

Drought and pollution due to large-scale flower farming have caused Lake Naivasha in Kenya to dry up. Water stress levels on the continent as a whole will rise by 2020



# The heat is on: challenges ahead for Durban forum

*With the continent of Africa particularly at risk from climate change, the forthcoming UN conference on the topic to be held in Durban must come up with some powerful initiatives to mitigate the effects of this most pressing of problems*

**By** Jacob Zuma, president, Republic of South Africa

**S**outh Africa feels humbled for having been afforded the opportunity to host the United Nations Conference of the Parties on Climate Change (COP-17) at Durban in November-December 2011. It is a demonstration of confidence in Africa's ability to host this meeting again, after Kenya successfully did so in 2006.

South Africa believes issues of climate change place heavy responsibilities on the shoulders of all nation states to ensure that future generations inherit a habitable world. It therefore beckons all to come up with meaningful solutions to today's challenges.

The implications of climate change are immediately understandable in light of the devastating drought in

Africa, recent floods in the Australia, the United States and South Africa, and recent wild fires in Russia and other parts of the world. Our actions have overwhelmed the world in which we live.

The implications of unmitigated climate change are too grave to imagine, especially on the continent of Africa, where in some countries yields from rain-fed agriculture could be reduced by up to 50 per cent in the next 20 years.

Some worrying challenges that lie ahead include the continent being exposed to increased water stress levels by 2020, serious challenges of food and water insecurity, which will magnify health problems, and increased strain on the resilience of many ecosystems, which will diminish the livelihoods of people living in rural areas.

“Veld fires are being reported and, in addition to severe drought, heavy and recurrent rains are being experienced”

The Bali Roadmap managed to set the two-track framework for negotiations under the UN Framework Convention on Climate Change and its Kyoto Protocol, in accordance with the principles of equity and common, but differentiated, responsibility and respective capability.

The Copenhagen Accord provided political direction by encouraging developed countries to provide adequate, predictable and sustainable financial resources, technology and capacity building for adaptation action in developing countries. The Cancun negotiations helped make further progress.

Climate change talks must produce a multilateral regime that is fair, inclusive and effective and that keeps the temperature well below 2°C above pre-industrial levels.

The multilateral climate-change regime should also seek to strike a balance between climate and development imperatives. It must not jeopardise economic growth and poverty eradication in developing countries. And there must be no trade-off between faster economic growth and the preservation of the environment.

At the domestic level, South Africa will use the opportunity of the Durban conference to inform and mobilise its own communities on issues of climate change. Environmental disasters have become an increasing burden. Veld (forest) fires are being reported and, in addition to severe drought conditions, heavy and recurrent rains are being experienced. The only way to explain these unusual climatic conditions is to share the space and ensure that our own people participate in deliberations on this important topic.

The rural economy is the bread and butter of the African people. Most Africans work and live in rural areas, and the burden of most rural households lies on the shoulders of women. In South Africa, as in most African countries, despite abundant arable land and human resources that could be translated into increased production, income and food security, serious challenges remain. The continent has the highest proportion of people who suffer from the wrath of climate change and hunger, including the largest population living below the poverty line.

We must interrupt these unfortunate patterns in Africa, where human, financial and scientific knowhow exist that could easily address problems of agricultural productivity and food security. Nevertheless, we need partners to address these challenges of low productivity and poor infrastructure, including market access and rebuilding institutions.

Almost all Africa's farming systems depend on rain-fed agriculture. Agricultural productivity thus relies entirely on the environment, and is vulnerable to the effects of climate change. Africa has prioritised agriculture and food security for its socioeconomic development. Our continent has the potential to be the breadbasket of the world.

The close link between climate change and food security is evident in the negative impacts of changing



The Lethobong power station near Johannesburg will use the Durban conference to inform and mobilise South African communities on climate change

weather patterns on food security. This is especially clear with regard to food price increases due to disruptions in farming production capacity caused by floods, drought, fires and land degradation.

As a developing African country, South Africa will use the opportunity of COP-17 to showcase the impacts of climate change. We will take forward the good work done by Mexico and approach the meeting in a spirit of open consultation with all parties and stakeholders. This will enable us to work toward a comprehensive outcome that is acceptable to all parties.

If urgent action is not taken soon, climate change will severely affect development, food production and the ability to eradicate poverty in the future.

### South Africa and the G8

South Africa has engaged in G8-Africa outreach since the 2002 Kananaskis Summit, and in the Group of Five (G5) since the 2005 Gleneagles Summit. The G5 also includes Brazil, China, India and Mexico. No G5 outreach session was held at the 2010 Muskoka Summit.

South Africa has been invited by French president Nicolas Sarkozy to participate in G8-Africa outreach at the Deauville Summit on 27 May.

The Africa Action Plan, launched at Kananaskis, constituted an undertaking by the G8 to support the New Partnership for Africa's Development (NEPAD), previously introduced at the 2001 Genoa Summit. The African Partnership Forum (APF) was subsequently formed to identify and address obstacles to the implementation of the Africa Action Plan on the G8 side and NEPAD on the African side.

“Raw commodities will be the mainstay of our economies for years”

- There are four key challenges in G8-Africa outreach:
- the implementation of commitments made at Kananaskis and Gleneagles;
  - the institutional set-up of the APF, which is currently dominated by the Organisation for Economic Co-operation and Development;
  - an integrated response by the G8 to NEPAD; and
  - the need for funding to augment the \$640 million raised by Africa to finance the African Infrastructure Consortium.

