

# SUSTAINABLE EFFORTS



**The world and its businesses face a daunting challenge in order to maintain life as we know it. The good news? Not all companies have their heads stuck in the ground**

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he world as we know it is changing at a remarkable pace, dismissing the notion of ever again doing “business as usual.” For starters, the global population is growing—and growing. And as it grows, natural resources are diminishing. This dynamic presents a “fight or flight” challenge to businesses. Smart businesses are choosing to fight by developing sustainable solutions, and they will likely prosper as a result. The businesses that flee, and don’t adapt, could ultimately fail.

If that sounds a bit grim, there’s a bright side: smart businesses are already prepping for the challenge. The global pursuit of sustainable technologies—also known as the “green race”—is indeed on. A number of countries, paced by China and its all-out resolve, along with a number of multinational corporations, have eagerly embraced the challenge, says Björn Stigson, president of the World Business Council for Sustainable Development



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## LEED® by example.

Platinum certified. That’s what the U.S. Green Building Council® awarded Johnson Controls for being a model of energy efficiency and sustainability at our Wisconsin headquarters campus. This represents the largest concentration of LEED Platinum buildings—four—on one site ever awarded.

Even more impressive is what we did to earn this recognition. Hundreds of wireless controllers and sensors are linked to our Metasys® building management system, which continuously monitors and controls energy use. The result? Energy usage slashed by 21% even as campus space doubled. Onsite solar electricity generation reduces greenhouse gas emissions by 827,000 pounds annually. Low-flow fixtures and rainwater recycling save 595,000 gallons of water a year. These are just some of the hundreds of improvements we have made to earn LEED Platinum distinction.

Payback? We expect to recoup our investment in energy and operational efficiency within eight years. And our employees are even more engaged with an enhanced work environment that features desktop control of workspace temperature, lighting, airflow and white noise.

We have made our headquarters a campus that works. From educational institutions and hospitals, to government facilities and commercial buildings, Johnson Controls can make your buildings work for you more efficiently, sustainably and profitably. To learn more, visit [MakeYourBuildingsWork.com](http://MakeYourBuildingsWork.com).



(WBCSD), one of the world's most influential business coalitions. Others, he adds, such as the U.S. and many in Europe, have some catching up to do.

In any event, businesses are not participating in the green race because they strive for environmental accolades, but rather because they understand that the business paradigm is shifting and the pressures on their markets and resources are growing, reports the WBCSD. In 2010, companies pushed one another more than ever to be more sustainable—simply because it is fiscally responsible and benefits the bottom line. However, to succeed in the future, business and government must partner on sustainable development, according to the organization. Governments must implement frameworks that incentivize businesses to stimulate green innovation and technology in order to create a sustainable market. By

2030, \$40 trillion will need to be invested in urban infrastructure worldwide, notes Stigson, adding that nations that don't understand this dynamic will suffer or even fail.

One example of the power of such a partnership occurred in the early 1990s, when Eskom, a public electricity utility in South Africa, in conjunction with its shareholder, the South African government, initiated an electrification program to help offset the fact that only about 50 percent of South Africans had access to electricity, says Dr. Steve Lennon, the company's managing director for corporate services. Today, that number has grown to 70 percent. And it's not as if Eskom was motivated to action by the potential for a financial windfall. "We were giving access to the poorest of the poor, so we knew it wouldn't help our revenues and would, in fact, cost us money," says Lennon. However, he added,

"We were giving access to electricity to the poorest of the poor, so we knew it wouldn't help our revenues, and would, in fact, cost us money."

Eskom was compelled by the idea that providing citizens with electricity effectively leapfrogged them technologically, giving them access to services like health care and communications.

