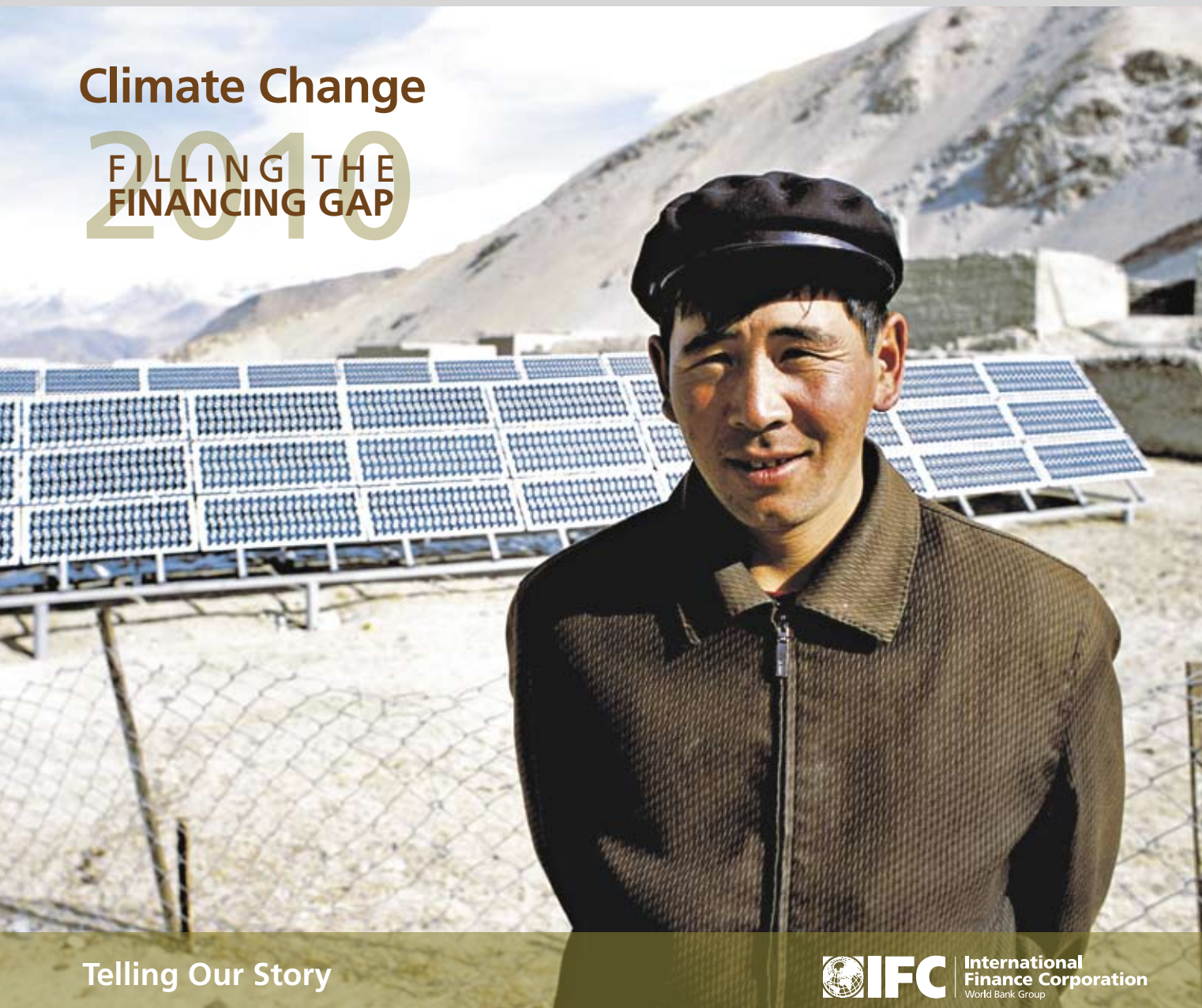


Climate Change

2010
FILLING THE
FINANCING GAP



Telling Our Story



International
Finance Corporation
World Bank Group

Climate Change: *How IFC Helps*

IFC brings a special approach to the climate change challenge, complementing the good work of other organizations focused on policy, research, advocacy, negotiation, loans to governments, and grant-based assistance.

Looking through the lens of development finance, we bring several unique features as the only global multilateral institution focused on the private sector. Working with many partners in more than 100 countries, we invest, advise, and mobilize resources from others, creating opportunity for clients in a broad range of industries in emerging markets. In fiscal 2009 we invested \$14.5 billion, including \$4 billion mobilized through sources such as syndications and structured finance. In fiscal 2009, more than \$1 billion of our direct investments went to finance renewable energy and energy efficiency and in total, we leveraged more than \$6 billion in clean energy-related investments.

Climate change and sustainability are key areas of strategic focus for us. The least-developed countries face long-term obstacles to sustained prosperity, and climate change poses a particularly high risk for their people, many of whom depend on agriculture, forestry, and fisheries for their livelihoods and have limited or unreliable sources of water and energy. Standing between the public and private sectors, we bring market-based solutions to the challenge of creating low-carbon economic growth that meets the needs of the poor.