### South Africa and the G20

South Africa's key message to the G8 and G20 is that, together as the developing and developed worlds, we should promote stronger and more effective international partnerships for growth and development. If the world is serious about defeating the challenges of under-development, illiteracy and poverty among others, sufficient time and attention must be given to Africa at these summits.

At the G20 Cannes Summit in November, South Africa will emphasise that Africa is open to partnerships and engagement to ensure sustainable development that focuses on society, the economy and the environment, including meeting the UN's Millennium Development Goals. South Africa will also underline that African markets are open for trade and investment. The world should stop viewing Africa as only a destination for development aid.

The G20's Seoul Summit delivered important commitments for strong, sustainable and balanced growth. The Seoul Action Plan specifies deliverables in monetary and exchange rate policies, trade and development policies, fiscal policies, financial reforms and structural reforms.

- Furthermore, the G20 made serious commitments to
- reform and modernise the International Monetary Fund to reflect the changing world economy – through greater representation of emerging markets and developing countries;
  - explore ways to bring stability to the international monetary system;
  - fight protectionism and promote trade and investment;
  - recognise the importance of a prompt conclusion of the Doha Development Round;
  - support the regional integration efforts of African leaders, including supporting their vision of a free trade area through the promotion of trade facilitation and regional infrastructure; and
  - implement structural reforms to boost and sustain global demand, foster job creation and contribute to global rebalancing.

Our relations with the G8 remain nonetheless important, especially on the G8 Africa Action Plan, which includes commitments to support peace and security in Africa.

As a non-permanent member of the UN Security Council and a member of the African Union's Peace and Security Council, South Africa seeks closer working relationships with G8 members on disarmament, demobilisation and reintegration in Africa. We are also interested in exchanging views with the G8 members on their commitment to provide technical and financial assistance to peacekeeping operations.

As Africans, we remain convinced that our journey for the economic, political, social and cultural rebirth of our continent makes it an attractive destination for development partners.

An effort is being made to create an environment for economic growth and development. But there is still much to do in terms of economic reform and the development of infrastructure and social services in Africa. This understanding informs NEPAD.

The biggest development in Africa's recent economic relationships has been the increasing role of countries of the South in trade and investment links. Nevertheless, the advanced economies of the North provide mature markets, helpful networks, innovative technologies and an important source of foreign direct investment.

However, as we work to broaden and deepen mutually reinforcing relations with our partners in the both the North and the South, we make a special appeal on the aspect of fair trade. Progress will be greatly enhanced by economic reforms to enable more inclusive, faster growth. The completion of the Doha round of trade negotiations must thus be a priority, so that developing countries gain favourable access to markets in the developed world without restrictive conditions.

Africa has much potential for raw commodities, which will be the mainstay of our economies for many years to come. It is therefore crucial that we harness and optimise these resources in a global community where there are few trade barriers and protectionist policies. We are particularly pleased that France has indicated that the development agenda will be one of the core priorities for its presidency of the G20.

France, together with Korea and South Africa, is co-chairing the G20's Development Working Group. In view of the urgent and loud call from our continent of Africa, we also support France's particular emphasis on infrastructure and food security for this year. ♦

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# Creating sustainable cities for the 21st century

*The growth of cities is inexorable. The unprecedented pace of urbanisation demands that we adopt new approaches to providing essential services, and realise the possibilities offered by technology.*

By Perry Stoneman and Graham Colclough, vice-presidents, Capgemini

The world is modernising and industrialising faster than ever. Meanwhile, we are witnessing unprecedented population growth: the world's population has nearly tripled since 1950 and today stands at approximately seven billion<sup>1</sup>, an astounding change never to be repeated. These and other factors contribute to the urbanisation that is transforming our planet. Over half the world's population now lives in cities, and by 2050 this figure may rise to 70 per cent globally.<sup>2</sup> As a result, cities are expanding on a massive scale. In 2007, UN Habitat counted 19 megacities with 10 million inhabitants or more, and there will be 26 by 2025.<sup>3</sup>

Cities in the developing world face pressing humanitarian problems that those in developed countries do not – including widespread poverty, the growth of slums, and disease prevention. However, achieving greater sustainability in cities is now a priority for all alike. City dwellers are living beyond their means. Cities account for less than three per cent of the earth's land surface, but up to 80 per cent of greenhouse gas emissions<sup>4</sup>; and rising demand for energy will only worsen the environmental impact of urbanisation. Unless today's leaders and policymakers respond, their children and grandchildren will face the consequences: climate change, shortages of resources and massive strains on infrastructure, with the inhabitants of densely populated megacities in the developing world most vulnerable to the impact.

How can we make cities more sustainable? A city is a complex set of intersecting systems, both physical – such as the energy grid and transport network – and socioeconomic – including law enforcement and governance – whose efficiency and productivity can be improved through strategic vision and modern technology. In recent years, the term 'smart city' has been used in government, the private sector and academia to describe the application of information technology to city services, with the explicit aims of reducing costs, delivering better outcomes, and improving sustainability. Here, highlighting leading practice from some of the organizations we have collaborated with, we consider smarter approaches to energy, transport, and public services.

## Energy: shaping demand, managing supply

Despite providing economies of scope and scale, cities contribute significantly to climate change and rising demands for energy. To counteract this, energy providers must manage supply and demand with less carbon impact.