#### FACING THE CHALLENGE

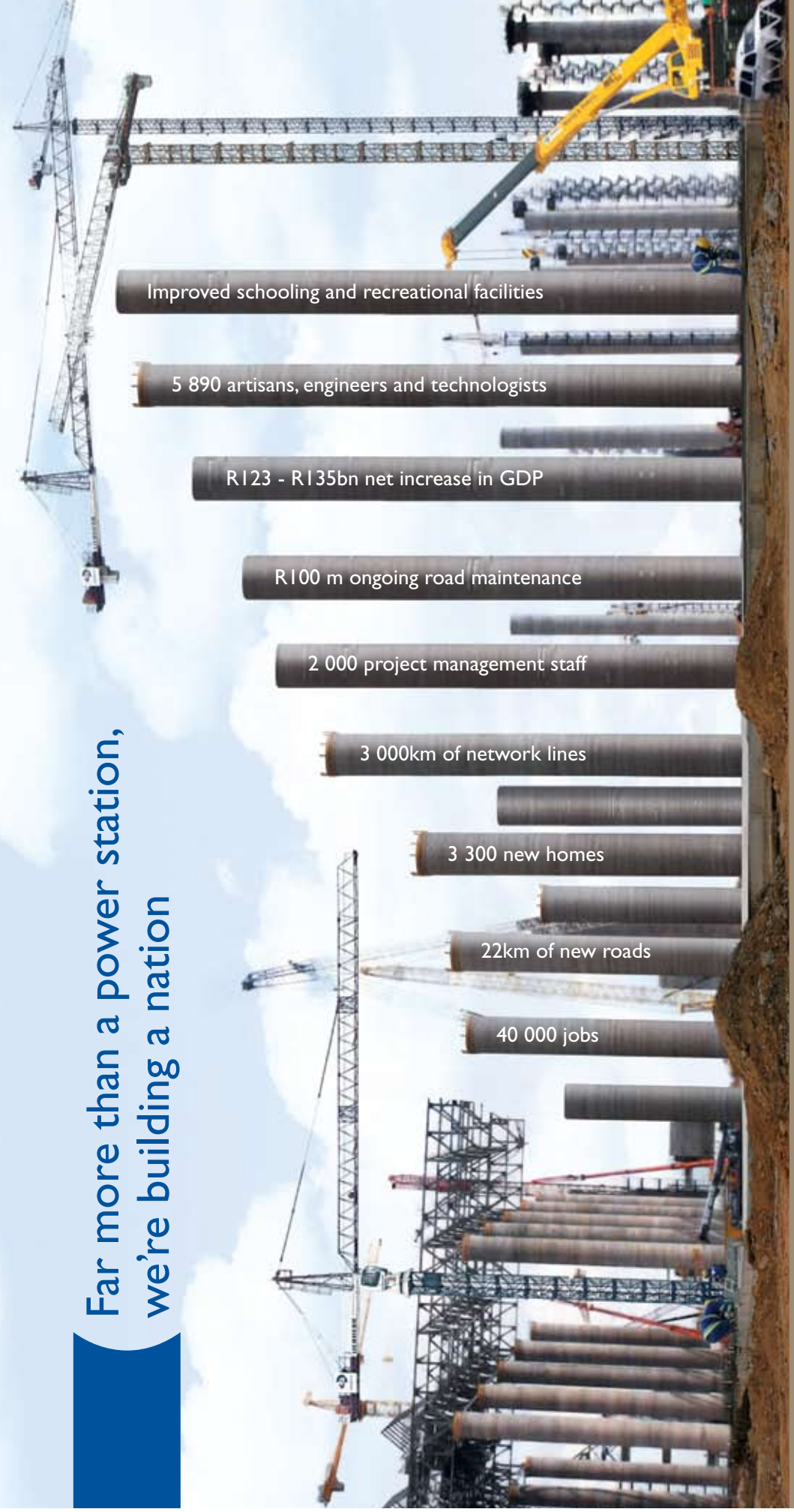
Last year, the WBCSD presented a report, Vision 2050, as a business response to the sustainability challenges the world faces, intended to help shape the sustainability agenda (and perhaps representing a signal to those disinclined to recognize the long-term impact of the issue). Vision 2050 contemplates what the world will look like if such challenges are not tackled. With population growth estimated at 30 percent between now and 2050, and nearly 70 percent of people expected to be living in urban areas, it is clear that building and maintaining cities, infrastructures and livelihoods present an opportunity for investment, while the competition for limited resources grows.