IFC INVESTMENT SERVICES

- Financial innovation transactions focusing on “firsts”: ground-breaking transactions with significant demonstration effect
- Helping clients gain first-mover advantage
- Providing debt, equity, quasi-equity, risk management, and resource mobilization for climate-positive projects

IFC ADVISORY SERVICES

- Helping clients understand the specific risks and opportunities they face from climate change
- Providing technical expertise to help them succeed in this new environment
- Partnering with donors, foundations, socially responsible corporations, NGOs, and others to assess the potential for market transformation

KNOWLEDGE SHARING

- Capturing the lessons learned from our work
- Working with banks adhering to the Equator Principles, agricultural commodity roundtables, and other groups to spread the resulting learning for wider application
 - Developing accounting methodologies
 - Game-changing applied research in climate investing, adaptation, and financial tools

ASSESSING GLOBAL TRENDS

- Proactively identifying emerging climate change issues by collaborating with the World Bank, engaging with governments, and participating in international treaty negotiations
- Identifying the resulting trends and ways that business in emerging markets can be part of the solution



Message from the Executive Vice President and CEO

The Private Sector and Climate Change

Climate change cannot be managed without a strong engagement of the private sector.

The UN Framework Convention on Climate Change has estimated that more than 80 percent of investments required for climate change mitigation and adaptation will have to be privately financed. Unless energy companies invest in renewables, unless industry and transport companies invest in more efficient technologies, unless agribusiness companies plant sustainably, there will be no meaningful curbing of carbon emissions.

Private initiative is critical as well in the development and dissemination of new climate-friendly technologies, which will be key to managing climate change at a reasonable cost.

The good news is that there is a strong business case for climate investment. This is already well known to a number of companies that have significantly adapted their business strategies to tap into climate opportunities. The other good news is that the money is there. Pension funds alone manage roughly \$20 trillion worth of retirement savings globally. These investors and others are increasingly aware that sustainable business is good business over the long run.

To support this effort in emerging markets, IFC over the last 10 years

has been developing new business models and financing instruments for clean energy, energy efficiency, and cleaner production, setting and improving environmental and social standards for the private sector, leveraging labor and social capital, and preventing the loss of biodiversity. In fiscal 2009 alone, we invested more than \$1 billion in climate-related projects.

As helpful as our work is, imagine what would be possible if our models were more widely adopted. This collection of stories is therefore aimed at firms, financial institutions, other investors, and donor governments that are interested in new business models of mitigation—energy efficiency, renewable energy, and cleaner production—and adaptation—forestry, water, and others—in emerging markets. Just part of the larger agenda, it highlights the opportunities, outlines the risks and their solutions, and provides real-world examples of the important role the private sector can play in climate action.

Reducing poverty and addressing climate change are two of the greatest challenges facing the world today. Fighting climate change has long been a strategic priority for IFC because we understand that its cost falls heaviest on the poorest people. Our ability to respond is constrained only by the amount of capital we have to invest. With more capital, we can make an even greater difference.

Together with public and private actors in both developed and developing countries, we must seize the opportunity at this historic time in the battle against climate change, focusing on filling the financing gap.

A handwritten signature in black ink, appearing to read 'Lars H. Thunell'.

Lars H. Thunell
Executive Vice President and CEO

The Private Sector’s Role

Sustainable Forestry



Planting Trees: A critical piece of climate action

“If the world is serious about fighting climate change and helping poor people,” says Mads Asprem, “then forestry has to be part of the agenda.”

Mads is the managing director of Green Resources AS, a socially responsible Norwegian forest products company that has planted more trees in Africa over the last 10 years than any other, creating 3,200 jobs en route. It plants 10 trees for every one it cuts to sell in the local building materials, firewood, and charcoal markets, and also works to preserve all natural forests within its plantations. This shows how much a climate-friendly business model can do to avoid deforestation—the cause of nearly 20 percent of the world’s greenhouse gas emissions, more than is released from all cars, planes, and trains combined.

In Tanzania, \$18 million in IFC financing is helping Green Resources turn unused grasslands into new forest plantations, build a 15 megawatt power plant run on wood waste recycled from its sawmills, and—perhaps most important—take pressure off natural forests that would otherwise be at risk.

IFC also introduced Green Resources to the new Forest Industries Carbon Assessment Tool we developed with researchers from the industry group NCASI (*see p. 34*). This free, downloadable “carbon calculator” helps build forestry firms’ competitiveness by measuring their energy inefficiencies, carbon emissions, and amount of carbon removed from the atmosphere as a result of all phases of their operations. IFC’s presence is an important show of support as Green Resource seeks other investors and expands in Tanzania, Mozambique, and Uganda.

IFC has 50 years’ experience and a nearly \$1 billion active portfolio in forest products. We have one overriding strategy in the sector—investing in projects that bring important benefits in the fight against climate change.

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GREEN BANKING

A Time for New Thinking

China may be the world's largest source of greenhouse gas emissions. But it has taken a landmark step toward finding a solution.

Its banking and environmental regulators' new Green Credit Policy encourages local banks to lend less to enterprises with high levels of pollution and energy consumption and more to those favoring energy efficiency and emissions reduction.

The policy is part of the government's response to problems of pollution and unsustainable energy use that it saw potentially threatening the country's economic and social development and global reputation. To flesh it out, the government and leading Chinese banks began looking for internationally recognized good practices in environmental policies and implementation standards. Of particular interest to the government were:

- *The Equator Principles*, a set of principles for social and environmental risk management in project finance that nearly 70 financial institutions have adopted worldwide, based on IFC's Performance Standards
- *IFC's Performance Standards*, defining IFC clients' roles and responsibilities for managing projects and their requirements for receiving and retaining our support
- *The World Bank Group's Environmental, Health, and*

Safety Guidelines, technical documents addressing 63 industry sectors

IFC and the Chinese government have collaborated closely on the Green Credit Policy initiative since late 2007, helping Chinese banks implement the policy through training events, sector guidance, and other technical resources.

Tracking data show that during 2008 five of China's largest banks reduced their total credit for high energy consumption and pollution industries while also increasing investments related to energy efficiency and emissions reductions.