This goal begins in the home, by progressively shaping customers' demand for energy and making it more sustainable. Customer portals and in-house displays can offer real-time information to help customers correlate their energy consumption

and spending. They can show individuals the pattern and cost of energy use across their household appliances, the energy derived from renewable sources, and the carbon footprint of their homes. Likewise, smart metering has the potential to even out the demand for energy throughout the day, so that the carbon impact of less-clean, peak-time energy generation is reduced. Smart meters enable the flow of renewable energy back onto the grid, and alert customers when their energy use departs from its normal pattern, resulting in higher costs and carbon emissions. Energy providers such as Fortum are deploying smart meters, making the meter-reading process more efficient and giving the possibility of a time-of-use pricing approach that encourages customers to exploit off-peak energy.

The same principle must be applied to the broader energy infrastructure. The traditional power grid carried energy in one direction from the power plant to the points of use. Smart grids, now being introduced in China, North America and Europe, support the monitoring and management of existing carbon-based energy alongside renewable energy systems through two-way energy flow and distributed generation, to reduce overall consumption.

## Transport: enabling smarter mobility

As cities expand, suburbanisation widens their footprint and increases the distances their inhabitants travel for work and leisure. An effective transport system thus becomes vital to the city's productivity and delivers economic, social, environmental and health benefits for everyone.

Traffic congestion is a typical urban problem, especially in rapidly expanding cities. Here too, user behaviour can be changed to make better use of capacity. The Dutch Ministry of Transport introduced road-pricing initiatives that resulted in traffic being more evenly distributed, and the province of Utrecht developed a two-way communication system that gathers real-time traffic information and proactively suggests less-congested routes to drivers.

However, long-term sustainability depends on maximizing use of public transport as an alternative to the car. The most forward-thinking cities are developing integrated networks that allow people to make connections easily and take the fastest route using multiple modes of transport. Ideally these will be underpinned by smart solutions to fares and ticketing such as London's Oyster card, supported by a single multi-modal customer-service platform. Real-time passenger information on services will become the norm, as SNCF and Dutch Rail have already identified, because by helping customers make informed choices about their routes, transport providers can improve the customer experience while making better use of capacity.



Shanghai, China's most populous city, has seen rapid development since the 1990s and is at the heart of global finance and trade

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## The current trends in population and cities, compounded by today's levels of consumption and waste, do not point towards a sustainable future

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### Public services: improving access and efficiency

Poor public services impede the attractiveness, and thus the development, of a city. Faced with rapidly growing and changing populations, city administrations must maximise their efficiency, broaden access to services, and become more adept – not only in responding to citizens' needs, but also in proactively identifying the services that individuals, households or businesses are likely to require.

By making government *accessible* to customers via a combination of channels, including online, phone and face to face, agencies can offer citizens and businesses choice and flexibility, while improving cost-efficiency. Bureaucracy too often makes services difficult for customers to reach – unified access is the ideal. Many cities globally have realized this and are implementing progressively better means of access. Public-sector organizations can often deliver game-changing service improvements by simplifying processes and driving down their operating costs through streamlining service chains across multiple organisations, sharing assets, and implementing e-procurement platforms. Stockholm is one of several cities whose administration drives towards streamlining its customer services, freeing up resources to focus on delivery of services on the front line.

The current trends in population and cities, compounded by today's levels of consumption and waste, do not point towards a sustainable future. To steer a different course, cities need collaborative leadership, the vision to turn the latest technologies to their advantage and the aptitude to engage

their customer base in a way that fundamentally changes the game. Cities' system of systems presents a complex web for decisionmakers to navigate through, to optimise economic, social and environmental outcomes. Sustainability is paramount. Europe's emerging Reference Framework for Sustainable Cities promises to facilitate the kind of multilevel dialogue and experience sharing that is required to build vital capacity, and to provide valuable tools and metrics to foster improvement. However, the challenge transcends the developed, developing and undeveloped worlds, and demands sustained commitment from city leadership, industry and each of us to act now – for those that the 'blessed generation' leaves behind.

For more information, contact [perry.stoneman@capgemini.com](mailto:perry.stoneman@capgemini.com) or [graham.colclough@capgemini.com](mailto:graham.colclough@capgemini.com), or visit [www.capgemini.com](http://www.capgemini.com)

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### Footnotes

- 1 *World Population Prospects: The 2008 Revision*, United Nations Population Division, Department of Economic and Social Affairs, New York, 2009. [www.esa.un.org](http://www.esa.un.org)
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# Key challenges in environment and climate change

*Global warming and climate change stories are never far from the news headlines, along with the need to develop a greener economy. Sustainable and renewable energy sources, such as solar power, could be the answer to the energy dilemma*

**By** Achim Steiner, United Nations under-secretary general, executive director, United Nations Environment Programme

In just two years, the idea of a green economy, with its links to sustainable development and poverty eradication, has gone from being an interesting idea to being among the top two issues at the upcoming United Nations Conference on Sustainable Development, or Rio+20, in Brazil on 4-6 June 2012. It is also among the priorities for the French presidency of the G8 summit in Deauville, under the theme of green growth and innovation.

Many observers may wonder whether the green economy is just pleasing jargon or a genuinely new pathway to a low-carbon, resource-efficient and sustainable

21st century. Is it the fundamental departure from the development models of the past that its advocates proclaim, or just another case of the emperor's new environmental clothes?

Perhaps the answer can be found in some of the extraordinary transitions taking place in the electricity and energy sectors around the world. Many people, for example, still question whether solar power could be anything but a niche market for enthusiasts or a costly white elephant, over-hyped by environmental do-gooders.