Power lines above a field of maize in Delmas, South Africa. In the next decade, Eskom will add 10,000 megawatts of generation capacity.

NADINE HUTTON/BLOOMBERG

Far more than a power station,  
we're building a nation



It's the biggest building programme ever seen in South Africa. Because our economy urgently needs electricity to sustain its rapid growth. Right now, we simply don't have the capacity to supply enough power. So, over the next five years, Eskom will invest R500bn in building power stations. From creating jobs to developing infrastructure such as roads, railway lines, schools and housing, the social and economic impact will be unprecedented. We're making South Africans work so that we can help make South Africa work. With power we can grow a nation.



Ultimately, winning the green race will mean transforming the world market—in-  
novating and creating demand for resource-  
efficient, low-pollution solutions that the  
world will need, Stigson notes. Moving  
aggressively, China has undertaken several  
initiatives, including the development of  
a five-year sustainability plan. Europe,  
which began building capabilities for green  
technology and demand earlier than China  
and is the world's leading exporter of green  
technology, is also proving formidable, says  
Stigson. However, to compete with China,  
and even Korea, "who are moving very  
fast," Europe must pick up the pace in its  
transformation process, he notes.

In the meantime, progress in the U.S.  
is being stymied by various political factors  
and the sluggish economy, and support  
for the regulatory framework necessary to  
transform green innovations into market de-  
mand has been slow to gel. Consequently,  
many investors are heading elsewhere,  
leaving America to fall farther behind in the  
race, Stigson says.

On the other hand, like Eskom, Paris-  
based Schneider Electric is buoyed by a  
supportive government. Once a product-  
centric business, the company is now  
largely focused on sustainability, gearing  
operations around energy management for  
customers. Schneider has developed an  
intelligent energy management platform  
called "EcoStruxure," and provides its  
customers with recommendations on  
minimizing energy use. "We help them  
better manage their property so they can  
drive down costs based on certain criteria,  
such as energy pricing, peak or off-peak  
demands and weather or temperature  
patterns. You can't manage what you  
can't control; we need visibility to provide  
customers information about where energy  
is consumed. They want to bring it to a tan-  
gible metric that applies to their business,"  
says Jeff Drees, president of the company's  
U.S. operations.

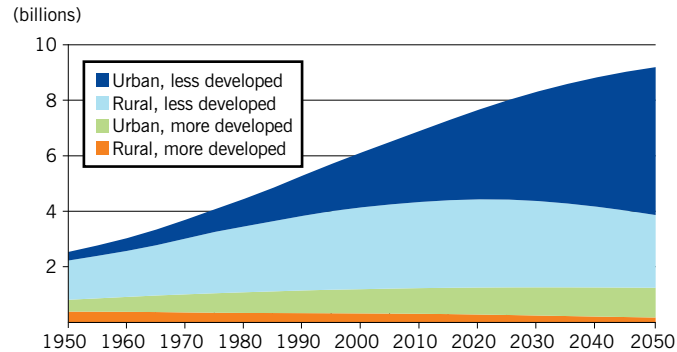
Ultimately, Drees feels business leaders  
want to be good corporate citizens in terms  
of management, but don't know where to  
begin. "We believe that there's a major gap  
around what's going on in the customer's  
operation relative to energy. The questions  
become: 'How much do they consume?'  
and, 'How does it compare to other operat-  
ing expenses for their business?'"

