longer be considered a matter of national sovereignty alone. But given the G8's constricted membership and the nuclear ambitions of non-members such as China, India and Korea, the organisation should press the G20 to embark upon this urgent agenda as well.

Camp David is also an opportunity to lend high-level support to United Nations secretary-general Ban Ki-moon's Sustainable Energy for All initiative. The goal of this is to meet three key objectives by 2030: ensure universal access to modern energy services, double the rate of improvement in energy efficiency and double the share of renewable energy in the global energy mix. This initiative must be considered in the context of the UN Conference on Sustainable Development, scheduled for 20-22 June in Rio de Janeiro. As the G8 did before – by making the Millennium Development Goals (MDGs) a key theme of the 2010 Muskoka Summit in Canada – Camp David can reasonably be expected to stress the historic importance of the upcoming Rio+20 Summit, 20 years after the influential initial United Nations Conference on Environment and Development. The state-of-the-planet mandates that Rio+20 adopts may turn out to be even more successful than those of Rio in 1992. A possible G8 contribution might be to speak out in favour of integrating a version of the Sustainable Energy for All targets into a new set of 'Sustainable Development Goals' or a set of post-2015 development goals as a successor to the MDGs, in which the idea of sustainable development is more firmly entrenched.

Energy saving, energy efficiency and renewables deserve coordinated effort

G20 energy task force

Despite the valuable role that G8 leaders can still play in the field of energy, trends in the emerging world require that the G20 takes on a comprehensive and enduring energy agenda. As an urgent and multidimensional matter, energy still lacks a political steering group able to engage in overall strategic thinking, to address governance gaps and to put forward solutions for interconnections between policy areas. There is also a need to coordinate and, perhaps, consolidate the plethora of international energy initiatives, such as the US-initiated Clean Energy Ministerial, the newly established International Renewable Energy Agency (IRENA), the IEA's International Partnership for Energy Efficiency Cooperation (IPEEC) and International Low-Carbon Energy Technology Platform, and the UN's Sustainable Energy for All initiative. A smartly composed, standing G20 energy task force – including real representation from poor countries – could assume these functions. Support for such a proposal can be a great G8 contribution as well. ■

Climate change: has the momentum slowed?

Yinka Agidee
Head, Environmental Law and Climate Change Unit

The global economic crisis appears to have resulted in declining concerns about climate change, and this inevitably means environmental issues are taking a back seat in the political agendas of most developed nations. An immediate intervention is required, however, to build climate change-resilient development strategies to ensure that extreme weather and other unforeseen events do not result in large-scale humanitarian disasters with economic effects that far outweigh the short-term benefits of cost-cutting.

Climate change is a major threat to sustainable growth and development in developing countries. Africa contributes least to global emissions, yet it is one of the most vulnerable to its effects. Consequently, African governments are focusing on ways to ensure social and economic growth, eradicate poverty and increase development opportunities using scant resources. Given these priorities, development projects are rarely halted or hindered by environmental concerns, yet the fact remains that ecological degradation is a global issue that affects all people everywhere, regardless of national borders or economic status. For example, Nigeria is reputed to be one of the biggest gas-flaring nations in the world, with an estimated 18.9 billion cubic metres of gas flared per annum. Investment in climate-friendly projects, which facilitate gas utilisation, could result in long-term savings of around US$2.5 billion per year that could be invested in improving infrastructure.

Adaptation and mitigation actions

A total solution requires adaptation and mitigation interventions that are fully integrated into the national development framework of these countries. Adaptation and mitigation actions are projected to cost African countries billions of dollars annually. Under the Copenhagen Accord 2009 (CA), adopted at the 15th Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC), developed countries pledged a total of $100 billion to be used to fund climate change adaptation and mitigation actions in developing countries. In the midst of an ongoing recession, it remains unclear how funds will be raised; with these governments' attention diverted elsewhere, the private sector will have to play a key role in raising the proposed finance. In order to achieve this, the development of a legal and policy framework that is globally acceptable and provides for certainty of policy and returns as an incentive for the influx of private-sector funds is essential.

The Clean Development Mechanism (CDM) Programme of Activities (PoA) is a voluntary coordinated action by a private or public entity that can be used to achieve large-scale emission reduction in multiple sectors across a city, region, state, country or host of countries, and can be used to support the implementation of policies. PoAs can lead to Nationally Approved Mitigation Actions (NAMAs). NAMAs are policies and actions that developing countries voluntarily undertake to reduce emissions, and which they can also use to seek financial

assistance. Implementation of the NAMAs submitted by Brazil, South Africa, India and China, and most other developing countries, is conditional on developed countries providing financial or technology support in accordance with the provisions of Article 4, paragraph 7 of the UNFCCC.

