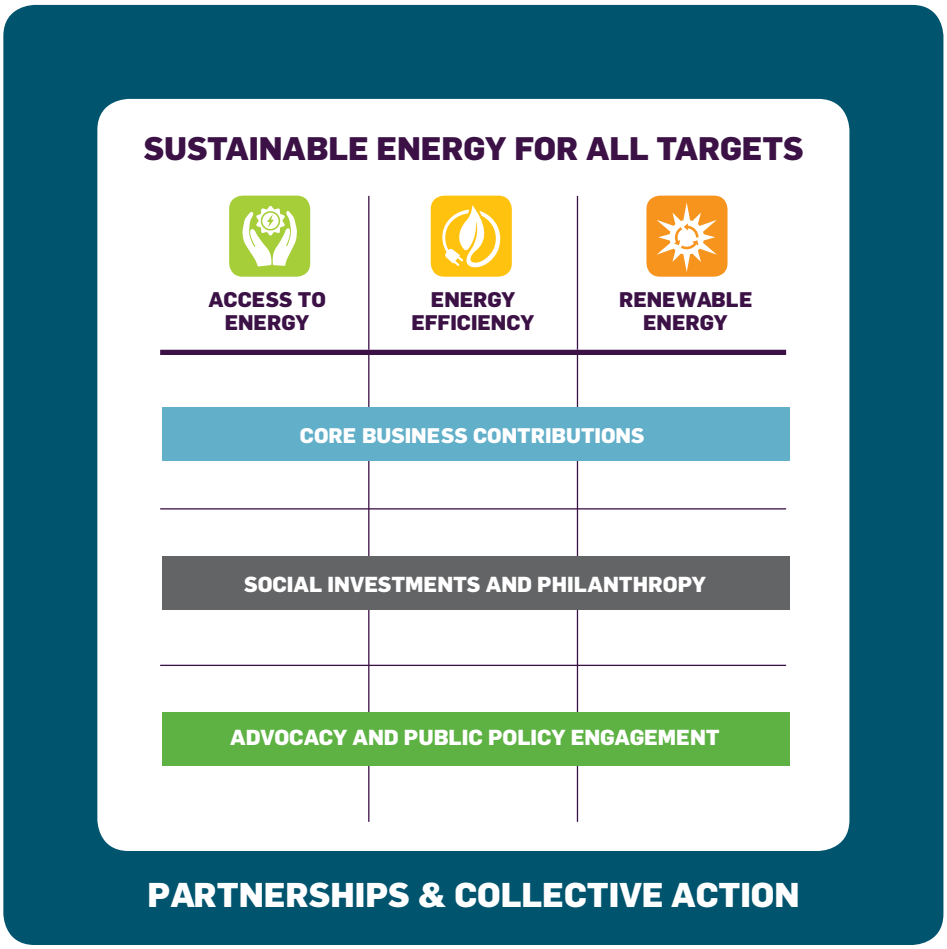
A GLOBAL COMPACT FOR SUSTAINABLE ENERGY

A FRAMEWORK FOR BUSINESS ACTION



United Nations Global Compact

SUSTAINABLE ENERGY FOR ALL

A Global Compact for Sustainable Energy

September 2011

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About the United Nations Global Compact

Launched in 2000, the United Nations Global Compact is a call to companies around the world to align their strategies and operations with ten universal principles in the areas of human rights, labour, environment and anti-corruption, and to take action in support of broader UN goals. Through the development, implementation, and disclosure of responsible corporate policies and practices, business can help ensure that markets advance in ways that benefit economies and societies everywhere. With more than 8,000 signatories in over 135 countries, it is the world's largest corporate responsibility initiative. www.unglobalcompact.org

About Global Compact LEAD

Launched in January 2011, Global Compact LEAD recognizes the critical need for supporting UN Global Compact participants to achieve higher levels of corporate sustainability performance - as outlined in the Global Compact's Blueprint for Corporate Sustainability Leadership. LEAD participants share a commitment to implement the Blueprint and a willingness to lead the Global Compact with strong engagement at the local and global levels. LEAD currently has 56 participants representing all regions of the world.

Disclaimer

This publication is intended strictly for learning purposes. The inclusion of corporate practice examples does not constitute an endorsement of the individual companies by the authors. The material in this publication may be quoted and used provided there is proper attribution.

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1 | INTRODUCTION

United Nations Secretary-General Ban Ki-moon has repeatedly stressed the critical importance of sustainable energy and is mobilizing key constituencies from all sectors of society in a major global initiative intended to shape the fundamental policy and investment decisions needed to put countries on a more sustainable energy pathway over the next two decades. This new global initiative, *Sustainable Energy for All*, will engage governments, the private sector, and civil society partners to achieve three major targets by 2030:

- Achieving universal access to modern energy services;
- Improving energy efficiency;
- Increasing the share of energy generated from renewable resources.

The *Sustainable Energy for All* Initiative[1] will call for all partners to take bold action – through strengthened enabling policy, transformative partnerships and collaboration, enhanced financing, and new innovation. All partners have a role to play. The Initiative will seek significant new commitments and policy changes at the government and national level. Additionally, it will encourage the private sector to drive investment, increase innovation in products and services, and increase operational efficiencies. To do this, it is imperative that executive leadership in the private sector commit to the Initiative and make access to energy, energy efficiency, and renewable energy a strategic priority across their organizations, from the boardroom to the facility level.