Among the smaller banks, one of the most actively engaged was our client Industrial Bank, which in October 2008 became the first Chinese bank to adopt the Equator Principles and was recently recognized by the *Financial Times* with a regional Sustainable Banking Award. Another IFC client, Bank of Beijing, is now actively moving in this same direction. The successful model of China-IFC cooperation is also being expanded within the region as IFC is entering into similar partnerships with Vietnam and Bangladesh and actively facilitating the South-to-South cooperation to build on China's expertise and experience.



Working simultaneously with China's government and banks, IFC is helping make green banking a reality in the world's largest emerging market.

AGRICULTURAL COMMODITIES

The Role of Roundtables

The world must be fed.

The need has never been more urgent. Climate change threatens to affect essential resources just as demand for food is rising through population and income growth.

Food production is suffering from climate change, yet also is one of its causes. The world must find new ways to manage natural resources more sustainably and efficiently. In one of the many ways to find them, IFC supports roundtables on sustainable agriculture.

The roundtables are international multi-stakeholder initiatives that group together producers, processors, traders, and other actors in a commodity's supply chain with banks and civil society groups concerned about the negative impacts of agriculture and aquaculture expansion. They build consensus on what constitutes responsible production and processing, and promote proven better management practices to reach the set targets.

IFC is active in several of these initiatives: the Roundtable on Sustainable Palm Oil; the Roundtable for Responsible Soy; the Better Sugarcane Initiative; the Better Cotton Initiative; the Union for Ethical BioTrade; and the Sustainable Beef Working Group in Brazil.

Take the case of palm oil, the world's most-used vegetable oil. Until recently, it had no comprehensive, agreed-upon sustainability standard that producers

could adopt. In addition to environmental and social risks, this uncertainty raised the cost of loan preparation and monitoring and added potential reputation risk issues, affecting the availability and pricing of the financing IFC and other banks could offer.

But now there is a Roundtable on Sustainable Palm Oil, uniting members such as the Indonesia Palm Oil Producers Association, Unilever, HSBC, WWF, Oxfam, IFC, and others. Thanks to its efforts, on November 11, 2008, the world's first shipments of certified sustainable palm oil left Malaysia for the Netherlands, to be used in European consumer goods. Roundtable members continue to contribute to finding and promoting better practices.

This is a plus for palm oil-producing countries like Indonesia, where the crop has been a major employer, but also a major driver of deforestation contributing to climate change. Tree-cutting, peatland degradation, and forest fires have made Indonesia one of the world's top three emitters of greenhouse gases. There are no overnight solutions, but a more responsible palm oil industry is a big step in the right direction.



To support the world's shift to a more sustainable model of agricultural production, IFC participates in a series of commodity roundtables. The wide-ranging dialogue they conduct helps set new industry standards, making large-scale farming in the Brazilian sugar industry (above) and elsewhere around the world more climate-friendly.

CLEANER PRODUCTION

Reducing Emissions, Cutting Costs

It is a major challenge: meeting the world's growing demand for energy while simultaneously reducing greenhouse gas emissions.

New conservation measures to take out some of the wastage from big industrial users' systems will be a key part of the solution.

To get there, demand for increased industrial energy efficiency must grow in large emerging markets like India. But few Indian manufacturers realize they have many small production inefficiencies that create large hidden utility costs.

Our investment and advisory services have helped one of India's best known firms, JK Paper Ltd., realize major cost savings from energy and water efficiency improvements at its plants in Orissa and Gujarat. These simple, low-cost fixes by a respected player are



JK Paper: Supplying packaging for many of the best-known consumer products in India

setting an important example for others to follow in one of the world's rising economic powers.

We began by supporting a thorough Cleaner Production assessment for JK, identifying 40, mostly saving opportunities available through relatively easy, low-cost upgrades: replacing leaky pipes, changing out old, single-speed motors with new variable speed ones, and others. Then we provided a \$3 million loan to finance the needed upgrades. When implemented, these measures are expected to lead to a 17 percent reduction in water consumption, a 10 percent improvement in energy efficiency, and an annual savings of more than \$1 million. The amount saved equals the average annual water use of 75,000 Indian households, and the average annual energy use of 9,100 more.

We started the Cleaner Production work with a \$20 million global lending pool that helped JK and six other clients cut costs through climate-friendly environmental measures. Now the initiative is being expanded to \$125 million to enable us to help more clients. It builds an even stronger case that these upgrades are good for business as well as the environment.



Large-scale manufacturers like India's JK Paper work with IFC to save energy and cut costs.

THE ENERGY EFFICIENCY MARKET

A Growth Business for Banks

Lito Hizon owns and manages Corfarm, a 15,000-head pig farm north of Manila. To minimize power costs from the grid, he decided to construct a methane capture and electricity production facility.

Needing financing, he applied for and got a \$1 million loan from the Bank of the Philippine Islands (BPI) under a Sustainable Energy Finance window that the Manila lender had opened in January 2008 with IFC assistance.

BPI President Aurelio Montinola III is glad his bank, one of the country's largest, can help farmers like Hizon. Pioneering in sustainable energy finance affirms BPI's commitment to environmental protection.

"IFC helped our bank's staff to better understand the energy efficiency and renewable energy segments, and we are in advanced negotiation with IFC on a risk-

sharing agreement that will help us build a robust and sustainable portfolio," Montinola said.

The program is based on the idea that financing sustainable energy projects is both good business and useful in fighting climate change. Supported by the Global Environment Facility, it works with banks, technology and equipment vendors, end-users, regulatory agencies, and market-awareness partners to promote sustainable energy.

This is the latest in a series of IFC programs that help local banks provide clients with loans for the purchase of energy-saving equipment that comes with advice from technical experts. In China, our three partner banks have now extended \$556 million in loans of this kind. In Russia we have helped five partner banks enter this market, providing \$150 million in energy efficiency financing.