Schneider's highly visible headquarters  
in Paris recently received the prestigious ISO  
50001 designation, a stringently guided  
certification based on benchmarking energy  
efficiency and energy management best

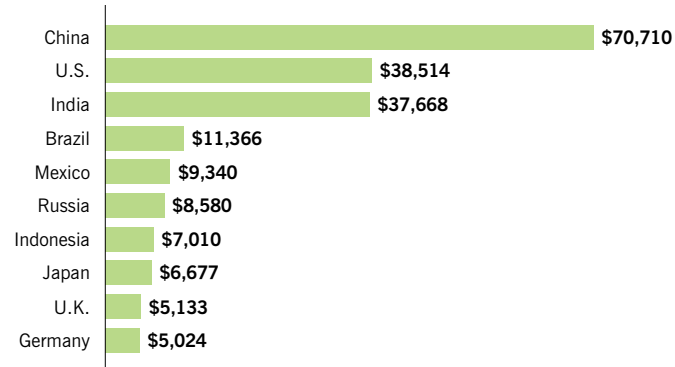
## GROWING CONCERNS



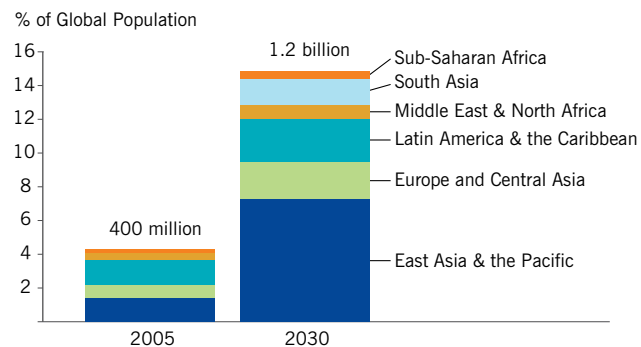
Global population by type of area and by region



Top 10 economies by GDP in 2050 (billions)



Population in low- and middle-income countries earning \$4,000-\$17,000 per capita



## Chunghwa Telecom Cares

### Taiwan's largest telecom company is committed to the local and global communities

In this age of perpetually shifting customer needs and a planet that is being stretched alarmingly close to its limits, it is more important than ever that companies such as Chunghwa Telecom (CHT) maintain steadfast dedication to meeting—and, in fact, far exceeding—corporate social responsibility (CSR) goals. CHT's social role has never been more satisfying and exciting to fulfill on both a personal and professional level, says Chairman and CEO Dr. Shyue-Ching Lu (below, right).

One manifestation of CHT's corporate-wide obsession with CSR is its consistent emphasis on thinking outside of the box. For instance, CHT as a company has evolved and grown alongside generations of Taiwanese people over the decades, and continues to foster a strong bond with the people, says Dr. Lu. Because of this strong relationship, the company is keenly aware of its social responsibilities as a senior corporate citizen. In fact, CHT not only actively invests in telecommunications infrastructure in remote areas that will help those areas grow, but also continues to develop innovative products

designed to meet the needs of society at all levels, including the disadvantaged, Dr. Lu emphasizes.

In 2009, CHT specified new targets for energy savings, promising that by 2012 the amount of electricity the company consumes will be reduced by 12 percent compared to 2007 (excluding new business growth related to next-generation Internet facilities)—a reduction of 168 million GWh and 110,000 metric tons of CO<sub>2</sub>. Together with local vendors, the company developed the iEN (Intelligent Energy Network) and ITS (Intelligent Transportation System) services. The adoption of iEN within CHT proved so welcome and efficient that the service was introduced to its corporate customers and overseas markets. Moving forward, the company also expects to choose only equipment that meets international green standards that have a compliance goal of 2015. Moreover, CHT is a member of the Green Touch Alliance (originated by ALU), and makes efforts with international operators to cut the energy used by communications networks, demonstrating the efficiency of its sustainability program.

To further execute its priorities on this front, CHT has an eye on becoming a pioneer in information communication technology (ICT) in Southeast Asia, and aims to become an indispensable partner for sustainable development to customers, industries, the nation and all mankind, Dr. Lu notes. "In an era dominated by constant change, mastery of technological trends provides us with a firm foundation for expansion into other areas and the opportunity to use our corporate resources to make a contribution to society and the country."