In support of the Secretary-General's Initiative, the UN Global Compact has partnered with Accenture to develop a *Framework for Business Action,* a guide for private-sector engagement and action. The Framework will identify and shape the role of business in achieving the 2030 targets. This document describes the first iteration of the Framework; it will be further developed and launched to inspire private-sector action in the lead-up to, and beyond, the 2012 UN Conference on Sustainable Development (Rio+20) in Rio de Janeiro, Brazil. In its final version, the *Framework for Business Action* will detail an engagement structure, collaboration opportunities, and example actions for the private-sector to help achieve the *Sustainable Energy for All* targets. While the Framework is being developed in close collaboration with companies participating in the UN Global Compact LEAD Task Force on *Sustainable Energy for All*, all UN Global Compact participants, and particularly those in Caring for Climate, are invited to play an active role in its further refinement.

The *Framework for Business Action* will be launched at the UN Private Sector Forum on 20 September 2011. The Forum provides an opportunity for the private sector to engage in the further development of the Framework, establish new commitments, and participate in the creation of new partnerships in the lead-up to Rio+20, where *Sustainable Energy for All* will be a priority theme.

1. For more information on the Secretary-General's *Sustainable Energy for All* Initiative, visit www.sustainableenergyforall.org/.

2* THE SUSTAINABLE ENERGY FOR ALL TARGETS

UNIVERSAL ACCESS TO MODERN ENERGY SERVICES

Access to electricity and fuels (for domestic use and transportation) transforms lives. Modern, sustainable energy services afford new opportunities for people to escape the impacts of poverty and promote economic development. Access to energy provides the means to generate income, provide and obtain health care services, improve education, and protect the environment. It can also contribute to creating markets of the future where robust economies previously did not exist. Lack of access hinders development and poses risks to human health, safety, and the global environment. All private sector industries, whether energy suppliers or energy consumers, have a role to play in achieving universal access to modern energy services by 2030. Innovation and new financing mechanisms will be key in achieving this target.

IMPROVE ENERGY EFFICIENCY

Energy efficiency is driven by process improvements, reducing the consumption of resources, and doing more with what we currently have. It is an important issue on a global scale for governments, policy makers, businesses, and individuals. Innovation in energy efficiency can positively contribute to economic development, cost savings, security, and competitiveness, and address rising energy demand. Improving energy efficiency cannot only improve people's lives, but it can also help companies operate more efficiently, help governments run more effectively, and have a positive impact on the environment.

INCREASING THE SHARE OF ENERGY GENERATED FROM RENEWABLE RESOURCES

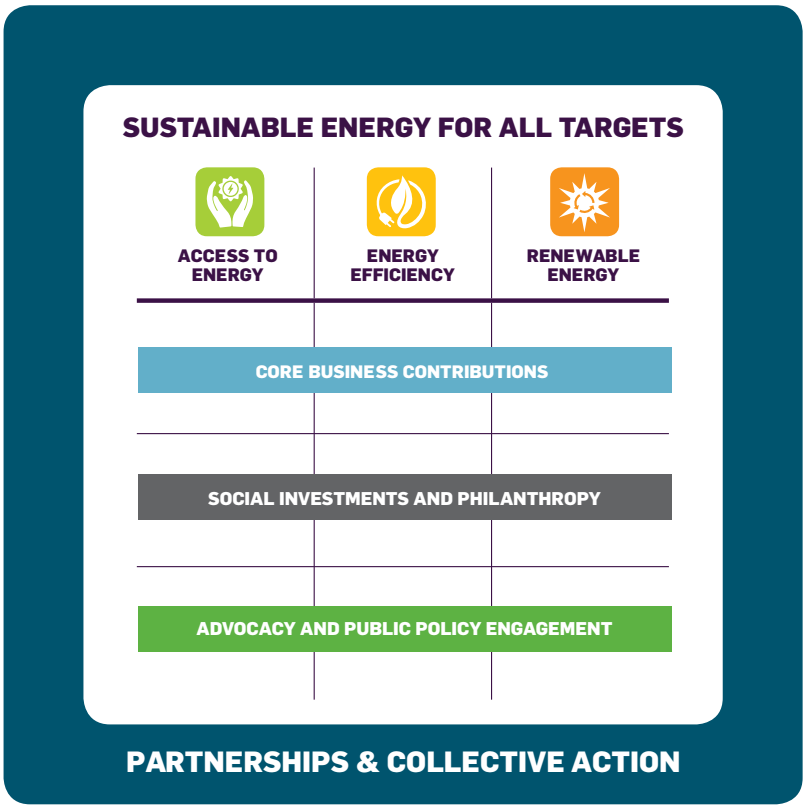
Renewable energy sources can provide energy without negative impacts on the environment; reach remote rural areas, particularly via distributed generation and micro-grids; and generate social and economic development, including new employment opportunities. Renewable energy also provides industries with opportunities to hedge future volatility in traditional energy sources and to self-generate electricity from internal operations' waste streams. If supported by strong enabling policies at the public level, and robust investment from the private sector, renewable energy could indeed supply a much larger share of the world's energy by 2030.

*While the Secretary-General's *Sustainable Energy for All* Initiative focuses on access to energy, energy efficiency and use of renewable energy sources, quantitative targets are subject to further debate.

3 | OBJECTIVES

The main objectives for the *Framework for Business Action* are to 1) motivate, inspire, and guide private-sector engagement in support of *Sustainable Energy for All* and 2) identify where different industries can have the most significant impact. The Framework is based on three modes of engagement: core business; social investments and philanthropy; and advocacy and public policy engagement; that are enabled through partnerships and collective actions. Partnerships, especially across the private sector, and collaboration with governments, the UN and NGOs are critical to the effectiveness of these modes of engagement, and will be a key component of the Framework.