All told, IFC had energy efficiency programs in 12 countries as of June 2009 that were avoiding 6.5 million tons of carbon dioxide emissions annually, the equivalent of closing down a 1,000 megawatt coal plant.



Pig farmer Lito Hizon (*right*) is making environmental upgrades with IFC-supported financing from BPI.



Bank of the Philippine Islands (BPI): One of the country's leading banks, and IFC's partner in sustainable energy financing.

RENEWABLE ENERGY

IFC's Role

Chile is entering a new era, creating opportunity for climate-friendly investments.

It has just opened its largest wind power plant, the \$140 million Totoral project 185 miles north of Santiago.

Sponsored by SN Power, a Norwegian-based global renewable energy developer, Totoral's 23 turbines generate 46 megawatts of power. It was the first project completed under Chile's 2008 law that requires electrical utilities to invest in alternative power sources. And it is quite possibly the first "merchant" wind plant anywhere in the world, selling power directly into the national grid's spot market without purchase contracts or price guarantees.

Landmark projects like this are central to IFC's approach to wind, solar, geothermal, hydro, biomass, and other



Philippines: The IFC-supported CEPALCO solar plant on the island of Mindanao

renewable energy projects. Over the past three years, we have invested more than \$1 billion in renewables, always looking for test-case projects that set a precedent for others. In Totoral, IFC made a \$30.75 million, 18-year loan for its own account and mobilized the same amount for the sponsors from Norway's largest financial services group, DnB Nor. Our vote of confidence, based on knowledge of financing wind projects and similar regulatory structures worldwide, did much to attract this additional private capital despite the price uncertainty in the project's revenue stream.

Such breakthroughs are needed to change the global power mix and usher in a low-carbon future. Sometimes donor subsidies can help start the process. In 2004, private Philippine utility CEPALCO opened what at the time was the developing world's largest grid-connected solar photovoltaic power plant, one with 6,500 panels on the island of Mindanao. It was done with a \$4 million Global Environment Facility grant that IFC arranged and structured. We have since begun scaling up our solar investments, part of our drive to move the power sector forward with greater use of clean, affordable renewable energy.



The Totoral wind power plant is Chile's largest to date—part of IFC's commitment to financing precedent-setting renewable energy transactions across the developing world.

LIGHTING AFRICA

A Low-Carbon Initiative

Imagine 2.5 million people in Africa disposing of kerosene lamps, flashlights, and other lighting products in less than three years.

Then imagine that many people buying better ones to replace them—becoming a large market with proven demand, willing to pay a fair price. It is a potentially huge one, having up to 250 million consumers using climate-friendly lighting products in 2030. This is the market that the IFC/World Bank initiative Lighting Africa is helping create.

Africans currently spend up to \$10 billion a year on inadequate lighting. Finding better suited, more climate-friendly alternatives will create business opportunities for many players in the off-grid market: local and international distributors, established and fledgling private sector companies, local assemblers, international manufacturers, and others

Lighting Africa is helping build the industry in several ways: hosting a biannual international off-grid lighting business conference, facilitating business linkages, and organizing an online forum for exchanges and interactions. In the process, it reduces emissions by displacing the kerosene that is burned in wick lamps.

The donor-funded initiative's efforts helped three new manufacturers enter Kenya and Ghana in 2009. Five new lighting products have also been designed based on its market research. Lighting Africa is also piloting a

bulk purchases program in cooperation with Unilever Tea Company Kenya that will be repeated with other large companies. Meanwhile, it is actively mobilizing financing from other sources, and has awarded \$3.2 million in grants to 16 innovative lighting businesses or partnerships.

The overall goal: helping the private sector to supply safe, affordable, high-quality lighting to 2.5 million people by 2012 in a market-based way. This can be achieved by facilitating sales of 500,000 off-grid lighting products through commercial channels, while also establishing a sustainable commercial platform aiming to supply 250 million people with similar devices by 2030. This will open a new path for social, health, and economic development, with many households and small businesses seeing significant cost savings and productivity gains.

Lighting Africa: Building a market for high-efficiency lighting products in the world's poorest continent



Affordable, high-efficiency lamps using light emitting diode (LED) technology give African children a better way to do schoolwork at night. Such advances lie at the heart of Lighting Africa, an IFC/World Bank initiative.

WATER SECURITY

Charting the Future

The risks of food security are well known. Yet those of water security could grow even more severe over time.

But they don't have to. Solutions exist.



This is the conclusion of *Charting Our Water Future*, a new report published by the 2030 Water Resources Group, a consortium led by IFC, the World Bank, McKinsey and Co., and other thought leaders from the business, finance, government, and nonprofit worlds.

The report gives countries a new, more

holistic way to look at this complex sector, weighing the diverse needs of cities, rural communities, agriculture, industry, and others.

The key finding: by revisiting the way they allocate resources, governments can find lasting new ways to meet competing demands for scarce water.

Today authorities often opt to increase the supply of water, frequently through costly, energy-intensive

technical measures such as desalination. But they are hampered by the sector's lack of transparency—relying on insufficient data, opaque management, and stakeholders that are inadequately linked. This blocks creation of achievable, fact-based water policies, hindering investors from making sound decisions. New thinking is needed.

To find a new approach, the report's authors assessed the water needs of China, India, Brazil, and South Africa. They applied McKinsey's highly regarded earlier work that produced a "carbon abatement curve," a new microeconomic tool that helps policymakers choose the best ways to cut greenhouse gas emissions.

The result is a call for an integrated, workable solution in water—one requiring a concerted effort from all who see it as a foundation of development. Governments and civil society will be critical players, as will private agriculture, industry, financial institutions, and technology providers.