The negotiations in Durban have resulted in commitments to agree to a definite cap on emissions by the year 2020 – to be negotiated by 2015 – and have also made provision for the Adaptation Fund and the Green Climate Fund to become operational. NAMAs are expected to be the main vehicle for mitigation actions in developing countries under a future climate agreement. In the final analysis, no matter what legal framework is eventually agreed, it is time for developed countries, particularly the G8 countries that represent the most advanced economies in the world, to demonstrate leadership by example by surmounting national interests and providing the necessary funding and technological know-how to enable developing countries to cope with climate change and transit to low-carbon economies. There is no better time than now, during the Chicago Summit. If the leaders step through the door first, other countries will surely follow.

The Rock and Partners,
Barristers and Solicitors/Carbon Legal Specialists,
Globe Motors Building,
Third Floor, 25, Adeyemo Alakija Street,
Victoria Island, Lagos, Nigeria

www.trp-ng.com

A chance to open up a new front on health, food and climate protection

The G8 leaders need to coordinate swift action on cutting damaging pollutants, to unlock huge benefits to millions of people worldwide

By Achim Steiner, United Nations Under-Secretary General; executive director, United Nations Environment Programme

If someone proposed that you could save close to 2.5 million lives annually, cut global crop losses by around 30 million tonnes a year and curb climate change by around half a degree Celsius, what would you do?

Act, of course. That is what six countries, in collaboration with the United Nations Environment Programme (UNEP), are doing under a new partnership called the Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants.

Among the targets of the partnership, whose first countries are Bangladesh, Canada, Ghana, Mexico, Sweden and the United States, are black carbon or soot, hydrofluorocarbons (HFCs) and methane – the latter being a powerful greenhouse gas now known to aggravate the formation of other pollutants that harm health, crops and the climate, namely ground- or low-level ozone.

More than a decade of painstaking science has now built a powerful case that can no longer be ignored. Swift action on the multiple sources of black carbon, HFCs and methane can deliver extraordinary benefits in terms of public health, food security and also near-term climate protection.

Assessing the many benefits

Meanwhile, assessments, including those coordinated by UNEP and the World Meteorological Organization, indicate that in some extremely vulnerable areas, such as those with mountain glaciers, the climate benefits may be even bigger. In the Arctic, temperature rises might be reduced by up to 0.7°C up to the middle of the century.

Action on HFCs will also assist in climate protection: a recent study coordinated by UNEP projects that by 2050 HFCs could be responsible for annual emissions equivalent to between 3.5 and 8.8 gigatonnes (Gt) of carbon dioxide (Gt CO_2eq) – comparable to total current annual emissions from transport, estimated at around 7 Gt annually.

There is more good news. It is estimated that around half of the reductions in black carbon and methane emissions can be achieved through measures that result in cost savings over the lifetime of the investment. This is because some of the measures, such as recovering rather than emitting natural gas during oil production, allow the methane to be harvested as a clean source of fuel.

It would be a failure of leadership not to seize the benefits so manifest in respect to the health of humans, as well as the health of our world

Cutting black carbon emissions by, for example, replacing inefficient cooking stoves and traditional brick kilns with more efficient ones also helps to cut fuel costs for both households and kiln operators.

There may be additional benefits that have not yet been quantified. Project Atmospheric Brown Cloud (ABC), an international science project supported by UNEP, calculates that some short-lived climate pollutants (SLCPs) are also responsible for a phenomenon known as 'dimming', which may also have an impact on the photosynthesis of crop plants.

In India, the dimming trend has been running at approximately two per cent per decade between 1960 and 2000 – and the pattern more than doubled between 1980 and 2004. In China, the observed trend from the 1950s to the 1990s was about four

The effect of pollution from both the developed nations and developing economies – such as China – is having an impact on the earth's climate

per cent per decade, with the larger shifts coming after the 1970s, according to a UNEP Project ABC report.

There remains more science to conduct in this field. Some was highlighted at a recent meeting on the issue at the Institute for Advanced Sustainability Studies (IASS) in the German city of Potsdam.

This work ranges from the impact of these pollutants on rainfall patterns and the magnitude of the indoor health benefits to wider health benefits, including how these pollutants are linked to serious ailments associated with low birth weights and other diseases such as emphysema and lung disease.

A more focused approach

Meanwhile, socioeconomic studies into the take-up and use of clean cooking stoves show it may be necessary to emphasise their beneficial impacts. In order to reduce black carbon rather than just fuel use, highly efficient stoves need to be introduced. The IASS meeting was told that some studies indicate that, although women heading households welcome the new stoves for cooking, they may still keep the older, inefficient, smoky stoves because they produce heat. This is an important consideration in parts of the developing world that experience cold winters.