The drivers for the development of a *Framework for Business Action* are clear. Sustainable energy is an issue that affects every business and that every business can affect. The challenge lies in determining not just the role for the private sector overall, but the role individual industries can play based on markets, business models, products and services, and operational focus. By aligning the three modes of engagement with the three *Sustainable Energy for All* targets, the *Framework for Business Action* will provide a structure for the private sector to identify where and how they can best support the three 2030 targets.



4 | MODES OF ENGAGEMENT

The private sector is ideally positioned to make a significant and meaningful contribution to *Sustainable Energy for All* by improving operational efficiencies and bringing new technology, innovation, and products and services to market. Private -sector investment in new and innovative technologies and processes to realize greater energy access, energy efficiency, and renewable energy are especially important and represent some of the highest-impact contributions to the *Sustainable Energy for All* targets. The following describes the three primary ways for business to engage. Detail on partnerships and collective action is also included as a critical enabler of these modes of engagement.

CORE BUSINESS CONTRIBUTIONS

PRODUCTS & SERVICES

Businesses are constantly innovating their core products and services to serve markets that are moving towards greater energy access, renewable energy use, and energy efficiency. Private-sector industries are deploying new technologies in existing markets and participating in the development of new ones. By successfully focusing on the *Sustainable Energy for All* targets, the private sector can help incorporate the initiative's guiding principles into the product and service design process.

While utility and fuels companies can increase the mix of renewable energy in their energy sales, consumer goods companies can increase the energy efficiency of goods sold so consumers become more energy efficient by default. Electronics and technology companies can invest in research and development to increase the efficiency and quality of goods sold, which will in turn increase the efficiency and quality of the electrical grid and telecommunications. These are just a few examples of how companies can, and are currently, using core products and services to further the *Sustainable Energy for All* targets. Innovative thinking will drive the next generation of goods and services.

In general, businesses should always seek to integrate *Sustainable Energy for All* in a way that helps drive innovation in products and services, future vision, and profitable revenue growth. Making a strong business case for incorporating the Initiative's targets will ensure that the private sector can take a long-term perspective and have a significant and lasting impact.

OPERATIONS

Business operations around the globe have tremendous impact on energy and the environment. Businesses use energy (electricity and fuels) as a primary input to the manufacturing and delivery of their products and services. To this end, businesses have an ability to transform their operations to provide greater energy access, increase energy efficiency, and utilize more renewable energy.

Businesses that operate in countries where people are less likely to have their basic energy needs met often have the ability and resources to increase energy access. By establishing new operations in underserved areas or countries, or building from existing operations, businesses can leverage the energy infrastructure they need to create new opportunities and develop energy supplies for the surrounding communities.

All businesses use energy and therefore have an ability to use energy more efficiently and to procure more energy from renewable sources. Energy efficiency in operations and the use of renewable energy represent a win-win for companies and communities – businesses will benefit from long-term cost savings and reduced emissions while communities will benefit from increased economic growth and positive environmental impacts.

SOCIAL INVESTMENTS & PHILANTHROPY

Businesses should seek to identify ways that social investments in *Sustainable Energy for All* targets can align with their core business. This will allow the private sector to establish a strategic link between social investments and products and services/business operations, and will make it more likely that such activities will be sustained and reach a significant scale. Businesses can offer different types of financial support to local communities, philanthropies, and NGOs to support

their missions. Companies can also initiate their own social investment projects by donating their core products and services to communities or by encouraging employees to volunteer their time and expertise.

Energy suppliers (power producers and fuel providers) as well as energy consumers can have a significant impact in this area and can develop social programs focused on sustainable energy that support and augment their core business strategies. There is much to contribute in the areas of technology, finance, development, services, and communications that is critical to supporting *Sustainable Energy for All*.

ADVOCACY & PUBLIC POLICY ENGAGEMENT

Energy is a cross-sector issue that requires collaboration between the private sector and policy makers, regulators, and NGOs. Energy policy varies across countries, but in general, businesses rely on large-scale public investments in energy infrastructure to obtain access to energy and to expand their operations. Governments also influence energy efficiency and renewable energy policies by holding the unique ability to set standards and regulations.

Governments often request input from the private sector when making public policy decisions around energy. Businesses should seek to engage governments (national, regional, or local) on relevant issues that can protect competitiveness, drive opportunities, and help them advance the *Sustainable Energy for All* targets. Often a lack of clarity and direction leads to a lack of progress in advancing increased energy efficiency and renewable energy due to the private sector's reluctance to make large infrastructure investments under a changing regulatory environment. By participating in summits, conferences, and other important public-policy interactions, private-sector leadership can work to protect their investments and state the business point of view on the future of sustainable energy.

Increasing public awareness of issues related to energy access, energy efficiency, and renewable energy is also critical to achieving the *Sustainable Energy for All* targets. The private sector can play a role in increasing public awareness by launching communications campaigns and marketing directly to customers and consumers. An upcoming opportunity in that respect is for companies to leverage and support the UN's Year of Sustainable Energy for All in 2012 and its associated public awareness campaigns. Consumers that are more aware of the benefits of increased energy access, energy efficiency, and renewable energy use are more likely to change purchasing decisions, consumption behavior, and voting patterns to drive more energy efficient and renewable energy lifestyles.