The report is a starting point and will be widely discussed in the coming months. Its goal: helping the world achieve global water security in 20 years.



Looming issues of water scarcity require a new, more integrated approach than has been used until now. The private sector has an essential role to play.

WATER FOOTPRINTS

Measuring and Managing

Climate change will make water increasingly scarce.

It will force a rethink of today's wasteful ways, especially in the industrial and agricultural sectors that together account for more than 90 percent of all water use today.

By 2025, studies show, half the world's population will not have enough water to meet all its needs. As climate-related droughts increase, farmers will have to adapt to harsh new realities if they are to feed a world whose population will reach 9 billion by 2050.

But you cannot manage what you do not measure. And until now there has been no way to measure the total water input in the production of food and beverages—nothing like the carbon footprint model that helps businesses and consumers track greenhouse gas emissions. Early action will be critical, helping businesses both manage risks and protect the planet.

This is why IFC is part of the Water Footprint Network, a global initiative linking the likes of Coca-Cola, Nestlé, and Unilever with academic experts, environmental groups WWF and the Nature Conservancy, and others. The group's new open source methodology helps members assess their overall water use with precision, and then revise strategies accordingly.

The results can be shocking. Global brewing giant SABMiller found it used nearly four times as much water to produce beer in South Africa as it did in the Czech Republic. Why? Because South Africa's Castle Lager imports its barley from countries with inefficient irrigation systems, while the Czech beer Pilsner Urquell uses local barley grown with rainwater.

So far the network has mainly involved Western multinationals. But with more than 1,500 clients, IFC can do much to spread this cutting-edge thinking in emerging markets. We're starting with India's Jain Irrigation, a major producer of water-saving irrigation systems and dried fruits and vegetables. Jain is doing much to capitalize on its country's vast, largely untapped agricultural potential, and with additional support can be a model for sustainable water use in its industry globally.



Water-saving sprinkler systems from IFC client Jain Irrigation are a key to Ravindra Mahajan's successful onion farm in India. Climate change is increasing the need for sounder water use in agriculture, making it important for IFC to connect companies like Jain with global initiatives such as the Water Footprint Network.

CHEMICALS

Saving Energy and Jobs

Even in this year's steep economic downturn, a Russian chemical industry leader is showing that sustainability and good business results go hand-in-hand. It is located on the Volga River, 860 kilometers from Moscow. It is called KuibyshevAzot OJSC, or KuAz.

Its home region of Samara has suffered a 30 percent contraction during the global financial crisis, far worse than the national average. Nonetheless KuAz has been able to maintain its entire workforce, remaining an anchor of a local community that depends heavily on its 5,500 jobs. Commitment to energy efficiency and an environmentally friendly heavy industry business model is a key to its success.

The Russian chemicals industry is one of the country's most polluting and inefficient. It is responsible for more than 20 million tons of direct carbon emissions annually



KuAz: A chemical industry leader in Russia, committed to sustainability

and about 15 million tons of toxic substances thrown into the environment. But KuAz is green. A long-term IFC client, it is one of Russia's top chemical and fertilizer producers. It sought our support on ways to use energy efficiency and cleaner production as routes to reduced costs, increased competitiveness, and better environmental performance.

IFC used its advisory services expertise to identify profitable and environmentally beneficial opportunities for investment, and later extended a \$20 million loan to finance KuAz's environmental upgrade program. Once completed, these measures will save the company about \$9 million in energy costs a year. The resulting reduction in carbon emissions will be equal to taking 23,000 cars off the road.

The project builds on momentum dating to 2008, when World Bank Group President Robert Zoellick presented a joint World Bank-IFC policy paper on energy efficiency in Russia to President Dmitry Medvedev and Prime Minister Vladimir Putin.

KuAz's success is just one example of how IFC helps chemical industry clients find economic opportunities in energy efficiency investments.



Ivan Sukhanov has worked at KuAz for more than half his life, working his way up to become chief master of one of its workshops. He is proud that his son now works there as well.

GREEN HOUSING

A 21st Century Solution

Fuel efficiency–based marketing works in the auto industry. Why not in housing?

Unknown 10 years ago, hybrid vehicles like the Toyota Prius are now a mainstay in many countries, sold for their ability to achieve greater fuel economy and lower emissions.

“If you tell people a car is going to get you 50 miles a gallon rather than 15, they are going to seriously consider buying that car,” says Domingo Valdes of Mexican home-builder VINTE. “Why should housing be any different?”

Just as cars track gasoline usage, he argues, homes should be able to monitor electricity, gas, and water consumption for people at all income levels, letting them save money and protect the environment by cutting back when necessary. Monitoring devices are sometimes offered to



VINTE Homes: Equipped with rooftop solar panels that heat water, and natural gas cylinders that can be easily monitored and replaced

the wealthy today. But VINTE is one of the first to make them available in middle- and low-income housing.

IFC has invested \$22.5 million in this rising developer that has sold 6,000 homes in Mexico in the last six years. Its homes start at \$22,000, making them attractive to working young adults who grew up in Mexico City's teeming informal settlements, where clean water, paved roads, and good schools are often just a dream. For them, VINTE's attractive, well-planned developments are a major step up—and affordable through Mexico's Green Mortgage program that provides incentives for purchasing energy-efficient homes. The program recently won the International Star of Energy Efficiency Award from the Alliance to Save Energy, a business-led global NGO.

With 20 million people in greater Mexico City alone, VINTE's market is large. Its buyers are schoolteachers and factory workers, doctors and secretaries, and other salaried workers needing affordable housing and utility bills. Its simple, wall-mounted meters let them do just that—setting a good model that could have a major climate impact if applied more widely.