In 2002, one private equity fund estimated that annual installations of solar photovoltaic (PV) arrays might reach

1.5 gigawatts (Gw) by 2010. In fact, 17.5Gw was installed in 2010, up 130 per cent from 2009. PV installations are forecast to rise further this year, by perhaps 20.5Gw, taking global capacity to around 50Gw – the equivalent of around 15 nuclear reactors.

This is happening not only in developed economies such as Germany, Spain and the United States, but also in countries such as Bangladesh, Brazil, China, India, Mexico and Morocco. Indeed, according to IMS Market Research, more than 30 countries will be part of this emerging solar revolution by 2015.

None of this has come about by chance. Some countries have moved early to embrace the energy dimension of a green economy, and introduced the necessary public policies and incentives. Considerable manufacturing capacity has been added, which has halved costs over the past two years. In fact, PV prices are set to halve again this year.

A nuclear power plant can take up to 15 years to build, and a coal-fired power station around five years. Mid-size solar plants of 5 to 10 megawatts, however, are now taking only about three to six months to get from the planning stage to construction. With the advent of smart grids and free-market pricing, solar PV seems well positioned to provide solutions that are scalable and quick to build.

The International Energy Agency estimates that achieving universal access to electricity by 2030 will require around \$33 billion in additional annual investments in the power sector. That sounds like a lot of money, especially in the wake of the economic and financial crisis that is still troubling large parts of the world. However, new investment, just in solar PV, was around \$89 billion in 2010. Multibillion-dollar investments also flowed into wind farms, geothermal plants and a host of other renewable energy technologies.

The tender shoots of a green economy are emerging across the power sector, driven by concerns about climate change, air pollution and energy security – as well as by the desire to generate new kinds of competitive, employment-growing industries. They can also be seen in the growth of recycling industries in Korea, or the way Indonesia is factoring forests into its social and economic planning. The challenge for Rio+20 is to agree on a range of forward-looking policies that can be deployed in part, or in whole, to accelerate this.

At its Governing Council/Global Ministerial Environment Forum, held recently in Nairobi, Kenya, the United Nations Environment Programme (UNEP) launched what it hopes will be a contribution to this debate as the world again travels the road to Rio, with the release of a *Transition to a Green Economy*.

The report analyses how a global investment of two per cent of global gross domestic product (GDP), equal to around \$1.3 trillion a year at current levels, in the green economy could unleash economic growth and positive



Solar power energy is one green solution that will offset carbon dioxide emissions

“The tender shoots of a green economy are emerging across the power sector, driven by concerns about climate change, air pollution and energy security”

social outcomes, while keeping humanity's planetary footprint within sustainable boundaries.

To place this amount in perspective, it is less than one-tenth of the total annual investment in physical capital. Meanwhile, the world currently spends between 1 and 2 per cent of global GDP on a range of subsidies that often perpetuate unsustainable resource use in areas such as fossil fuels and agriculture, including pesticide, water and fisheries subsidies that could be harvested to fast-track a transition.

In respect to fossil fuel subsidies, both the G8 and the G20, among others, have committed themselves to addressing these in declarations from previous summits. Some countries, such as Indonesia, are already moving towards this.

The UNEP report models the effects on 10 sectors, from agriculture, fisheries and forests to transport and buildings, that are as relevant to state-led economies as they are to more market-driven economies – and as relevant to developing countries as they are to developed countries. Indeed, in some cases, close to 90 per cent of the GDP of the poor is linked to nature or natural capital, such as forests and freshwater. In addition, an overall transition to a green economy would realise per capita incomes higher than under current economic models, while reducing the ecological footprint by nearly 50 per cent in 2050, compared to business as usual.

The UNEP report acknowledges that in the short term, job losses in some sectors – fisheries for example – are inevitable if they are to make the transition to sustainability. Investment, in some cases funded from cuts in harmful subsidies, will be required to re-skill and re-train some sections of the global workforce to ensure a fair and socially acceptable transition.

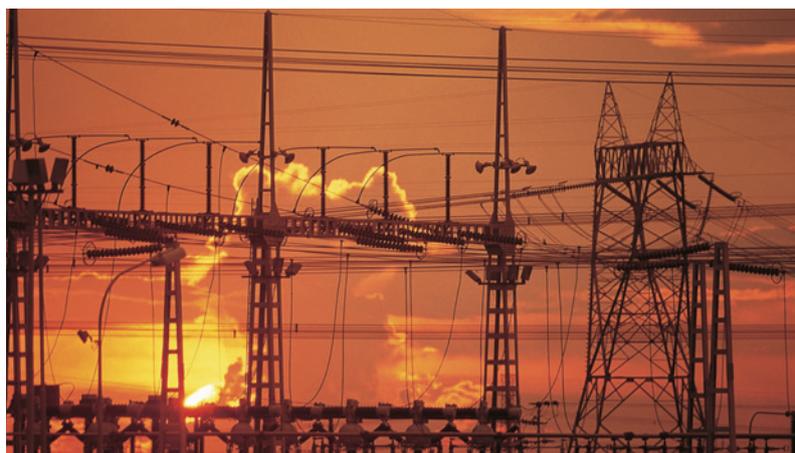
The report makes the case, however, that over time, the number of “new and decent jobs created” in sectors – ranging from renewable energies to more sustainable agriculture – will offset those lost from the former “brown economy”. For example, investing about 1.25 per cent of global GDP each year in energy efficiency and renewable energies could cut global primary energy demand by 9 per cent in 2020, and close to 40 per cent by 2050.