PARTNERSHIPS & COLLECTIVE ACTION

While businesses can make significant contributions to the *Sustainable Energy for All* targets independently, partnerships and collaboration can often lead to greater impact. In the realm of energy, there are many systemic challenges that require transformative partnerships for resolution, in place of individual actions and traditional cooperation. Whether collaborating within a value chain, across industries, with a local government, civil society organization or with the United Nations, businesses can find ways to utilize the strengths of partnership in order to make an impact beyond their immediate reach or footprint. For instance, businesses can benefit from the credibility, know-how, experience and global reach of the many UN specialized Agencies, Funds and Programmes. Over the past decade, UN-business partnerships have increased significantly, producing innovative solutions across a broad spectrum of issues. Further, businesses can leverage the UN Global Compact's 100 Local Networks to drive partnerships and collaboration around the world.

5 | STEPS TOWARDS RIO+20

In the lead-up to the Rio+20 Conference, companies are asked to begin their engagement with *Sustainable Energy for All.* Across the three modes of engagement, there is notable variability in a business' ability to contribute to the Initiative's three targets, due to distinct and unique core products, services, and operations. The *Framework for Business Action* will be developed to address, and effectively leverage, this variability. As the Framework development process continues, there are specific actions the private sector can take to participate and make an impact.

CONSIDER THE ROLE YOUR BUSINESS OR INDUSTRY CAN PLAY

In order to determine how different types of businesses can contribute to the *Sustainable Energy for All* targets, it will be important to segment the private sector into groups that have similar products and services, value chains, and energy production or consumption drivers. This will align businesses and industries with comparable priorities, and allow for these priorities to be addressed throughout the Framework development process. It will also facilitate the identification and development of relevant and meaningful engagement opportunities and best practices for similar businesses.

It will also be important to understand the effect different strategic energy drivers and priorities have on different private-sector industries to develop an effective *Framework for Business Action*. Issues such as energy consumption characteristics, energy production ability, regulation, the nature of core products and services, geographic reach, and the makeup of operations and value chains will impact the ways in which individual businesses and larger industry groupings can contribute to *Sustainable Energy for All.* By understanding and considering these strategic issues, industries can be positioned across the *Framework for Business Action* and aligned with targets that make the most business sense and promise the most significant results.

Some industries will be able to create new energy-efficient products, while some will have the opportunity to make core business contributions to access to energy. Other businesses might be better positioned to make social investments in renewable energy projects. Leading up to the Rio+20 Conference on Sustainable Development, these engagement platforms will be developed and expanded in order to inform private-sector contributions and obtain new private sector commitments to *Sustainable Energy for All.*

IDENTIFY CURRENT AND NEW WAYS TO CONTRIBUTE

A significant amount of work is already underway by governments and the private sector in the areas of energy access, energy efficiency, and renewable energy. This work highlights the key drivers and trends in global energy production and consumption and will influence how companies will likely engage across the three *Sustainable Energy for All* targets.

As the *Framework for Business Action* is further developed, it will combine existing best practices with actions required to reach the three targets. The Framework will therefore be able to provide engagement platforms to help businesses leverage existing strategies, develop new strategies, and implement measurable actions to achieve desired targets. These platforms will also enable individual businesses to collaborate, innovate, and make progress towards objectives set in support of the Secretary-General's Initiative.

ENGAGEMENT OPPORTUNITIES IN THE COMING MONTHS

Between now and the Rio+20 Conference, the *Framework for Business Action* will be further developed to guide new private-sector commitments and to set the direction for continued collaboration and partnerships. Ahead of Rio+20, the private sector, and especially executive leadership, should consider their business capabilities and where they can make the most impact across the three *Sustainable Energy for All* targets. This will allow businesses to define their opportunity to engage and prepare to make new commitments at Rio+20. Thinking through engagement modes and targets will help companies understand what partnerships and collaborations they need. Businesses should then begin working to establish partnerships and

can use the UN platform as a starting point. Businesses are also invited to work within the UN Global Compact's existing engagement platforms like Caring for Climate, engage with its nearly 100 Local Networks and use business.un.org, the UN-Business Partnership Gateway.

STEPS TOWARDS RIO+20 FOR THE PRIVATE SECTOR

1. **Provide input on the Framework for Business Action.**
2. **Begin engaging with the UN Global Compact on Sustainable Energy for All.**
3. **Establish partnerships and collective actions.**
4. **Determine and solidify new commitments for Rio+20.**
5. **Leverage the Global Compact's nearly 100 Local Networks and other engagement platforms to drive action.**

SUSTAINABLE ENERGY IN BUSINESS PRACTICES

The following is a collection of practices by Global Compact participants working toward greater access, efficiency and renewable energy. These replicable examples reflect different types of engagement that are collectively helping to assure sustainable energy for all.

(WHAT THE ICONS STAND FOR)

SUSTAINABLE ENERGY FOR ALL TARGETS

Achieving universal access to modern energy services.

Improve energy efficiency.

Increasing the share of energy generated from renewable resources.

MODES OF ENGAGEMENT

Core Business: Products & Services

Core Business: Operations

Social Investments & Philanthropy

Advocacy & Public Policy Engagement

Partnerships & Collective Action

A.P. Moller Maersk (Denmark, Industrial Transportation)
Countries of Impact: Global

In 2010, Maersk Line was contracted to build ten of the largest and most CO2-efficient container ships ever.

The capacity of each ship will be 18,000 TEU – 16 percent greater than the largest ship built so far. Delivery of the first ship is expected in 2013, to be used for transport between Asia and Europe. The company's goal was not only to build a ship larger than any of today's ships, but also to apply available technologies to make it the most CO2-efficient ship, in keeping with Maersk Line's commitment to reduce CO2 emissions per container moved by 25 percent by 2020 (compared to 2007).