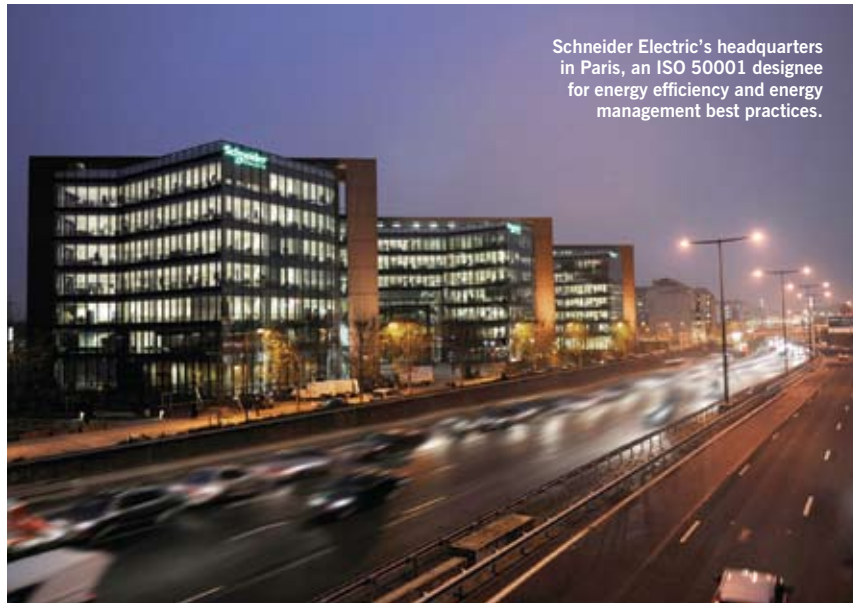
In the big picture, CHT's commitment is especially important given the rate of global population growth and rising energy demands, which have placed undeniable and potentially worrisome strain on the planet. Worldwide energy demand is expected to increase 50 percent by 2030, according to the International Energy Agency, necessitating the need to develop more sources of power and to make the resources the planet already has—such as fossil fuels, coal and natural gas—burn cleaner so they emit less carbon into the air. ●



In 2010, CHT was awarded the first prize of Taiwan CSR Awards by the Taiwan Institute for Sustainable Energy.

SOURCES (FROM TOP): UN POPULATION DIVISION; GOLDMAN SACHS; WORLD BANK. OPPOSITE PAGE: CHT





Schneider Electric's headquarters in Paris, an ISO 50001 designee for energy efficiency and energy management best practices.

Energy use in buildings represents 40 to 50 percent of total energy use, says the WBCSD's Björn Stigson.

practices. The headquarters is the first building in the world to achieve that recognition, Drees points out. Additionally, in the last five years Schneider has saved about \$18 million in energy costs among its North American manufacturing facilities. That's significant, since energy use in buildings represents 40 to 50 percent of total energy use, says Stigson. Furthermore, based on various analyses, Stigson believes it's possible to reduce energy use in buildings by half over the next 40 years, but achieving that goal will require stricter building codes and mandates that require energy-efficient structures. In most countries, however, such decisions are made at the local rather than federal level, which means local officials must make a commitment, as well.

#### GLOBAL PROGRESS

**A**ll over the world, companies are taking action on the sustainability front. In Taiwan, Chunghwa Telecom, the nation's largest telecommunications company and one of the largest in Asia, has for many years promoted specific energy-saving targets for energy efficiency in

buildings. "We have been proactively fulfilling our promises to society," says Dr. Shyue-Ching Lu, Chunghwa's chairman and CEO. "In 2006, we established a corporate social responsibility committee, which oversees the operations of six working groups, including sustainability," he explains. "We are committed to being the benchmark for domestic enterprises in Taiwan by carrying out the Taiwan Stock Exchange Corporation and GreTai Securities Market rules governing corporate social responsibility practices, in hopes of making the best contribution for the sustainable development of corporate management, people and society. We shall remain focused on our core businesses, emphasize our professional competency and improve operational efficiency. Our emphasis is on creating digital opportunities while at the same time promoting environmental sustainability, in the expectation of becoming the most reliable and valuable provider of information and communications services."