Employment levels in the energy sector would be one fifth higher than under a business-as-usual scenario, because renewable energies will take close to 30 per cent of the share of primary global energy demand by mid-century.

Under a green economy scenario, savings on capital and fuel costs in power generation would average \$760 billion a year between 2010 and 2050.

There will be those who remain sceptical at the mere notion of a green economy and dismiss such far-reaching transitions. Deauville, en route to Rio, is a moment to put the numbers on the table and show how advances in solar power alone are starting to prove them wrong. ♦

# CAF agenda for sustainable energy development



*Strongly committed to the environment as part of its mission to promote sustainable development and regional integration, CAF has financed energy projects worth more than US\$10 billion in South America over the last 10 years, and approved approximately US\$10.5 billion in loans during 2010*

## Corporate Profile

CAF is a multilateral financial institution that mobilises resources from international markets to Latin America, in order to provide multiple financial services to public- and private-sector clients in its shareholder countries. The Institution is committed to sustainable development and regional integration.

CAF offers its clients multiple financial instruments adapted to the requirements of the region. CAF also strengthens the institutional capacity of public organisations responsible for infrastructure management, by contributing to improving the analysis, planning and financing structure of infrastructure projects, through knowledge development and its own expertise.

In 2010, CAF approved approximately \$10.5 billion in loans, and demonstrated its catalytic role by attracting funds to Latin America from industrialized countries, promoting investment and trade opportunities in the region.

The Agenda for Comprehensive Development proposed by CAF seeks high, sustained and quality growth in Latin America. The attainment of these objectives needs to build on progress already achieved in macroeconomic stability, on improvements in microeconomic efficiency and on assigning the highest priority to promoting social equity, inclusion and poverty reduction, while ensuring environmental sustainability. This policy framework is necessary to address the challenges and collective problems of the region.

This integrated vision is the result of an important research programme on development issues and public policies supported both by the intellectual effort of the Institution itself, and by interacting with the public, private and academic sectors of Latin America. This program has spawned a series of specialised activities, which complement CAF's financial and business strategies and provide further support for its shareholders.

Headquartered in Caracas, CAF was established in 1970. At present, it has offices in Bogota, Brasilia, Buenos Aires, La Paz, Lima, Madrid, Montevideo, Panama City and Quito. Its shareholders are Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Jamaica, Mexico, Panama, Paraguay, Peru, Portugal, Spain, Trinidad and Tobago, Uruguay, Venezuela and 14 private banks in the region.

## CAF Sustainable Energy Programme

The Institution has successfully developed a financing model adapted to customer needs, aimed at both the public and private sectors; furthermore, it has created innovative tools for energy financing, and has a well-defined environmental strategy to ensure that the projects it supports are friendly to the environment and contribute to equity and social inclusion. It also has a network of offices in the region that allows it to identify and serve customer needs first-hand and in a timely manner.

CAF has financed over \$10 billion in energy projects in South America during the last 10 years, and it is currently the principal source of multilateral energy financing in the region. For CAF, it is also important that the resources with which it supports the energy sector also add value to Latin America's competitive advantages, especially regarding scientific and technological development and the energy-related service industries.

A diverse combination of public policies is required to effectively channel public and private financial resources – as well as technical expertise – in order to develop infrastructure, overcome geographic barriers, integrate regions and communities, and increase economic productivity.

CAF's Sustainable Energy Programme aims to identify and promote CAF's strategic lines of action in the energy sector. Some of the strategic guidelines that lead CAF's activities are:

- a) Promoting energy-integration projects: acting as a catalyst for "integration projects" aimed at creating or strengthening development priorities that will form the basis for future integrated markets;
- b) Improving the quality and coverage of electricity services: encouraging development of policies, regulatory actions, business strategies and implementation mechanisms to broaden coverage of electricity services, reduce inefficiencies etc;
- c) Supporting energy efficiency and renewable energy: especially small-scale hydropower plants, biofuels and wind energy, among others, in addition to evaluations of resource potential. Furthermore, it will support energy efficiency both from the demand and supply side of energy markets, so as to contribute positively to the mitigating climate-change effects;



## CAF strengthens the institutional capacity of public organisations by contributing to improving the analysis, planning and financing of infrastructure projects

- d) Articulating national and regional networks: these networks ought to be specifically designed to promote knowledge creation, the exchange of experiences, support for corporate governance issues, for example, in order to help attain a competitive balance in the sector, and to serve as a catalyst for collective action among stakeholders for the benefit of countries and industry alike.

CAF currently features the following tools to support the energy sector:

- Latin American Carbon Programme (PLAC+e): Its objectives are: (i) to promote and participate actively in the development of emissions-reduction markets, and the capture of greenhouse gases (GHG); (ii) support the identification, development and financing of GHG-reduction projects, clean alternative energy, and energy efficiency in Latin America; and (iii) the strengthening of institutions and mechanisms to stimulate and consolidate the various markets for greenhouse gases and clean alternative energy;
- Credit line aimed at supporting the development of climate-change mitigation programs and projects (CAF-KFW: €150 million): this credit line seeks to promote the implementation of climate-change mitigation projects in the public and private sectors. Through cheaper long-term financing and grace periods, the programme includes wind-power technologies, solar, geothermal, biomass and sustainable biofuels, hydropower technology, energy efficiency, energy-saving transport, industrial environmental protection, ecological development of densely populated areas and climate-change adaptation;
- Special Financing Programme for Clean Energy Projects (PROPEL): PROPEL is a \$50 million fund aimed at providing assistance to the structuring and financing of small-scale, clean-energy and energy-efficiency projects in CAF's shareholders. PROPEL will finance or invest in "green field" projects and corporate investments (expansion or rehabilitation) through the following instruments: (i) senior or subordinated term loans, (ii) partial credit guarantees, and (iii) venture capital (preferred shares, common shares, convertible bonds etc).

