

A Sustainable Future

Are we
prepared for
the population
boom that
will more
than double
the demand
for resources?



World Business Council for
Sustainable Development



By 2050 the population will reach 9 billion, requiring more than double the Earth's resources.

Fast-forward to the future and you'll find that the demographic trends that will affect our planet are daunting. Between now and the middle of the century the global population will increase from 6.9 billion to 9 billion, requiring 2.3 planets' worth of resources. It's a troubling scenario when you think of the strain this humanity boom will place on the ecosystem.

This isn't a worst-case scenario—it's a solid mathematical projection. In 40 years there will be 30% more people living across the globe, according to the United Nations Population Division. Most of the growth will be in developing countries,

where economies will expand, and with them the demand for everything we need to live: energy, water, food, and health care. The world's energy requirements alone are expected to double by 2050. The problem, of course, is that few resources are boundless and without a sustainable plan the situation is ominous.

At the same time, more people means more CO₂ emitted into the atmosphere—and more worries about global warming and its consequences, like severe weather events and the loss of many of the planet's species. When the earth's population grew from 1.6 billion to 6.1 billion during the last century, CO₂ emissions grew 12-fold. Now imagine a world with 9 billion people. Dwindling

water supplies will be an increasing worry, too, particularly in the developing world. India alone is expected to meet barely half its demand by 2030.

When the World Business Council for Sustainable Development (WBCSD)—a global coalition of 200 companies working together to build a sustainable future—looked at the population figures and calculated what would be necessary to sustain the world of 2050, it found that we'd need every last resource on Earth, and another Earth, and a third more. "That's obviously a huge issue," says Dr. Mohammad Zaidi, executive vice president and chief technical officer at Alcoa Inc., a WBCSD member company.

In an innovative, 18-month-long project called Vision 2050, the WBCSD gathered 29 of its member companies—forward-thinkers on sustainability co-chaired by Alcoa, Boeing, Price-WaterhouseCoopers, Storebrand, and Syngenta International—and tackled three core questions:

- What does a sustainable world look like?
- How can we realize it?
- What are the roles businesses can play to ensure more rapid progress toward this goal?

Given the trend, you might expect Vision 2050 to be a sobering, pessimistic report, but in fact it's optimistic about the world at mid-century. Or, at least, about a world that *could* be 40 years from now. That's because the participants drew two positive conclusions. The first is that a sustainable world by 2050 is possible. It won't be easy, and certain developments *must* happen in the coming years, including lowering the cost of renewable energy and setting a global price on carbon. The report isn't a blueprint for creating a sustainable world, but it lays out a pathway to help us get there, focusing on nine key areas of action, including energy and power, buildings, materials, economy, and human development.

We see the possibilities.

As a process operator at Suncor Energy, Dean Cleaver knows that responsible development is key to Suncor becoming a sustainable energy company. He is one of more than 12,000 Suncor employees committed to making it happen. Seeing the possibilities is how Suncor pioneered the development of Canada's oil sands. It's also how we approach other energy resources from coast to coast and beyond. Now, we're applying the same energy, innovation and commitment to ensure our operations deliver social and economic benefits while minimizing environmental impact. See the possibilities for yourself – take a look at our record.

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But just as important, Vision 2050 sees opportunities in sustainability. The companies that take the challenge, developing the technologies and markets necessary to provide for one planet's worth of people with one planet's worth of resources, will prosper. "We calculated that the new business opportunities for companies that lead with a sustainable development agenda are worth about \$6 trillion," says Zaidi, who served as a co-chair on the Vision 2050 project.

The market for renewable energy sources like solar, wind, and biofuels—all vital if we are going to have a sustainable energy supply while reducing CO₂ emissions—is expected to grow from \$115 billion in 2008 to just over \$325 billion within the next decade, according to Clean Edge, a market-research firm covering green technologies. And meeting the global water demand will require \$200 billion in investments each year up to 2030.

These aren't opportunities many businesses will want to pass up. "Companies see that if you want to be successful in the future, you're going to have to be successful in what we call the green race," says Björn Stigson, president of the WBCSD.

The Value Proposition

New technologies and processes are important components of sustainability, to be sure: Develop renewable energy or reduce your own energy demands and you've strained the world's resources a bit less. But sustainability is broader than that. It also means considering how operations affect people in local communities.

"If you talk and listen and understand what a community values, you can structure your program to benefit that community, or at least avoid doing something that will harm their environment," says Libby Cheney, vice president for safety, environment, and sustainable development at Shell Upstream Americas.

Like many companies, Shell has invested heavily in sustainable development:

\$2 billion on CO₂ and renewable energy technologies during the past five years. But the company, which operates in more than 90 countries, has found that when it comes to sustainability, the town hall is often just as important as the research lab. Dialogues lead to decisions that can have profound impact on the lives and living standards of those dwelling where Shell operates.

Case in point: Shell joined Alaska residents in more than 400 meetings across the North Slope. It listened to concerns and stories of traditional knowledge, and shared plans for safe, responsible exploration. Shell has always worked with the Alaska Eskimo Whaling Commission to ensure that proposed exploration activities do not conflict with seasonal whaling and native subsistence traditions. This includes stopping activities or leaving an area entirely until the hunts conclude.

Similarly, when Shell sought to build a pipeline tunnel for its Corrib gas project in Ireland, the easiest method would have been to start at each end and meet at the middle. But when community dialogues revealed the disruptions that plan would cause, Shell chose to dig from one end to the other. The revised approach will raise the price of the tunnel, but it will satisfy the needs of the community—and that, says Cheney, translates to long-term benefits for everyone.