In 2011, Chunghwa Telecom was named one of Asia's best-managed companies in a *Finance Asia* poll, the only telecommunications company from Taiwan to win this honor, and also won recognition in the category of "Best Corporate Social Responsibility."

### Helping Lead the Way

**A**t Chunghwa Telecom, leadership is a mantra. The company takes great pride in its commitment to helping oversee long-term



efforts to nurture the planet. As such, it is committed to being a partner in sustainable development for customers, industries, countries and mankind. "Sustainability is a way of life at Chunghwa," says Shyue-Ching Lu, chairman and CEO. "We feel an intense sense of responsibility and commitment to the greater good of those we serve and want to do in as healthy an environment as possible." ●

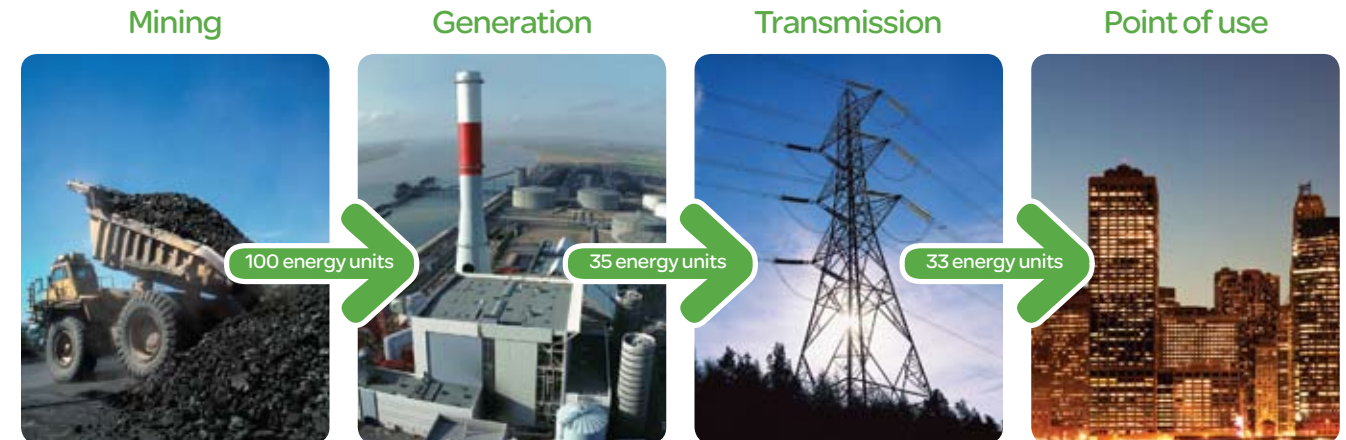
### A Legacy of Sustainability

**S**ustainability is part of Eskom's DNA, says Dr. Steve Lennon, managing director for corporate services. Since the company's



business is inherently long-term and decisions reverberate for decades, Eskom considers it essential to anticipate and be ready to respond to even the most unexpected curves in the road. "Motivated by our absolute dedication to our customers and the long-term welfare of the planet, Eskom is enthusiastically bound to our sustainability initiative. It reflects our staunch commitment to backing our words with action," says Lennon. ●

# The only good watt is a negawatt.



Due to intrinsic inefficiencies, 33 units of energy consumed at the point of use require 100 units of primary energy.

### What's a negawatt? The one you didn't use.

#### Energy saved is money saved.

Yes, the smart grid is coming and we are actively implementing intelligence and innovations to help make it a reality. But we need a solution that will save energy and drive efficiency today as we are building the smarter grids of tomorrow.