### Environmental development agenda

CAF is strongly committed to the environment as part of its mission to promote sustainable development and regional integration. Through the development of innovative financing schemes and specific strategies and programmes, CAF's efforts

contribute to increasing environmental investments in the countries of the region.

The institution contributes to the conservation and sustainable use of ecosystems. In addition, CAF also provides support in sustainable management and preservation of environmental services, climate-change mitigation, air-quality problems, reduction of industrial and urban pollution, prevention and mitigation of natural disaster risks, and the improvement and dissemination of environmental and territorial information. CAF also supports the decentralisation processes, strengthening civil society, public and private institutions, and other actors involved in the environmental sector.

As part of its environmental strategy, CAF has defined a set of fundamental principles as a conceptual framework that guides the environmental management of the Institution and aims at two fundamental objectives:

- Constantly improve the institutional frameworks and processes in relevant entities so as to ensure they are managed in environmentally and socially responsible ways;
- Support shareholder countries in the conservation and sustainable use of natural resources and ecosystems, and in the development of the environmental sector, by incorporating long-term sustainability criteria and principles.

CAF promotes the conservation and sustainable use of ecosystems and natural resources by supporting conservation, restoration and sanitation projects. It promotes and develops environment-related markets, improves the quality of environmental investments, provides institutional support and promotes social and environmental responsibility.

- Biodiversity Program (BioCAF)
- Latin American Carbon and Clean Energies Programme (PLAC+e)
- Natural Disaster Risk Management Programme
- Program for Sustainable Development in Financial Institutions

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# A winning partnership: business with backing from government

*To make real progress on sustainability, the concept needs to be integrated into core business models. And to accelerate this process, governments must provide support*

By Björn Stigson, president, World Business Council for Sustainable Development

The alignment of business and sustainability has come a long way since the United Nations Conference on Environment and Development, held in Rio de Janeiro 19 years ago. Chief executive officers (CEOs) are now embracing sustainability as a market advantage and a business imperative for a future world where resources and carbon will be constrained.

In fact, more than 90 per cent of CEOs around the world believe that sustainability issues will be critical to the future success of their businesses, according to a 2010 survey by the UN Global Compact.

But to hit the sustainability milestones needed to create a world in which nine billion people are living well and within the limits of the planet by 2050, governments must partner with business and provide incentives and market certainty for sustainability. It will take government action to spur companies and consumers to accelerate the inclusion of sustainability into their near- and long-term decisions.

It is hard to deny the importance, risks and opportunities of sustainable development when an additional 2.3 billion people will inhabit the world in 40 years. By then, 70 per cent of the population will be concentrated in cities. Here, they will produce 20 per cent more municipal waste (more than 13 billion tonnes), if the world continues a system in which only 25 per cent of all waste is recovered or recycled. The expanded population will also require agricultural productivity to increase by two per cent annually, a growth rate similar to that during the Green Revolution of the 1950s and 1960s, and will use other natural resources at similarly increased rates.

“Sustainable development’s market potential has not been fully incorporated into standard business practices”

Although these statistics are daunting, they also point to enormous opportunities. In fact, sustainable development business opportunities in natural resources, health and education alone could add up to \$10 trillion at today’s prices, or 4.5 per cent of global gross domestic product, by 2050.

Still, by and large, sustainable development’s market potential has not been fully incorporated into standard business practices. Only 44 per cent of CEOs cite revenue growth and cost reduction as driving factors for taking action on sustainability, while more than 70 per cent of CEOs cite ‘brand, trust and reputation’ as one of the top three factors for action, according to the UN Global Compact survey.

The companies that quickly grasp sustainable development’s impact on their bottom line, rather than just on their public relations, will be the winners of the ‘green race’ involving low-carbon, sustainable solutions. This is a key message of the World Business Council for Sustainable Development (WBCSD) and a foundation for its ‘Vision 2050’, a scenario in which nine billion people are living well and within the limits of the planet by 2050.

The belief that sustainable business models are an economic story is gaining momentum in the business world. Yet business cannot move alone. Governments must support the adoption of sustainable development into corporate culture. Indeed, they can enable it. Strong national and international frameworks can guide business investments and decisions by providing companies with necessary incentives and stability. Governments must be as committed as business to incorporating sustainability into their policies on regulations, incentives and management decisions as consumers.

For example, energy use in buildings is 40 per cent of the final energy consumption and carbon dioxide emissions in most countries. The International Energy Agency has concluded that buildings must cut 18.2 gigatonnes (GT) of emissions over the next two decades to reach its goal of cutting 48GT in total carbon emissions by 2050.

But market forces will not transform buildings fast enough to meet this goal without policy intervention. A WBCSD study on energy efficiency in buildings found that increasing the price of energy or carbon will boost reductions in future carbon emissions only by about three per cent. Government policy for setting energy-efficient building standards will be a critical component in reaching emissions-reduction targets, as well as helping to ensure energy security.