However, while science should and must continue including monitoring health, agricultural and climate benefits globally and – perhaps more crucially – regionally, this is no longer an alibi for inaction. Rather, it is an underpinning of the action-focused coalition, whose broad aims are the following:

- Raise awareness of the urgency and benefits of taking action to reduce emissions of SLCPs, which include black carbon, methane and also some of the shorter-lived HFCs;
- Identify common approaches to take new action on these pollutants and also to reinforce actions in other organisations such as the Arctic Council;
- Promote the development of national or regional SLCP action plans and take steps to track progress;
- Mobilise funding commitments for SLCP mitigation of initially $10 million in 2012 and provide upfront financing to create enabling environments for action, including leveraging private-sector investment in SLCP mitigation.

Some experts also believe that the issue of short-lived climate forcers could also represent a positive outcome at the Rio+20 summit in June – 20 years after the Rio Earth Summit of 1992. Perhaps it could also form part of any proposed process towards a suite of sustainable development goals that could be launched three years after Rio+20.

Before Rio+20, of course, comes Camp David. It is an opportunity for those attending to join, support and strengthen the aims and objectives of the coalition. Other forums and other opportunities in advance of Rio+20 include the G20 summit in Mexico in June.

Fast action on SLCPs can deliver quick wins in a world often frustrated by the glacial pace at which sustainability challenges appear to be being addressed. It might also assist in keeping the increase in global temperature below 2°C, but only for so long.

Unless there is decisive action on carbon dioxide, then reducing all sources of SLCPs will not spare the world and its people from dangerous climate change during the 21st century – a point that needs to be underlined and inked in red.

But it would be a failure of leadership not to seize the benefits so manifest in respect to the health of humans, as well as the health of our world. So, if someone suggested that you could save close to 2.5 million lives annually, cut global crop losses by 25 million tonnes a year and curb climate change by around half a degree Celsius, what would you do?

Act, of course. We invite countries across the globe, including the G8 members, to join this inspiring and transformational coalition that unites the interests of the developing and the developed world and, above all, the interests and future prospects for seven billion people, rising to more than nine billion by 2050. ■

Swift international action on short-lived climate pollutants (SLCPs) could help to keep the increase in global temperature below 2°C – but only in the short term

Insuring the Future:

Why Insurance Is Part of the Solution to the Climate Change Challenge

Given their exceptional complexity, can insurance – society's traditional risk-management tool – play a meaningful role in addressing the challenges that are posed by climate change?

After all, insurance is best suited to protecting private assets, while climate change presents a test to both private assets and public goods. Furthermore, insurance works most effectively in undistorted markets, while proposals to combat climate change routinely mention grants, subsidies, penalties and the creation of additional rights and obligations. And while insurance (like most businesses) works best in a stable, consistent and predictable environment, the current patchwork of rules and regulations means that there is an embedded political risk that the rules of the game will change along the way.

To complicate matters further, transitioning from a government-sponsored 'kick start' to a self-sufficient, sustainable, climate-friendly business model will be a challenge for all sectors, perhaps even more for insurance than most.

Yet even recognising these hurdles, the answer must be 'yes': insurance has much to offer in confronting the risks posed by climate change.

In the right policy environment, insurance has the ability to encourage risk reduction by establishing risk-based pricing signals in the form of premium charges (eg riskier behaviour or conditions result in higher premiums).

For example, we expect that much of the urban growth we will see in the next 40 years will be in areas prone to natural catastrophes. If policy makers are clear as to where they will allow building and which GHG emissions-reducing technologies are to be allowable, insurance could help deliver climate mitigation and adaptation solutions.

With respect to adaptation, reducing insurance costs to reflect mitigations investment in individual buildings makes economic sense, but homeowners are rarely willing to make the upfront capital spend. A joint effort between government and insurers could create self-financing grants schemes that would facilitate this sort of improvement. This may also apply to windstorm protection and to energy efficiency.

Adding requirements that post loss rebuild to higher windstorm and energy levels standards can accelerate the adaptation process.

Insurance can also play a significant role in the transition to a more resilient and low-carbon economy if policy makers understand that insurance is both a mechanism to incentivise risk reduction using knowledge-sharing and risk-based price signals; and a pooling approach – but it is not a silver bullet.

Furthermore, insurers have developed detailed knowledge of the loss-causes associated with many of the risks anticipated from climate change, such as extreme weather or complex liability regimes. Insurers are also critical to making innovation possible, as with new technologies.

In short, the insurance industry can play a central role in dealing with climate change and to articulating a framework under which public policy should be framed, so as to avoid unsustainable risk-creation and accrual in our approach to climate change.

Zurich looks forward to working with the policy makers and other stakeholders to make insurance part of the solution to ensuring better living standards in the face of climate change.