The ships establish a new class of container ships, labelled "Triple-E" due to their economy of scale, energy efficiency and environmental performance: the additional capacity is not matched by a need for additional engine power. The ships' hulls are optimised for lower speeds, and the energy-efficient engine type is combined with a waste-heat recovery system which contributes to the ships' propulsion. Finally, the ships reduce CO2 emissions by 50 percent per container moved, compared to the industry average on the Asia-Europe routes.

The ships are also equipped with an effective and energy-efficient ballast water treatment system and will be prepared for installation of a SOx scrubber, once the technology has matured further. The vessels are further designed for safe and sound recycling. A so-called "Cradle to Cradle Passport", developed jointly with the Environmental Protection Encouragement Agency (EPEA), lists and describes the materials used, their location, and how they can be correctly disassembled and recycled/ disposed. Finally, all ships will be ISO14001-certified when they leave the yard.

Acciona (Spain, Construction & Materials)
Country of Impact: Peru

Peru has the second-lowest electricity coverage in South America, and Cajamarca is the region of Peru with the lowest level of electrification: about 70 percent of households have no electricity supply.

In some areas, the high dispersion of rural housing and the lack of road infrastructure, coupled with local terrain and climate, make the installation and maintenance of electrical networks costly. Here, Solar Home Systems (SHS) can provide basic electrical services until electricity grids reach the affected areas. The battery in an SHS accumulates electrical energy converted by the photovoltaic panel, and powers lights, radio or low-consumption television sets for up to four hours. Moreover, the battery stores energy for two days' consumption without sunlight.

Yet, the price is high for families with very low income. The initial investment is carried out based on gifts of shares and other support mechanisms. For example, the Ministry of Energy and Mines is co-financing rural electrification, and a small portion is devoted to off-grid electrification.

To address the issue of continuity, the Acciona Microenergy Foundation created Microenergy Peru (PEME). Its role is to operate and maintain the SHS, applying a fee-for-service model: users pay a monthly fee to use the energy of the SHS installed in their homes. The fee covers the costs of maintaining the SHS and replacing the failed components over its twenty-year lifespan.

Field surveys were conducted to ensure the affordability of the SHS. Based on the findings, the initial monthly fee was set at around USD 5. After the adaptation of the regulatory framework the user fee was lowered to USD 3.5 due to subsidies provided. Most potential end users were already spending a larger amount on candles, kerosene, batteries, etc. – the new systems mean financial savings for most of them.

BASF (Germany, Chemicals)
Countries of Impact: Global

Operating in an energy-intensive industry, BASF's success depends on long-term secure supplies of energy and raw materials. Increasing the efficient use of energy and raw materials on a sustainable basis is thus a top priority. The company has implemented a two-pronged approach to resource conservation: through highly efficient production and energy provision at its Verbund sites, and through innovative products for the efficient use of energy as well as energy storage and generation.

At major production sites around the world BASF uses a Verbund approach that links production and energy requirements in an intelligent manner. Primary energy carriers are used optimally both as raw materials and for generating electricity and steam. Heat from production processes is not discharged but captured to power downstream production plants. Without this Verbund, the total energy needed to generate electricity and steam in BASF Group power plants in 2010 would have been around 4.7 million metric tons of oil equivalent – approximately 56 percent higher than the actual figure of 3.0 million metric tons. The Verbund thus not only offers a crucial competitive advantage, it also has a positive impact on the environment.

BASF increasingly uses combined heat and power (CHP) plants to generate both heat and steam. With an overall fuel efficiency of almost 90 percent, such cogeneration plants are the front-runners among energy conversion methods suitable for use on an industrial scale. BASF currently operates 16 cogeneration units based on gas turbine technology for electricity and steam worldwide. Partner companies at BASF sites operate another seven units. In sum, BASF now produces more than 75 percent of its global electricity demand in such highly efficient plants.

Centrais Electricas Brasileiras – Eletrobras (Brazil, Electricity)
Countries of Impact: Global

Luz Para Todos (Light for All) - The National Program for Universal Access to and Use of Electric Power, was launched in November 2003, aiming to provide access to electricity to the rural population of Brazil by 2010. The program was coordinated by the Brazilian Ministry for Mines and Energy and executed by Eletrobras. Other partners included UNDP, USAID and the World Bank.

In a context in which 80 percent of the electrical exclusion was taking place in rural areas, the program sought to assure access to electricity to all homes and businesses in rural areas, improve the quality of service for the affected population, intensify the service pace and mitigate potential negative impacts, through the allocation of supporting funds and supplementation of financial resources.

The program aimed to serve about 2.5 million Brazilian families residing in rural areas, benefiting approximately 12 million people by 2008 and ensuring universal rural access to electric power by December 2015. Luz Para Todos is considered to be the most ambitious electric inclusion program implemented anywhere in the world.

But more than just providing power to the rural population, Luz Para Todos emerged as a gateway to social and economic development in low-income communities, contributing to poverty reduction and an increase in family incomes. Access to electricity facilitated the integration of health, education, water supply and sanitation services, as well as social programs implemented by the federal government.

With access to electricity, rural families are now able to acquire home appliances and electric rural equipment, causing an income increase and strengthening the human resources of these communities. It is estimated that the program contributed to the creation of approximately 300,000 direct and indirect jobs.

China Mobile Communications Corporation (China, Mobile Telecommunications)
Country of Impact: China

In 2010, China Mobile formulated various network equipment energy conservation grading standards such as the Energy Conservation Grading Standard for Core Network Equipment. With this grading standard, the company is able to incentivize principal equipment manufacturers to constantly improve the environmental performance of their products.

For China Mobile's centralized equipment procurement in 2010, the Energy Conservation Grading Standard was applied to evaluate the environmental performance of the equipment. Likewise, China Mobile began energy conservation grade labelling of GSM core network and wireless network equipment, and required all manufacturers to label the energy conservation grade on their equipment to improve performance.

