

SDG INDUSTRY MATRIX



Industrial Manufacturing

New Sustainable Development Goals to make our world more:
Prosperous • Inclusive • Sustainable • Resilient

Produced jointly by:



United Nations
Global Compact

and





NEW GLOBAL GOALS FOR SUSTAINABLE DEVELOPMENT



In September 2015, 193 member States of the United Nations met in New York to adopt 17 new Sustainable Development Goals ('SDGs') to make our world more prosperous, inclusive, sustainable and resilient.



GLOBAL GOALS 2015 - 2030

The SDGs are an ambitious plan of action for people, planet and prosperity. They are universal, applying to all nations and people, seeking to tackle inequality and leave nobody behind. They are wide ranging including ending poverty and hunger, ensuring sustainable consumption and production, and promoting peaceful and inclusive societies.

The agreement on a new sustainable development agenda expresses a consensus by all governments that the SDGs can only be achieved with involvement of the private sector working alongside Governments, Parliaments, the UN system and other international institutions, local authorities, civil society, the scientific and academic community – and all people. Hence, Governments in the Post-2015 declaration “...call on all businesses to apply their creativity and innovation to solving sustainable development challenges”.

Each and every SDG provides an opportunity for business and two are worth highlighting as cross-cutting themes:

- SDG 12 focuses on production and consumption and includes a specific target on “adopting sustainable business practices and reporting”;
- SDG 17 includes two targets on multi-stakeholder partnerships to ensure this attracts sufficient focus.





SUSTAINABLE DEVELOPMENT GOALS

1 NO POVERTY 	2 ZERO HUNGER 	3 GOOD HEALTH AND WELL-BEING 	4 QUALITY EDUCATION 	5 GENDER EQUALITY 	6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY 	8 DECENT WORK AND ECONOMIC GROWTH 	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 	10 REDUCED INEQUALITIES 	11 SUSTAINABLE CITIES AND COMMUNITIES 	12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION 	14 LIFE BELOW WATER 	15 LIFE ON LAND 	16 PEACE, JUSTICE AND STRONG INSTITUTIONS 	17 PARTNERSHIPS FOR THE GOALS 	 SUSTAINABLE DEVELOPMENT GOALS

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SDG INDUSTRY MATRIX

A

PURPOSE

The SDG Industry Matrix aims to inspire and inform greater private sector action to drive inclusive, sustainable prosperity.

Recognising that the opportunities vary by industry, the Matrix provides industry specific ideas for action and industry specific practical examples for each relevant SDG. It profiles opportunities which companies expect to create value for shareholders as well as for society.

The SDG Industry Matrix has been jointly conceived and led by the United Nations Global Compact and KPMG International Cooperative ('KPMG') to convert the interest stimulated by the Sustainable Development Goals into strategic industry activities which grow in scale and impact. This could be through sparking new innovative approaches, prompting companies to replicate successful activities in new markets, catalysing new collaborations and increasing participation in existing collaborations.

B

OPPORTUNITY

Through the lens of "shared value" the private sector can identify opportunity in addressing social and environmental challenges.

In the context of the SDGs, "shared value" represents the coming together of market potential, societal demands and policy action to create a more sustainable and inclusive path to economic growth, prosperity, and well-being¹. The SDGs provide an opportunity for companies to create value for both their business and society through:

- Developing products, services, technologies and distribution channels to reach low-income consumers;
- Investing in supply chains which are ethical, inclusive, resource-efficient and resilient;

- Improving the skills, opportunities, well-being and hence productivity of employees, contractors and suppliers;
- Increasing investment in renewable energy and other infrastructure projects.

Several trends are making these opportunities more compelling:

- **Demographics:** The population in developing regions is projected to increase from 5.9 billion in 2013 to 8.2 billion in 2050 whilst the population of developed regions will remain around 1.3 billion people;
- **Income growth:** Between 2010 and 2020, the world's bottom 40% will nearly double their spending power from US\$3 trillion to US\$5.8 trillion;
- **Technology:** Rapid innovation is catalysing improved market analysis, knowledge sharing, product and service design, renewable energy sources, distribution models and operational efficiencies. Technology is also lowering market entry costs for non-traditional actors and start-ups with innovative 'disruptive' business models;
- **Collaborations:** Governments, businesses, international financial institutions, the United Nations, civil society and academia are developing new ways of working with each other in pursuit of compatible objectives.