It will take a broad mix of policy measures to fully transform the sector. The European Commission recently concluded that, if European Union members increase energy-saving measures, the EU could meet the short-term goal of cutting greenhouse gas emissions by 25 per cent by 2020 – on a path to reducing emissions by 80 per cent by 2050. The Commission urged EU members to require the refurbishment of at least three per cent of their buildings each year and to apply higher efficiency standards for government purchases of goods and services.

Strong government sustainability policies are important for more than just meeting targets. Countries are in a 'green race' of their own – one that will determine the great economic and geopolitical influence for the 21st century. Governments that can create conditions in which businesses will be rewarded for their investment in sustainability will become the most attractive to companies, innovative thinkers and jobs. Those societies will be the true winners of the future.

At present, the G8 members represent the most advanced economies in the world. The G8 forum presents an ideal platform for members to take the lead on developing incentives and sound regulatory frameworks. In this way, they will show more CEOs that the goals of sustainability and profitability are aligned.

The direct, yet informal, structure of the G8 presents a favourable setting for including input from business into the discussion. One of the biggest obstacles to meaningful progress on sustainability is the lack of coordination and consultation – and even awareness – between how governments set their policies and how companies conduct business.

Solar-powered house, Washington DC. Buildings need to cut 18.2GT of emissions in the next two decades to reach 2050 goals

The G8 Deauville Summit is an opportunity for its participants to break down this public-private barrier and start to create more public-private partnerships. The world needs a model to incorporate business into discussions that can be carried on to the G20 summit later this year and to Rio 2012 next year.

Improving the lines of communication and coordination between governments and business will be an essential element on the road to sustainability. The methods for measuring progress, setting prices and values, accessing financing, implementing taxes and supporting research and innovation require reform. These changes are required to unleash the full potential of private industry so that it can help to solve the world's sustainability issues.

Businesses around the world stand ready to help. A coalition of business associations – comprising WBCSD, the International Chamber of Commerce and the UN Global Compact – has already formed the Business Action for Sustainable Development 2012 (BASD 2012). This organisation aims to ensure strong business engagement by providing positive and constructive business input into the Rio 2012 process.

Building sustainable development into core business models will require both company initiative and government guidance. Governments that implement proper policies to support sustainable development will reap the benefits of attracting businesses and building stronger economies. Companies that envision and act on the prospects of sustainability, both to mitigate risk and capitalise on opportunities, will lead the financial markets. Now is the time for the G8 to lead this prosperous public-private partnership into a sustainable future. ♦



# The magic of forests: a Norwegian perspective

## Forest owners in Norway manage photosynthesis for the good of society

The Norwegian forests absorb a net amount of CO<sub>2</sub> that almost equates to the total Norwegian CO<sub>2</sub> emissions from fossil fuel-based heating and transport.

The photosynthesis is Nature's never-ending cycle for converting sunlight, CO<sub>2</sub> and water into biomass. The forests need good management and stewardship to fulfil their place in the cycle and provide optimal value, be it for recreational purposes, for CO<sub>2</sub> absorption or as timber. There are some 120,000 forest owners in Norway who, in this way, become stewards of the photosynthesis. Many of these are organised in forest cooperatives. Viken Skog BA is one of eight forest cooperatives in Norway, owned by 11,800 forest owners. They manage their property according to the age-old principle of handing it over to the next generation in better condition than when they themselves took charge of it.

Well-managed forests yield economic value multiple times over the pure timber value. Timber deliveries worth NOK 1 million will give a total value creation in Norwegian society of NOK 10 million, as raw material used in such varied applications as newspapers, parquet flooring or dissolving pulp used in a summer dress.

The forests of Norway have high recreational value for the population. Norwegian forestry allows people to wander freely in the woods and opens up for widespread activities both in summer and winter. The forests may take on an even greater future role in securing the general health of the population by providing space and opportunity to pursue various sports and outdoor activities.



# Mobilising energy innovation

*Climate change poses huge questions for humanity, but in doing so it offers the world's communities a focus through which to build bridges across cultural divides and work together for a more sustainable global village. One company is at the forefront of organising intellectual and material resources towards that future*

**W**e are on the threshold of an energy revolution that will give low-carbon technologies a crucial role. Energy efficiency, many types of renewable energy, carbon capture and storage, new energy transportation and distribution technologies and sustainable mobility will all require widespread deployment if we are to reach our world's greenhouse-gas emission goals. Every country and sector of the economy must be involved.

## Contributing through collaboration

Alliander, the largest energy network company in the Netherlands, is set on contributing to this global responsibility by collaborating with universities and research labs, government and public organisations, vendors and solution integrators.