China Mobile further actively develops low-carbon information applications such as Vehicle Information Service and Logistics Link to help reduce carbon emissions of relevant industries. In addition, the company develops innovative information applications specifically designed for environmental protection. These help provide technical solutions to enforce stricter pollution monitoring and environmental management.

In Hebei, China Mobile cooperated with the Hebei Provincial Expressway Administration and built the Road Conditions Information Platform. Launched in June 2010, the platform releases real-time traffic information, effectively reducing traffic jams and accidents. Five months after the launch, despite a 13 percent increase in one-way traffic flow, the system helped reduce accident rates triggered by traffic jams by 31.25 percent, and reduced expressway traffic jams over one hour by 13.95 percent, causing a significant reduction in fuel consumption and total emissions.

To promote and raise greater awareness of environmental issues and low-carbon lifestyles among city residents in Xinjiang, the company established the "Environmental Protection Pioneers" group and started the "China Mobile Urban Low-Carbon Action".

CNTG Energies (China, Oil Equipment, Services & Distribution)
Country of Impact: China

CNTG, in partnership with one of the big five state-owned power generation groups in China, has begun construction on the first natural gas-fired distributed energy combined heat and power (CHP) plant in Jiangxi Province in China. This facility will provide a cleaner energy supply to the surrounding industrial area and community. It can operate independently of the grid and offer cleaner, more efficient and more reliable power. This project represents a public-private partnership (PPP) aimed at implementing the highest calibre "new energy" technologies. The plant is estimated to achieve 80 percent energy efficiency, which is approximately a 260 percent improvement over a conventional fossil-fuel power plant. It could result in a reduction of 60 percent of CO_2 emissions.

More than 10 industrial users are committed to purchase energy from the plant – heat, steam, and hot and chilled water and electricity. Construction started in March 2011 and the facility should be completed by the end of 2011. This plan will be the showcase for advanced CHP technology and the successful public-private partnership effort.

CNTG's marketing arm in the USA conducted technical research and introduced state-of-the art-technology. CNTG will continue its efforts in China and worldwide to promote and implement important projects aimed at reducing carbon emissions.

Endesa Brasil (Brazil, Electricity)
Country of Impact: Brazil

Endesa Brasil distributes electricity to 2.5 million clients in the state of Ceará. Located in the Northeast region, Ceará is home to one of the largest concentrations of rural poor in Brazil.

Based on research carried out in 184 communities, the company observed systematic yet independent problems: from the company's perspective, the rural population was most likely to be insolvent and engage in theft of electric energy. From the community's perspective, the rural population suffered from high incidence of disease which was related to inadequate waste collection systems.

Faced with this reality, Endesa Brasil developed the Ecoelce program, which allows clients with reduced purchasing power to recycle their trash in exchange for discounts on electricity. The objective is to provide the population with an alternative way of generating income and reducing reliance on clandestine (and inefficient) sources of electricity.

Under the terms of Ecoelce, each client gathers waste and brings it to either a fixed or mobile collection point. For the clients, each class of waste is weighed and valued depending on the prevailing price for each material. The value is immediately recorded on the client's card and the discounts are transmitted to Endesa Brasil's billing system for incorporation into the client's bill. The equivalence in terms of energy saved or carbon emissions avoided is also internally calculated based on accepted scientific standards.

Since 2007, over 125,000 customers have benefited from the program, exchanging 5,700 tons of waste for 750,000 Brazilian Reais (approximately USD 327,510) in discounts on their electricity bills.

This program has resulted in a 60 percent reduction of unpaid accounts and has helped increase distribution to new customers who were previously unable to access electricity.

ENI (Italy, Oil & Gas Producers)
Countries of Impact: Nigeria, Republic of Congo, Global

Italian oil and gas company eni has reduced gas flaring globally by over 30 percent in the last three years, and is investing in new energy infrastructures in order to bring this figure up to 80 percent by 2014. When the programme is fully implemented, around five billion cubic metres of gas per year will be recovered and made available for markets in oil-producing countries. The associated gas, if reinjected into the system, allows for more efficient management of the reservoir, and grants the country maximum productivity. If used in natural gas liquefaction plants, the associated gas increases export capacity and consolidates the producer's position on the international market. If the gas is used to supply the local market and produce electricity, the population of the oil-producing country gains access to a stable and continuous supply of reliable and safe energy – a catalyst for social and economic development. This is especially relevant in markets like Nigeria and the Republic of Congo where more than 50 percent of the population have no access to electricity due to the lack of power generation plants and distribution infrastructures.

In the late 1990s, eni implemented the Zero Gas Flaring project in the Niger Delta. By 2010 it was using 78 percent of the gas produced. In Congo, eni began recovering associated gas at the M'Boundi oilfield in 2008. Recovered gas now fuels the Centrale Électrique de Djeno and the Central Électrique du Congo. The two plants account for about 60 percent of nationally-installed capacity. Energy generated through gas recovered at eni's oilfields now reaches 700,000 people in the Pointe-Noire area and per capita electricity consumption was raised from 300 kWh in 2007 to 462 kWh in 2010. In 2010, 500 million standard cubic metres of gas were recovered, leading eni to avoid 10.04 million tons of greenhouse gas (GHG) emissions.

Ericsson (Sweden, Mobile Telecommunications)
Countries of Impact: Kenya, Liberia

The Ericsson Community Power solution was developed in partnership with Swedish green site solution company Flexenclosure to support the electrification of the world's most remote villages.