1. 'Unlocking the Power of Partnership: A Framework for Effective Cross-Sector Collaboration', KPMG International

SDG INDUSTRY MATRIX (CONTINUED)

C

METHODOLOGY

The SDG Industry Matrix has been compiled through a participatory three step process:

1. KPMG and the United Nations Global Compact drew on their respective industry insights to populate a preliminary draft with examples and ideas for action;
2. The United Nations Global Compact circulated the draft to its network of private sector participants, business associations and UN agencies requesting them to submit further examples and ideas for action;
3. KPMG and the United Nations Global Compact co-convened a multi-stakeholder working roundtable (one per industry, each in a different continent) to agree the final SDG Industry Matrix content, including the most significant opportunities to profile in the 'Industry Focus Highlights' section.

Opportunities for Shared Value which are applicable to all industries are in *italics*

D

SYNERGIES

The SDG Industry Matrix draws on the commitment that companies have already expressed to the UN Global Compact's ten principles.

The SDG Industry Matrix builds on the recognition that all companies, regardless of their size, sector or geographic footprint, have a responsibility to comply with all relevant legislation, uphold internationally recognized minimum standards and to respect universal human rights. The UN Global Compact website includes key tools and resources which can help companies meet their minimum responsibilities and guide them to take supportive actions beyond these minimum responsibilities to advance social and environmental goals.

The SDG Industry Matrix is also complemented by the SDG Compass (produced by the Global Reporting Initiative, the United Nations Global Compact and the World Business Council for Sustainable Development), which guides companies on defining strategic priorities, setting goals, assessing impacts and reporting.

A photograph of an industrial facility, likely a power plant or refinery, featuring several tall, cylindrical chimneys or smokestacks rising from a complex of buildings and piping. The sky is clear and blue. The text 'INDUSTRIAL MANUFACTURING INDUSTRY FOCUS HIGHLIGHTS' is overlaid in white, bold, sans-serif font on the right side of the image.

INDUSTRIAL MANUFACTURING INDUSTRY FOCUS HIGHLIGHTS

This section profiles some of the most significant opportunities, principles-based initiatives and collaborations for Industrial Manufacturing. The supporting Matrix provides additional ideas and examples submitted by companies

(it is not intended to be an exhaustive list).

Opportunities for shared value

The biggest opportunities for the Industrial Manufacturing industry to create shared value – i.e. where we see the coming together of market potential, societal demands and policy action – are grouped around the following themes:

SUSTAINABLE PRODUCTS

- Develop more **sustainable vehicles**, vessels and aircraft, importantly including public buses, trains and trams
- Develop more **resource efficient machinery** that generates less effluent, waste and pollutants
- Develop **renewable energy infrastructure** and technologies that increase storage capacity, increase reliability and reduce cost
- Develop **agribusiness machinery**, tools and industrial processes that facilitate precision agriculture and reduce water intensity, energy consumption and soil compaction
- Develop products which improve **home and office energy efficiency** including lighting, ventilation, heating and air conditioning
- Apply a circular economy mind-set when designing products so that there is improved end of product lifecycle **reuse and recycling**

SUSTAINABLE PRODUCTION

- Incorporate **innovative technologies**, such as 3D printing, into manufacturing processes to reduce waste from long-run production and prototyping
- Develop and implement improved processes (e.g. closed loop manufacturing) to **reduce, reuse and recycle** water, raw materials, non-renewable minerals, other inputs, by-products and waste
- Increase the proportion of energy from **renewable sources** (including solar, wind and biomass) and reduce fossil fuel combustion
- Source materials from sustainable sources (e.g. forestry products) and components with **lower embedded energy**
- Increase **energy efficiency** in industrial manufacturing plants and across distribution networks