#### Introducing EcoStruxure: Active Energy Management Architecture from Power Plant to Plug™

Right now, EcoStruxure solutions from Schneider Electric™ can reduce your energy use by up to 30% while cutting capital and operational costs. End-use efficiency is where our focus needs to be! The percentage of revenue spent on energy by companies could reach 30% by 2020. And there is an urgent need to reduce CO<sub>2</sub> emissions, especially as energy demand escalates. Energy management is the key – the fastest and most effective solution to curb greenhouse gas emissions while improving business performance. In fact, by 2030, energy efficiency and behavior change will offset more CO<sub>2</sub> than all the new wind, solar, and other alternative energy generation methods combined.\*



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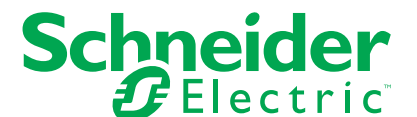
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### EcoStruxure™



#### EcoStruxure solutions cut energy costs today

As energy prices continue to climb, every unit of energy you save matters. One unit saved at the point of use means three units of primary energy not consumed. Today, only EcoStruxure Active Energy Management Architecture can deliver up to 30% energy savings across your buildings, industrial plants, and data centers. You deserve an Efficient Enterprise™!



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\*Source: World Energy Outlook 2009, IEA/OECD

**ENERGY-EFFICIENT BUILDINGS**

**O**ne problem businesses face in the race to sustainability is that energy efficiency costs more up front, even though it's more cost-effective in the long run. According to a recent McKinsey & Co. study, energy-efficiency measures could net a gross savings of more than \$1 trillion by 2020 for the U.S. alone, but would require an up-front investment of \$520 billion.

In 2005, the WBCSD launched the Energy Efficiency in Buildings Project, and, in 2009, introduced the Energy Efficiency in Buildings (EEB) Manifesto. To date, more than 100 organizations have signed on to the EEB. One company looking to improve energy efficiency in buildings is Johnson Controls, which helps customers reduce energy and operational costs by providing building management solutions. According to the Johnson Controls Energy Efficiency Indicator, the company's fifth annual survey of nearly 4,000 building owners and operators around the world, 66 percent of respondents in North America said energy management is important to them, and that energy cost savings, government incentives and enhanced public image are the biggest motivators for energy-efficiency investments.

Despite these beliefs, however, consensus on solutions for energy issues has been unattainable at recent U.N. meetings, creating a potential problem leading to the U.N. Conference on Sustainable Development (Rio+20) in Rio de Janeiro next June, says Stigson. He admits it would have been difficult for government officials to reach any new, far-reaching conclusions pertaining to energy, but sees hope in the fact that the overall process is visible and includes considerable debate. The U.N. is calling 2012 the International Year for Sustainable Energy for All; 1.5 billion people on the planet currently lack basic electricity access.

Of course, climate is another key issue in the green race, but it's unknown whether enough can be done globally to avoid serious climate change. "We basically have a world where nobody's in charge, and the world is moving forward in its own way," says Stigson. Exacerbating matters, he claims, are weak government processes that can't be depended upon to help manage climate issues going forward.

Further reflecting the times, while the principles of a sustainability study Eskom did in 2004 remain viable, Dr. Lennon



Rain gardens help drain excess rain into the retention pond (above) at the renovated headquarters campus of Johnson Controls, Inc. in Glendale, Wis.

Solar panels (left) at the same Johnson Controls campus. Lighted signage on the campus is solar-powered.

JOHNSON CONTROLS (2)

**We see the possibilities.**

For Suncor Energy, growth brings opportunity and a set of new challenges. The biggest one of all: balancing increased development with the need to live up to our social and environmental responsibilities, both as an individual company and collectively as part of Canada's oil sands industry. We believe the key is collaboration. A great example is the Oil Sands Leadership Initiative where Suncor works closely with four companies to improve environmental, social and economic performance in the oil sands industry. With a shared commitment to excellence and innovation, we can work together to build a more sustainable energy future.