Enquiries directed to:
Lindene E. Patton,
Chief Climate Product Officer
Zurich Financial Services
lindene.patton@zurichna.com

ZURICH

"Our journey to heal the lingering wounds of slavery began five years ago when the trustees of the W.K. Kellogg

A Journey of Healing

W.K. KELLOGG FOUNDATION™

THE W.K. KELLOGG FOUNDATION, FOUNDED MORE than 80 years ago by breakfast cereal pioneer Will Keith Kellogg, is partnering with communities in the Americas to support efforts leading to racial healing across a variety of ethnic communities and cultural traditions—called America Healing. Our journey to heal the lingering wounds of slavery and the displacement of indigenous populations, and the belief in racial hierarchies that spawned and sustained these injustices, began five years ago when the trustees of the W.K. Kellogg Foundation took a hard look at our own mission. After carefully reviewing our mission and the world we live in today, the board of trustees believed that if we were to live up to our founder's vision to protect and nurture vulnerable children, we had to address the historical ideology of racism that was continuing to create structural inequities impacting the health, educational achievement and financial security of children and their families.

These challenges are found throughout the world and one private foundation can only do so much. Global leaders and the institutions they represent have an obligation to create opportunities for the kind of public discourse that acknowledges past injustices visited upon communities due to beliefs in racial hierarchy and its constructs of privilege, rights and entitlement. This dialogue also must present pathways to addressing inequitable outcomes for these communities. Civic, business and faith-based leaders must play their part, too, and use their considerable influence to heal racial division and build more equitable opportunities.

This call for dialogue toward action is made all the more pressing by the seeming unending stream of news of racial, inter-ethnic and religious divisions. Within the last year, reports of mass killings of teens, the murder of innocent school children, along with escalating racial tensions and violence in many nations stand as stark

and the displacement of indigenous populations… Foundation took a hard look at our own mission.”

—Dr. Gail Christopher, *vice president – program strategy, W.K. Kellogg Foundation*

reminders of the danger that looms when extremist, xenophobic, hateful and racially driven beliefs are allowed to fester. The untimely and violent deaths of too many young people in the United States has sparked protests in cities across the country, yet this story is repeated—yet untold—in communities across America and indeed, the world. Thousands of young people are killed each year, lost to senseless violence. The cycle of hate repeats itself over and over again yet the proverbial needle has not moved. Progress must be made, and we must hold ourselves accountable for that progress.

To move forward, it is important for our leaders to understand the ubiquitous nature of racism and its historical lineage across all nations. The devastating effects of slavery, colonialism and resource-driven conflict have been well-documented, yet we have not done enough to challenge the ideology of racial hierarchy that supported and sustained these ills. To this day, we still see a world where the nations that benefitted the most from the slave trade and colonial ambition remain the most economically and technologically developed. These countries, paradoxically, are often the most reluctant to confront or discuss the impact race has on the day-to-day lives of their citizens and have instead left these difficult conversations to countries such as South Africa.

Our entire global economic system is built on finding and procuring human and natural resources in ways no one could have envisioned at the turn of the century. Technological advances and interconnectivity force citizens and regimes alike to grow more global in their outlook. Crises around water, food, climate and unemployment cause massive migrations of people. Nations that fail to accept this reality and to engage in productive conversations about race risk their economic and democratic potential and they deprive children, our most important resource of opportunity and justice.

While laudable, The United Nations Convention on the Elimination of All Forms of Racial Discrimination is not enough. Deliberate and conscious racial discrimination is a symptom of a much deeper and more widely embedded belief system—the idea of assigning value to a person’s being based on physical characteristics such as skin pigmentation. Because this belief system flourished for so many centuries fueling conquest and expansion of the “New World” in the 17th and 18th centuries, it became foundational to the systems and cultures that exist in so many countries today (G8). It is past time in the course of human evolution that this belief system be uprooted and put aside. Its vestiges are no more suitable to the 21st century and beyond, than the belief that the world was topographically “flat” at the turn of the 14th Century. That flawed belief limited the journeys and advancement of the world community, just as a continued reliance on entrenched racist biases still stagnate our global community’s growth.

It is our collective challenge to come together in our own way and on our own terms to change attitudes and beliefs. We must all be held accountable and begin the hard work of racial healing across nations and in homes, schools, neighborhoods and places of worship. Communities, indeed nations, often respond to these types of tragedies with calls for tolerance and temporary efforts to restore peace and civility. But history tells us that episodic efforts are not adequate. The insidious nature of engrained hateful beliefs requires sustained and coordinated work for their eradication. Leaders must prioritize this vital work as part of broader efforts to promote development and economic progress within and between countries.

But to truly succeed in the long-term, there must be a solemn commitment by one and all to this work, to unifying our planet, to rejecting racism, to finding strength not resentment in our differences. Our children and their collective futures are at stake.

The world cannot wait until some dream of better opportunity—this work, the work of racial healing, must start today. We call on our global leaders gathered here to demonstrate the courage and commitment to build a more equitable and just world for these children, across communities, across cultures and across nations.