The solution offers opportunities to transform the lives of individuals, businesses and communities that have traditionally been excluded from numerous services due to their lack of access to power.

The solution allows subscribers to recharge their mobile phones with excess power generated from an off-grid base-station site which can be partly or fully powered by renewable energy sources. In more mature and large-scale deployments, several sites can be combined to create a mini-grid to power services such as streetlights, clinics and schools for an entire community. It would even be possible to feed power from the base station into the national power grid which can help to alleviate power shortages.

In Africa, much basic infrastructure is lacking, and there are more people with mobile phones than access to electricity. Once connected to the Ericsson Community Power solution, many rural inhabitants can have access to electricity in their homes for the first time.

The concept of using excess power for community needs was trialed in Dertu, a Millennium Village in northeastern Kenya. There, the base station site generated approximately 4,000 kWh in excess renewable energy per year, roughly the amount of energy needed to illuminate street lights and power community buildings such as clinics and schools. In Dertu, the excess power was used to save lives by refrigerating needed medicines and anti-venom for snake bites.

Novozymes (Denmark, Pharmaceuticals & Biotechnology)
Country of Impact: Mozambique

Since 2008 Novozymes has looked for ways to engage in high-growth frontier markets. Initial studies indicated the opportunity to develop sustainable agriculture to increase food production as well as produce feedstock for ethanol production to replace charcoal as cooking fuel in urban households.

Replacing charcoal with ethanol has wide-ranging benefits. Today, indoor air pollution causes an estimated two million deaths per year and sickens millions more – mostly infants and small children. In addition to the impact on global health, nearly a third of Africa's seven million square kilometres of forest has already been burned for charcoal, stripping the continent of vital biodiversity and contributing majorly to the projected 6.7 billion tons of greenhouse gasses (GHG) that household energy use in Africa is expected to emit into the atmosphere by 2050.

In 2009, Novozymes partnered with CleanStar Ventures to conduct a joint feasibility study in Mozambique, which indicated a great opportunity for a highly sustainable, scalable and replicable venture. On that basis the companies jointly invested in the newly formed CleanStar Mozambique in August 2010.

CleanStar Mozambique is helping smallholder farmers in Sofala Province implement an environmentally restorative agroforestry system on their land. Whatever the families do not consume themselves, they will be able to sell to the company, drastically improving their nutrition levels while also increasing their incomes by over 400 percent. From the surpluses sold to the company, CleanStar Mozambique will produce a range of food products as well as an ethanol-based cooking fuel. These will be sold into urban markets – notably Maputo.

By 2014, the venture will involve 3,000 smallholders over 6,000 hectares, supply 20 percent of Maputo households with a clean and cheaper alternative to charcoal, and thus protect 9,000 acres of indigenous forests per year.

Philips Electronics (Netherlands, Technology Hardware & Equipment)
Country of Impact: Malaysia

In conjunction with its commitment to energy efficiency, Philips collaborated with the Malaysia-based Center for Education and Training on Renewable Energy and Energy Efficiency (Cetree) to develop the Philips-Cetree Energy-Efficient Mobile Showhome, in an effort to bring information and tips on energy conservation, energy efficiency and alternative energy sources to rural populations across the country.

In 2007 and 2008, the Mobile Showhome was taken on a roadshow to rural areas in Malaysia. The Showhome contained five knowledge kiosks – General Knowledge on Renewable Energy, Energy-Efficient Electrical Equipment, Solar Thermal, Solar Electric and Biomass – showcasing simple activities that give practical experience.

The Mobile Showhome's engine applied a multiplicity fuel system developed together with Engine Technology (ELSBETT) to enable the diesel engine to use any vegetable oils (in this case, the engine was run on 100 percent palm oil). The Mobile Showhome was also equipped with its own energy system which provided all of the electricity needed. The LCD screen and digital video, fan, fluorescent lamps, laptop, refrigerator and coffee maker all use solar energy. The solar cell system used here consisted of six solar panels.

Royal Dutch Shell (Netherlands, Oil & Gas Producers)
Countries of Impact: Global

Each year, nearly two million people worldwide die as a result of prolonged exposure to smoke from traditional cookstoves. The smoke leads to chronic and acute diseases, especially among children and women who are most exposed.

In 2010, Shell helped launch the Global Alliance for Clean Cookstoves with the Shell Foundation, the UN Foundation, the World Health Organization, NGOs and other public and private partners. Shell's involvement builds on the Shell Foundation's work to improve cookstove standards and support local businesses in building and selling such stoves. Through the Alliance, Shell contributes its business experience and USD 6 million in funding to help build a cleaner-burning cookstoves industry. The company is also using its knowledge of energy markets to assess the demand for clean cookstoves in several developing countries. Through a combination of information sharing, consumer marketing, and financing mechanisms for affordability, the Alliance aims to create a self-sustaining market for 100 million clean cookstoves worldwide.

Cookstoves that burn fuel more efficiently contribute to poverty reduction and improved health from increased access to clean energy and reduction of harmful indoor air pollution.

More broadly, the clean cookstove supply chain should be a source of economic opportunity and job creation at the local level: local partners will be needed for distribution, sales, and service of stoves, or supply of processed fuels. A thriving global industry for clean cooking solutions will provide these benefits on a sustainable basis, providing jobs to many thousands of individuals. The Alliance is particularly interested in creating such local economic opportunities for women.

The Alliance partners are also working to develop global production standards for cleaner-burning stoves, focusing on raising awareness of the health and environmental benefits of improved stoves with government policymakers and the public.