A special wall meter lets Sandra de Sanabria and her son Manuel, 2, track energy and water use at their environmentally friendly home outside Mexico City built by IFC client VINTE. The homes' design cuts residents' gas bills by 75 percent, cleaning the air and keeping more money in low-income families' pockets.

TOURISM

Building in Sustainability

It may not seem like it, but the \$5 trillion tourism industry is a frontline for climate action.

The world's second largest employer after agriculture, it is the main foreign exchange earner in many developing countries. Climate-proofing this critical industry is a priority for IFC.

There is no simple, off-the-shelf approach. But our combined global/local knowledge and flexible financing can give clients the solutions they need.

In a desert country like Jordan, the issues range from conserving precious water to maximizing the potential of the blazing sun. We are helping a long-time client, Zara Investment Holdings, build its brand by addressing these very issues.

Owner of many of Jordan's top hotels, Zara knew it had to change. Rising energy and water costs and fuel price volatilities were eating into profits, making forecasting difficult. But it wasn't sure how to proceed. It needed a trusted adviser.

"We had been looking at ways to implement environmentally friendly measures that would improve our efficiencies, but there was no easy option," explains Lina Anaab, Zara's General Manager. "It was not clear that the technology was there, especially at the scale we needed."

IFC recommended an energy audit outlining key steps that could be taken without disruption, then lent Zara \$1.8 million to help finance new solar heating systems, upgraded water systems, and a switch from diesel fuel to clean-burning liquefied petroleum gas. These and other measures are expected to cut Zara's power and water costs by 11 percent—nearly \$1 million in annual savings—while reducing annual carbon emissions.

With the number of hotel rooms in Jordan due to more than double in the next decade, Zara's green tourism model will likely become the national benchmark—a goal that is consistent with IFC's global strategy in climate change.

Tourism: One of the world's largest industries



Zara Investment Holdings' new beach resort at Tala Bay in Aqaba, Jordan has created 500 jobs. By 2011 it will generate \$11 million in local procurement, mainly from small businesses. After financing its opening in 2008, IFC followed with additional support for cost-saving environmental measures.

CARBON DELIVERY GUARANTEES

Closing the Deal

The carbon finance market now provides \$6.5 billion a year for emission reductions, directly to projects in developing countries.

IFC is well-positioned to help clients maximize benefits from this unique source of funds.

Through our Carbon Delivery Guarantee, IFC facilitates delivery of carbon credits from projects in emerging markets qualifying under the Kyoto Protocol's Clean Development Mechanism to buyers in developed countries, allowing the latter to offset their own greenhouse gas emissions. This provides companies selling carbon credits access to a wider range of potential buyers as well as a transparent and fair transaction. IFC acts as an intermediary, selling companies' credits in the market and passing an attractive price back to the projects. For buyers in developed countries, IFC eliminates the financial risk of not receiving the promised carbon credits.

A leading South African fertilizer producer, Omnia Fertilizers, agreed to sell up to 900,000 carbon credits to IFC in a Carbon Delivery Guarantee transaction. The deal supports Omnia's installation of a nitrous oxide abatement facility that prevents greenhouse gas emissions. Through it, IFC is helping build the flow of carbon credits to Africa, which has been only a small piece of the global total until now. Omnia has also committed to contributing 5 percent of the revenue

generated by the carbon credits to reducing poverty in the surrounding community.

In India, IFC signed a Carbon Delivery Guarantee for 850,000 carbon credits from Rain CII Carbon. Repeated IFC financing since 1996 has helped Rain grow from a start-up company into a global leader in its industry, producing materials for aluminum smelters. It now has a new 50 megawatt waste heat recovery power plant, reducing dependence on fossil fuels and generating carbon credits.

In both the Omnia and Rain transactions, IFC helped its clients obtain favorable prices for their carbon credits and sell them to buyers in the developed world, thus realizing important new revenues to support their environmental upgrade efforts.

Carbon finance is an integral part of IFC's climate change strategy. Several other Carbon Delivery Guarantee and other structured transactions are being pursued throughout the developing world.



Industrial clients in emerging markets like India's Rain CII Carbon (above) gain improved access to the global carbon finance market through IFC's Carbon Delivery Guarantee product.

CLEANTECH INVESTING

Early-Stage Endorsements

Matching venture capital to good investment prospects in emerging markets is risky. But it is an important part of the climate agenda.

Its early investment can mean everything to promising entrepreneurs, allowing them to develop innovative, earth-friendly products before major revenues kick in.