**36%** decline in amount of fresh water Suncor has withdrawn from the Athabasca River since 2004\* | **50%** decrease in GHG emission intensity at Suncor's oil sands operation from 1990 levels\* | **\$1.2 billion** actual and planned investments in Suncor's new tailings technology

Vincent Saubestre, executive director, Oil Sands Leadership Initiative



performance  
partnerships  
possibilities



Find out more about Suncor's track record and how we are planning to responsibly develop North America's energy supply.  
[www.suncor.com/sustainability](http://www.suncor.com/sustainability)



\*As at December 31, 2010.  
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A young boy watches as water from a community well fills up a plastic jug in Minqin County, Gansu Province, China. The drinkable water is pumped in from the nearest town 10 km away, because water from local wells is undrinkable.

Many businesses require water to operate, but 20 percent of the world's population lack access to safe drinking water, and 40 percent are without adequate sanitation.

says Eskom has nuanced them significantly. In recent months, the company finalized a strategy to meet, at minimum, the detailed operational requirements of its environmental performance dealing with air and water quality. Additionally, Eskom is expanding on its commitment to a low-carbon future that, in 2004, essentially was sketched out as an aspiration, and now has progressed to the point where the organization has created a renewables business. Eskom has also started projects to reduce the CO<sub>2</sub> emissions from its coal plants, says Lennon.

Estimates show that 85 percent of investments in low-carbon technology will come from the private sector, but that this investment is at risk without a global movement and support toward a reduced emissions framework, according to the WBCSD.

Clay Nesler, vice president of Global Energy and Sustainability for Johnson

Controls Building Efficiency, was the only private-sector business leader to address the U.N. during a recent discussion on the "Green Economy: A Pathway to Sustainable Development."

According to Nesler, several barriers continue to block investment in energy efficiency, including access to capital, insufficient returns on investment, uncertainty in savings and availability of technical expertise. In addition, says Nesler, government policy, at national and local levels, is critical to overcoming barriers. The Johnson Controls Institute for Building Efficiency is seeking to overcome some of those barriers by working with six partners to create an energy-efficiency tool kit that will help developing countries develop strategies, define goals and create action plans. As a result, Johnson Controls is helping countries and businesses improve local economies and support sustainability.

#### THE WATER ISSUE

**W**ith population growth and economic development accelerating, fresh water is becoming scarcer. Nearly 20 percent of the world's population lack safe drinking water, and 40 percent are without adequate sanitation. In addition, numerous businesses depend on water to operate.

Eskom's standard operating procedures, supported by the South African government's expectations of environmental returns for the economy as a whole, include standards for water usage, discharges and emissions of sulfur dioxide, formulated with environmental performance firmly in mind, says Dr. Lennon.

Ever ardent, Stigson admits attitudes are hard to change, but they must, because "businesses cannot succeed in a society that fails. If you do what makes sense now, you'll have a set of options to consider implementing going forward," he says. "And the surer you become that certain things will happen, the more you can do." In the meantime, given the overall political climate, things aren't happening with enough urgency to satisfy Stigson. "Unfortunately, we may have to wait for crises significant enough to force people to act." ●

DOUG KANTER/BLOOMBERG

Every discovery begins with a question: How to ensure the future of the planet and future generations?

Sustainability

We are pioneers. When pioneers look at the world, they see what can be. Sometimes a better tomorrow is right in front of us. And all we need to do in order to see it is look harder. Ask the right questions. And the hard ones too. All while incessantly searching for better answers. That's why at Vale we are more than just a leading global mining company. We help conserve thousands of square miles of green areas around the globe. We invest in the development of renewable energy sources, we reutilize 76% of the water used in our operations and we promote the development of people in the regions where we are present. Because in order to build a better tomorrow, we need to allow our imagination to see the world, not for what it is, but for what it can be.

**There is no future without mining.  
And there can be no mining without caring about the future.**



VALE