## Understanding the need

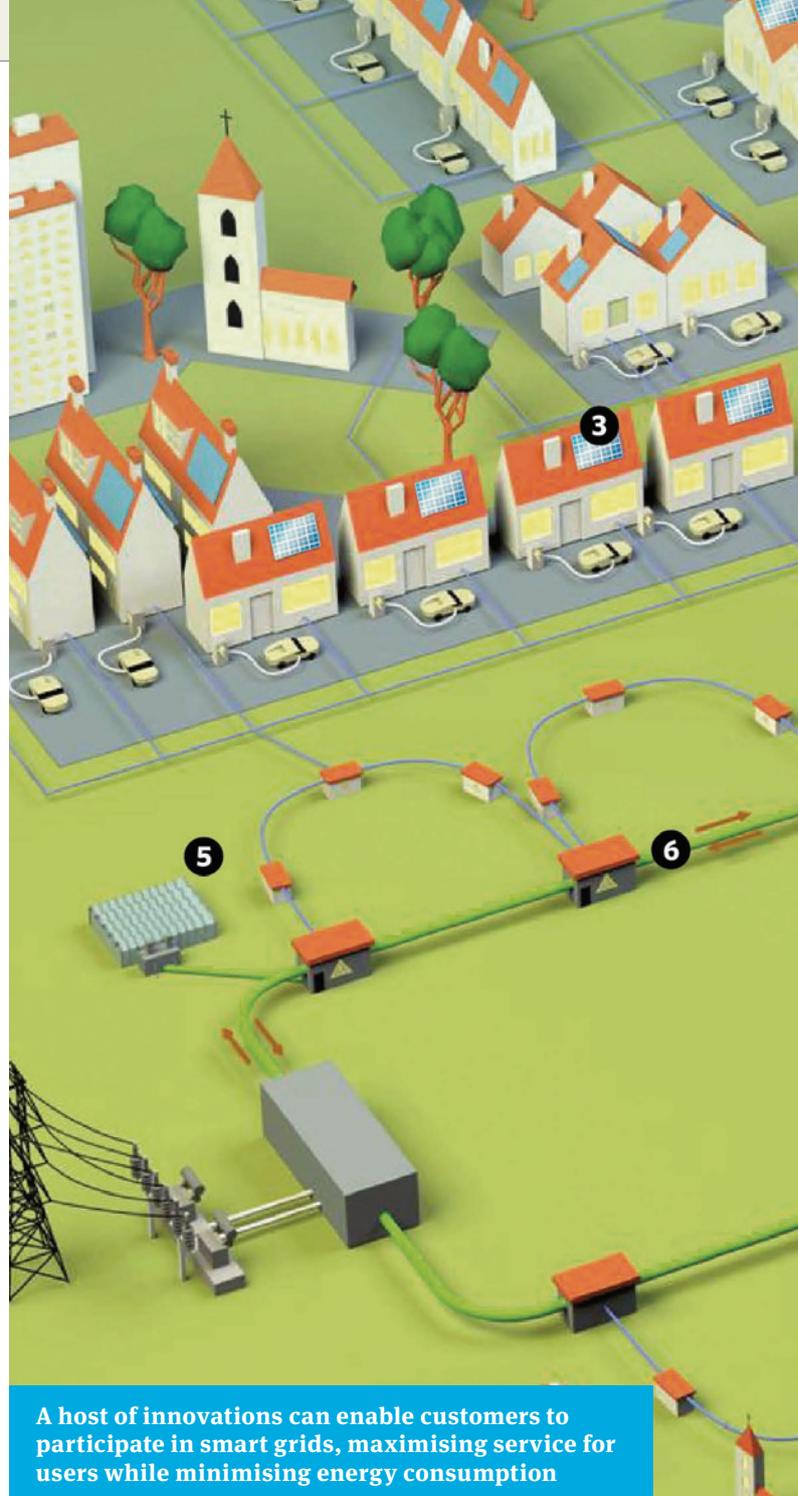
At Alliander we understand the urgent need for this energy transition and we contribute with demonstration projects based on technology roadmaps and international partnerships.

## Smart grid infrastructure through customer participation

To date, many of the Alliander demonstration projects have focused on implementing a trusted and reliable smart grid infrastructure with active customer participation. Projects include smart meter pilots, energy-saving pilots and showing leadership in the reliability and the security of the smart grid.

## Standardisation is the key

Smart meter pilots at Alliander focus on standardisation. In different countries smart meter roll-outs are being implemented in different ways and different bodies are held responsible for smart metering. Therefore, a standard set of services,



**A host of innovations can enable customers to participate in smart grids, maximising service for users while minimising energy consumption**

functionalities, architectures, use-cases and technologies should be made available. A common set of standards will serve many goals. It will ensure interoperability, reduce duplication of work, create a level playing field and maximise economies of scale. Common standards can also be used as a reference when drafting international tenders and contracts. And finally, these standards could help in removing significant delays and extra costs of multiple testing and approval. This will enable the industry to market its products faster and cheaper.

## Demand-side response vital

Energy-saving pilots focus on the demand-side response by the consumer. The increased availability of information on energy consumption should help customers to make more informed decisions on their energy saving.

Devices for saving energy or that offer an off switch can intelligently cut all power to home appliances if desired. Home-automation sensors, switches and controllers can be used to handle more complex sensing and switching.



### Support and advice tip the balance

Decisionmakers must be mindful that information alone is often not enough to help consumers change their behaviour. Support and advice are frequently needed to maximise energy savings. Customers must also be able to easily evaluate deals available on the market by comparing their energy consumption patterns. In addition, customers who also produce energy need to have the ability to participate in relevant energy markets in order to purchase and sell energy.

### Security of supply is a guiding principle

Assuring the security of supply is at the heart of Alliander's culture. Therefore, we are committed to only implement smart grids with the highest possible reliability. Alliander believes that improvements in ICT security increase the robustness and resilience of the smart grid from both a physical and cyber perspective. In this way, extra ICT security will reduce the probability and consequences of human error, technical failure, deliberate attacks and natural disasters.

### International effort to overcome barriers

What Alliander learned from these pilot projects was that significant barriers must be overcome in order to deploy smart grids on a worldwide scale.

Clear international regulation and standardisation and a free exchange of information are critical success factors. To implement safe and reliable smart grids, governments, research organisations, industry, the financial sector and international organisations must work together. Alliander is actively stimulating that goal to enable smart grids to deliver its substantial contribution to a clean energy future.



[www.alliander.com](http://www.alliander.com)