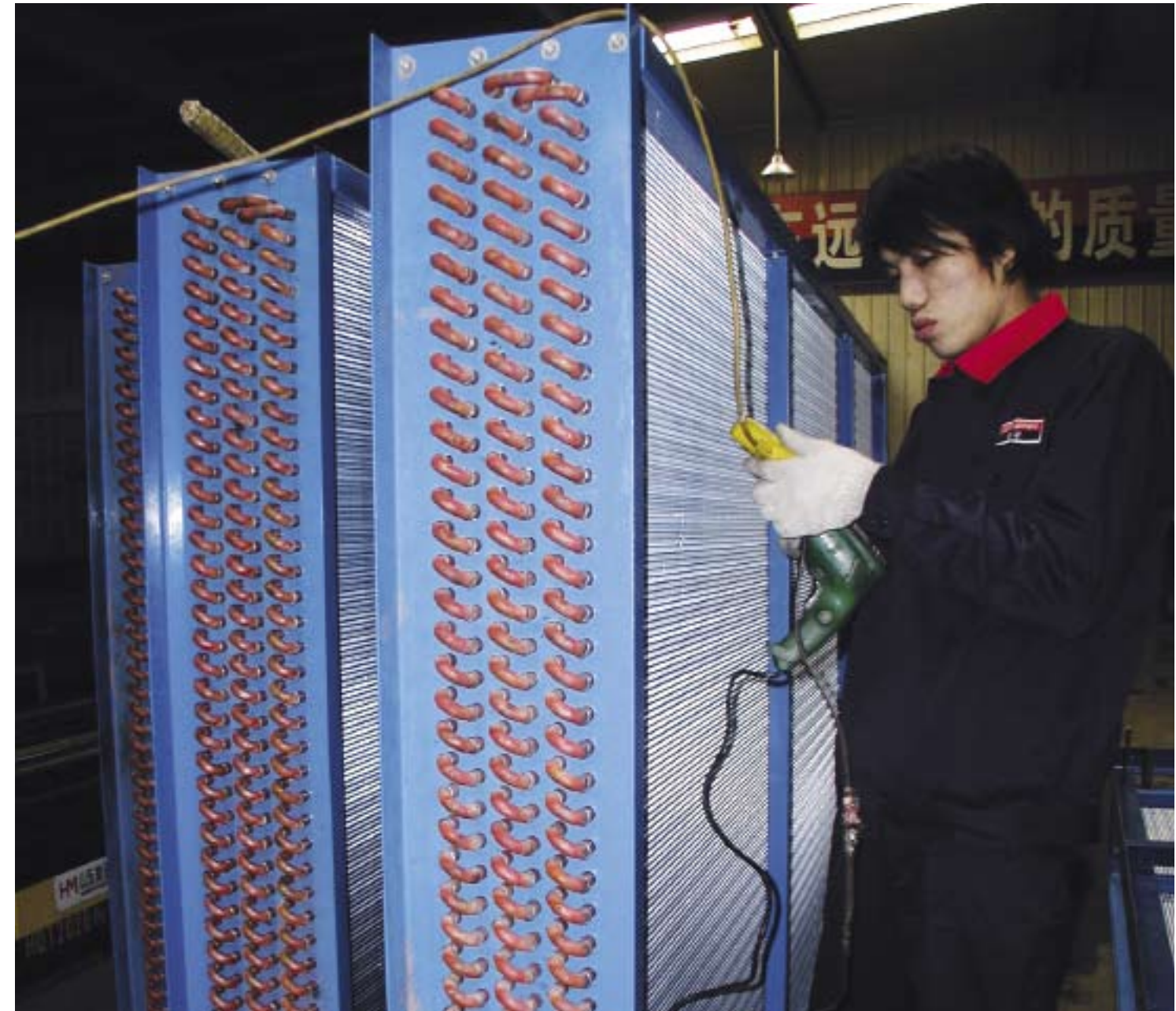
India's Krishna Kumar came to the U.S. on a Cornell University scholarship in the 1980s to study engineering, then took part in many advanced technology R&D programs while working in the aircraft engine field. Later he returned to Bangalore with a good idea: making inexpensive, small-scale turbines so local industries could generate power from heat they would otherwise waste, thus cutting costs and reducing emissions. He started a new firm called TurboTech Precision Engineering Pvt. Ltd., one with much potential but few backers.

IFC stepped in with a \$600,000 equity stake in 2006, becoming TurboTech's first international institutional investor and helping it find the same amount from others. Rapid growth followed, and today TurboTech's turbines are sold across 12 states in India and eight other Asian countries. With multiple installations at the same site, typical users of a 400 kilowatt TurboTech turbine can lower their energy bills by \$250,000 a year.

"IFC has been a game-changer," Kumar says.

We have made more than 60 venture capital investments since 2000, mostly in the IT industry. The clean technology (cleantech) deals were first done on a pilot basis but are now in the mainstream of our venture capital work. We look for growth-stage companies whose technological or business process innovations provide long-term competitive advantage in emerging markets. We will invest \$3 million to \$30 million directly in cleantech firms with significant exposure to developing countries, preferring those with local shareholders.

The steel industry is the biggest user of energy in China. To help it do more with less, we have just committed an \$8 million equity/quasi-equity investment in Shouren Energy High-Tech Co., a local firm whose dehumidifying systems help blast furnaces reduce coal usage and carbon emissions. Founded by graduates of China's leading technology university, in time it too may become a game-changer.



Shouren Energy High-Tech Co.'s dehumidifying technology helps Chinese steel producers reduce their energy use.



Next Steps

Tools for Green Investors

INSTITUTIONAL INVESTORS

Mainstreaming Climate-Friendly Investments

The financial world does not negotiate the big international treaties on climate change. But its capital is critical to meeting their goals.

IFC can influence the markets. But only banks, institutional investors, and other financial institutions have the power to change them. The vast sums they control can be put to good use in the fight against climate change once a good business case is stated—something IFC works on several levels to create.

In March 2009 we hosted the annual summit of the P8 Group, a set of leading public pension funds from several countries that collectively manages more than \$3 trillion and has a keen focus on climate change and sustainability. We have since been helping it explore sustainable investment opportunities in emerging markets.

But before making investment decisions, investors need to see rigorous independent benchmarking of climate-friendly opportunities. In the absence of regulator and stakeholder demand, listed companies in emerging markets have so far had little reason to disclose or increase the carbon efficiency of their business activities.

To help them get over this hurdle, IFC, with support from the UK government and the Global Environment Facility, is partnering with one of the world's foremost sources of indices and risk evaluation, Standard & Poor's, on a new emerging market carbon index. In time, such tools can prompt new market-based incentives such as lower costs of capital and enhanced reputation that can play an important role in turning markets around.

The new S&P/IFC Investable Carbon Efficient Index attempts to address today's incentive gap by mobilizing



significant portfolio investment flows to favor allocations to the most carbon-efficient companies in emerging markets, thereby encouraging carbon efficiency competition within sectors.