"Sustainability is not just a box to check for Shell," adds Cheney. "It is something we expect in the decision-making process all the way down to the person in the field turning the valves."

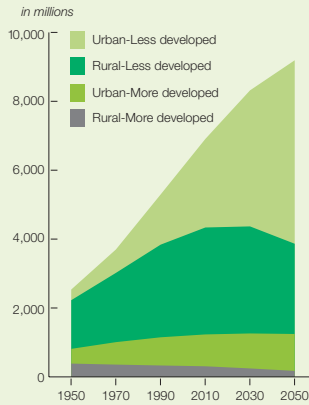
Innovation Partnerships

To help businesses embrace the idea of sustainability as a core value, the WBCSD has been running a program, now in its ninth year, to train a new generation of managers and executives in ways to integrate sustainability into business decisions, and how to recognize opportunities and risks. Over the course of nine months, some two dozen participants—coming this year from

What Lies Ahead

Demographic shifts will drastically change the world as we know it.

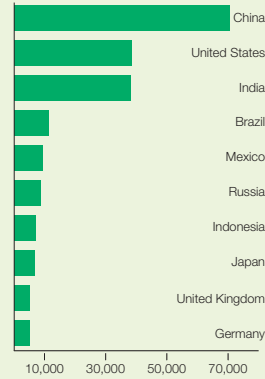
Global Population



Source: UN Population Division, *World Population Prospects: The 2008 Revision*, 2008

Shifting Economic Power

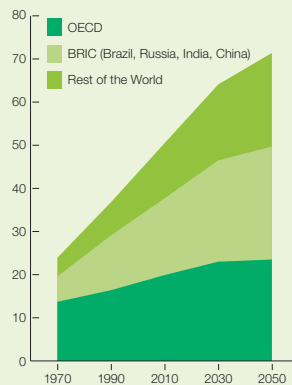
GDP Projection for 2050 (US \$ bn)



Source: Goldman Sachs, *BRICs and Beyond*, 2007

Greenhouse Gas Emissions

GtCO₂eq



Source: OECD, *Environmental Outlook to 2030*, 2008



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companies like Michelin, DuPont, Chevron, and Nokia—work on sustainability projects individually within their own companies, and together in groups. Increasingly, that second approach is becoming essential.

“One of the real challenges we face is: How can businesses collaborate to achieve the pathway to sustainability?” says Michael Sargent, a senior manager at Deloitte & Touche who is leading this year’s program. “So this year’s group is working on projects to develop tools that make it easier for companies to innovate together. One team is focusing on how you can broker collaborative transactions, to develop a tool, perhaps online, where companies can find each other.”

Sustainability collaborations can be particularly complex as they often require companies and organizations in completely different sectors to come together. That’s because solutions aren’t always a matter of technology, but of developing the right infrastructure, economics, and policy, too.

Consider, for example, the Nissan Leaf, an all-electric automobile expected to come to market later this year. By itself, it may be an environmentally friendly technical marvel, able to run 100 miles on a charge. But by itself, the Leaf might not, in fact, get very far. A standard AC outlet will charge it, but slowly. “You’ll get about four or five miles of range for every hour [you’re plugged in],” says Paul Scott, vice president of Plug In America, an electric car advocacy group.

So Nissan partnered with a company called AeroVironment to provide more powerful home chargers, able to “top off” a Leaf in eight hours. Home chargers aren’t cheap—roughly a couple of thousand dollars—and neither are electric cars, so to spur the market, the federal government has gotten involved, too, offering tax credits, as part of the American Recovery and Reinvestment Act of 2009, for those who decide to drive electric. Finally, there are the utility



The end of the gas guzzler: Nissan’s Leaf, an all-electric automobile.

companies, which typically produce excess electricity at off-peak hours and view electric-car owners who do most of their charging overnight as a market for otherwise wasted juice. Utilities like Southern California Edison have become involved, offering separate meters and cheaper rates for plug-in automobiles. Collaborations such as these—partners from different sectors helping to create a more resource-efficient solution—will be essential as we move toward 2050.

Reinventing Policy Initiatives

Of course, we could realize greater, faster success—both in producing resources and in conserving them—with the right policies and incentives. A global agreement on CO₂ reductions may be difficult (as last year’s United Nations conference on climate change all too clearly demonstrated), but building codes requiring improved energy efficiency shouldn’t be. “There’s a lot of energy waste in buildings, and tightened codes are a quick and profitable way to reduce these unnecessary losses,” says Per Sandberg, the project leader for Vision 2050. “Legislation in other areas—creating, for example, incentives for

developing solar and wind energy products—could help jump-start additional sustainability business.”

One question mark is how the global economic crisis will impact policy. “This might, in some countries, have an impact on the speed of change, but irrespective of the financial crisis, the world will need to continue on this path,” says Michael Mack, CEO of the agribusiness Syngenta, and another co-chair of the Vision 2050 project.

But here, too, opportunity may prove the driver. Countries that have been slow to enact policies on renewables, energy efficiency, and carbon emissions may see other countries doing so and reaping tangible benefits, like emerging markets for new technologies. Those results may well spur the laggards into action.

“The green race is on,” says the WBCSD’s Stigson. “And if you choose not to participate, it will impact your economic growth and impact your standard of living. It is inevitable.”

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