Siemens (Germany, Technology Hardware & Equipment)
Country of Impact: Kenya

Approximately 150,000 fishermen around Lake Victoria, Africa's largest lake, go out in their boats every evening to fish for the Omena. They entice the fish into their nets with a kerosene lamp attached to a float. These lamps emit climate-damaging CO2 and are expensive to operate: more than half of a fisherman's income goes for kerosene.

To improve the situation, OSRAM, a Siemens subsidiary, developed an off-grid solution – that is, one that is completely independent of the power grid. Its heart is a so-called energy hub, an energy station comprising a building with photovoltaic panels installed on the roof. These panels generate the power used to recharge special lamp batteries inside the building. Thanks to the solar panels, the electricity it produces is CO2-free.

OSRAM's first energy hub was inaugurated in 2008. It supplies up to 10 kilowatts of electricity – enough to recharge the accus of around 350 lamps per day. In addition, the hub also charges batteries that can be connected to electrical devices such as radios. When the lamps and batteries run out of power, they can be exchanged for recharged devices under the deposit system that has been set up.

Using an accu-powered lamp, the fishermen save 30 percent of their costs. Once charged, the 7-watt lamp will shine for up to eight hours. Microcredits are offered by a non-governmental organization to enable people to buy the lamps and the batteries.

The energy hubs also have a water purification system. The water is filtered in various stages and bacteria and viruses are eliminated with UVC lamps. This method enables up to 3,000 litres of water a day to be made safe for drinking.

ToughStuff International (Mauritius, Alternative Energy)
Country of Impact: Kenya

In Kenya, approximately 96 percent of people in rural areas are off-grid, as are many in poorer areas around towns and cities.

The founders of ToughStuff, a commercial enterprise with a social purpose, recognised that a small solar photovoltaic (PV) module could power a range of useful products including LED lamps and mobile phones, and that by selling modules and products as individual items, they could be made more affordable for off-grid households.

The PV module uses a thin film of amorphous silicon to generate electricity from sunlight. Over 190,000 modules have been sold since 2008, bringing benefits to over 930,000 people.

The main environmental benefit of ToughStuff lamps is cutting greenhouse gas emissions by reducing the use of kerosene. Lamps in use at the end of July 2011 are avoiding the emission of about 11,400 tons per year of CO2.

Mobile phones and similar devices have changed urban life, but their transformational impact is off-grid. In Kenya and an increasing number of other countries they provide not just communications, but also access to mobile banking and other vital services such as healthcare.

Kerosene and phone-charging use a significant proportion of household income. In rural Kenya, the wage for a labourer is about KES 100 (USD 1.2) per day, so the savings from using ToughStuff products – typically KES 120 per week on kerosene and KES 60 on phone-charging – are significant.

The successful launch of products in Kenya is now being followed in other East African countries. ToughStuff's target is to reach 33 million poor consumers, mainly in Africa, by 2015.

Vestas Wind Systems (Denmark, Alternative Energy)
Countries of Impact: China, Global

Emerging markets demand clean energy technologies but are also in need for know-how. Vestas manages these needs with an ambitious localization strategy in China and other emerging markets. Vestas has invested more than RMB 3.5 billion in China, including establishing manufacturing complexes in three locations and employing 3,100 people.

As the world's largest wind turbine manufacturer, Vestas works not only to deliver clean energy technology, but also to minimize the company's environmental impact. With a regionalized global manufacturing footprint, which makes good business sense, Vestas can also reduce its carbon footprint by not having to ship large wind turbines over long distances.

Vestas' efforts in ensuring a sustainable production setup have won the recognition of local government of the Tianjin Economic Development Area (TEDA), where Vestas operates its largest integrated manufacturing complex. The factory actively participates in the local industrial community by sharing knowledge on how to treat waste water, handle waste and recycled materials as well as saving energy and other resources. Recently, Vestas has been chosen to participate in a project to define the best practices for waste handling which will eventually define the standard for all factories in TEDA.

Sharing best practices with the local communities benefits the environment, the development and the people. Working with heavy equipment implies substantial health and safety risks to the employees. All employees at the factory attended a two-day safety awareness course, one of several steps in building a safety culture that goes ahead of sustainable development – and reaches beyond Vestas.

Vestas is also promoting global access to renewable energy by pioneering the global consumer label WindMade, dedicated to increasing corporate investments in local wind power by setting standards for companies consuming wind energy. This gives consumers the opportunity to choose products produced with wind energy, potentially increasing demand for products that embrace this clean and renewable energy source.

Steps Towards Rio+20 for the Private Sector

1. Provide input on the *Framework for Business Action.*
2. Begin engaging with the UN Global Compact on *Sustainable Energy for All.*
3. Establish partnerships and collective actions.
4. Determine and solidify new commitments for Rio+20.
5. Leverage the Global Compact's nearly 100 Local Networks and other engagement platforms to drive action.

The Principles of the UN Global Compact

The UN Global Compact calls on business leaders to embrace and enact the following set of universal principles within their sphere of influence.

HUMAN RIGHTS

Principle 1 Businesses should support and respect the protection of internationally proclaimed human rights; and

Principle 2 make sure that they are not complicit in human rights abuses.

LABOUR

Principle 3 Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;

Principle 4 the elimination of all forms of forced and compulsory labour;

Principle 5 the effective abolition of child labour; and

Principle 6 the elimination of discrimination in respect of employment and occupation.

ENVIRONMENT

Principle 7 Businesses should support a precautionary approach to environmental challenges;

Principle 8 undertake initiatives to promote greater environmental responsibility; and

Principle 9 encourage the development and diffusion of environmentally friendly technologies.

ANTI-CORRUPTION

Principle 10 Businesses should work against corruption in all its forms, including extortion and bribery.

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