Targeting the passive equity investor, this new tool will closely track the underlying S&P/IFC Investable Index and thus will offer market returns with little additional risk. Carbon data for the index are provided by Trucost, a specialist in calculating companies' environmental impacts based on readily available business information. To increase awareness of the index, IFC is also partnering with the London-based Carbon Disclosure Project to request information on emissions from more than 800 companies in emerging markets in 2010, and to point to the carbon index as an example of how investors are integrating this information in their decisions.

BANKS

Rethinking the Role

Studies show that 97 percent of the growth in greenhouse gas emissions in the next 20 years will come from developing countries. Their industrial output will grow, taking an ever-rising share of the world economy, and giving local banks a critical role in helping them reach a low-carbon future.

By factoring sustainability issues into their lending decisions, these banks can both develop profitable lines of business and help build a cleaner, greener future.

IFC helps by providing an Internet-based tool to help financial institutions manage social and environmental risks and identify sustainable business opportunities in areas such as renewable energy and energy efficiency projects.

The e-learning program introduces participants to the basics of identifying and managing social and environmental issues in projects they finance—ranging from the risks of chemical leaks to the exploitation of workers—ending with a tutorial on identifying sustainable business opportunities. This three-hour Sustainability Training and E-Learning Program (STEP) uses real-world examples to show that sustainable finance is both good for business and good for the environment.

Launched in July 2009, STEP has so far enrolled close to 100 participants from 50 institutions in 32 countries. With a click of the mouse, participants can walk through a leather tannery factory, checking for risks ranging from possible soil and groundwater contamination and others.



They review a draft due diligence report and consider the appraisal and supervision procedures that are appropriate to their own institution when financing projects with potential social and environmental risks. Participants also learn how minimizing environmental and social risks and supporting sustainable projects make financial sense.

Whether an institution already is doing sustainable financing or just beginning to think about it, the course makes it easy to train and update staff.

CARBON FOOTPRINTS

Forest Products

As a global leader in sustainable lending practices, IFC assesses most of its projects for their greenhouse gas and carbon impacts. But evaluation of such impacts for projects in the forest and manufacturing industries was proving time-consuming and difficult, and the results were not always reliable.

In late 2008 IFC began working to develop a model to help IFC's forest products sector clients to assess their greenhouse gas impacts and to identify potential opportunities for improvements. The National Council for Air and Stream Improvement (NCASI), an independent, non-profit research institute that focuses on environmental topics of interest to the forest products industry, was brought on board to develop the model.

The ensuing partnership between IFC and NCASI was grounded in the shared values and common vision of the two organizations. IFC chose to work with NCASI because of its reputation, its technical and research expertise, its understanding of the unique challenges associated with the forest products industry, and the work it has already done in this area.

This leading-edge, user-friendly tool, called FICAT (Forest Industries Carbon Assessment Tool), enables forest and manufacturing companies to get a better handle on their business carbon footprints with a viable measurement model that takes into account the entire forest products life cycle. Using this information as a base, a way forward will emerge on how and where



to implement improvements that will make the biggest difference in reducing carbon footprints and in achieving additional bottom-line benefits. The tool will also add to the growing knowledge base about how and where greenhouse gases are produced.

While the tool is working well, IFC will continue investing in periodically upgrading and improving it as we gather more experience and understanding based on client and other industry stakeholder feedback.

PORTFOLIO MEASUREMENT

IFC's Greenhouse Gas Footprint

IFC has been measuring its own investment portfolio's greenhouse gas footprint since February 2009. All new IFC real sector projects are also now required to report greenhouse gas emissions prior to approval.

To do so, IFC developed the Carbon Emissions Estimator Tool for estimating greenhouse gas emissions from investments with immediate applicability to all its departments other than Global Financial Markets. This methodology is consistent with the widely used carbon accounting methodology for private business established by the World Resources Institute and World Business Council for Sustainable Development and builds on the Carbon Tool developed by France's Agence Française de Développement. The tool provides investment departments with a simple way to estimate the gross operational emissions and actual project emissions. For example, a cement production facility could use the tool to estimate greenhouse gas emissions, both direct (on-site fuel combustion, carbon dioxide produced during clinker production, etc.) as well as indirect (electricity purchases). This information is now easily obtained during project appraisal.

The operational emissions data collected has provided IFC teams with valuable project and lending insight. This methodology also provides a building block for other types of analysis such as greenhouse gas impacts from energy efficiency and renewable energy, upstream and downstream emissions impacts, and greenhouse gas shadow cost analysis. While greenhouse gas impact



studies are not required for each project, investment teams are encouraged to undertake this analysis to the extent possible and relevant.

IFC has committed to releasing aggregate portfolio greenhouse gas emissions figures in forthcoming annual reports. In addition to measuring emissions from real sector projects, IFC is also developing greenhouse gas analysis tools to be applied to financial intermediaries and advisory services in an attempt to cover 100 percent of greenhouse gas emissions associated with its portfolio.

CREDITS

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Filling the Financing Gap
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Our vision is

That people should have the opportunity to escape poverty and improve their lives.

Our core corporate values are

- Excellence
- Commitment
- Integrity
- Teamwork

Our purpose is

To create opportunity for people to escape poverty and improve their lives by:

- Promoting open and competitive markets in developing countries
- Supporting companies and other private sector partners where there is a gap
- Helping to generate productive jobs and deliver essential services to the underserved
- Catalyzing and mobilizing other sources of finance for private enterprise development

In order to achieve its purpose, IFC offers development impact solutions through: firm-level interventions (direct investments, advisory services and the Asset Management Company); standard-setting; and business enabling environment work.