Opportunities for shared value

(CONTINUED)

LOW COST PRODUCTS

- Develop and manufacture low cost **medical devices** to increase access to quality healthcare in low and middle income countries
- Develop durable, low cost **water pumps** and sanitation technology for low income communities, adapted for rural and urban contexts
- Develop low cost **agricultural machinery** and tools to increase agricultural productivity
- Develop efficient **microgrid technology** to bring affordable renewable energy to rural and marginalised communities

ENTERPRISE DEVELOPMENT

- Collaborate with governments and other companies to establish **industrial zones** which unlock complementary investments in infrastructure, technology and production
- Increase the proportion of materials and components which are **sourced locally** in low and middle income countries
- Develop the productive capacity of **small and medium-sized businesses** to participate in global supply chains, including businesses owned by women and minority groups
- Build the **resilience of suppliers** in emerging economies to reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters

Multi-stakeholder partnerships and collaborations will become increasingly important in realising these shared value opportunities. There is critical momentum of activity and the opportunity for shared value has never been greater.

Good practice principles, standards and tools

In addition to the UN Global Compact's ten principles in the areas of human rights, labour, the environment and anti-corruption, there are a number of good practice principles, standards and tools which align with the Industrial Manufacturing industry's contribution to sustainable development. These include the following:

CONFLICT FREE SOURCING INITIATIVE

Founded in 2008, this is one of the most utilized and respected resources for companies from a range of industries looking to address conflict minerals issues in their supply chains. The flagship Conflict-Free Smelter Program offers companies and their suppliers an independent, third-party audit that determines which smelters and refiners can be validated as "conflict-free," in line with current global standards. The initiative also offers Conflict Minerals Reporting Templates, which help companies disclose and communicate about smelters in their supply chains, and produces white papers and guidance documents on responsible conflict minerals sourcing and reporting. Almost 300 companies participate in the CFSI today.

INTERNATIONAL COUNCIL ON MINING AND METALS

The ICMM has created a kit comprising 17 tools covering the assessment, planning, management, and evaluation phases of community development as well as stakeholder relationships.

ETHICAL TRADING INITIATIVE

ETI is an alliance of companies, trade union organizations, and NGOs that are committed to working together to identify and promote good practice in labour code implementation, including monitoring and verifying compliance with code provisions.

AUTOMOTIVE INDUSTRY ACTION GROUP

Established in 1982, AIAG is a non-profit association where professionals from a diverse group of stakeholders – including retailers, suppliers of all sizes, automakers, manufacturers, service providers, academia, and government – work collaboratively to streamline industry processes via global standards development and harmonized business practices.

BETTER WORK

Better Work is a unique partnership between the International Labour Organisation and the International Finance Corporation, dedicated to reducing poverty and providing a fair framework for globalization in developing countries through a comprehensive process for assessment, remediation and in-factory training tools.

ELECTRONIC INDUSTRY CITIZENSHIP COALITION

EICC is a non-profit coalition of electronics companies committed to supporting the rights and wellbeing of workers and communities worldwide affected by the global electronics supply chain. EICC members commit and are held accountable to a common Code of Conduct and utilize a range of EICC training and assessment tools to support continuous improvement in the social, environmental and ethical responsibility of their supply chains. The Code of Conduct references international norms and standards including the Universal Declaration of Human Rights, ILO International Labour Standards, OECD Guidelines for Multinational Enterprises, ISO and SA standards, among others.

GLOBAL SOCIAL COMPLIANCE PROGRAMME

The GSCP is a business-driven programme for companies whose vision is to harmonize existing efforts to deliver a shared, global and sustainable approach for the continuous improvement of working and environmental conditions across categories and sectors in the global supply chain. The GSCP offers a global platform to promote knowledge exchange and best practices to build comparability and transparency between existing systems.

Multi-stakeholder partnerships and collaborations

The SDG Industry Matrix includes several examples of collaborations which advance sustainable development. Of these, some of the largest for Industrial Manufacturing include:

GREEN INDUSTRY PLATFORM

This global, high-level, multi-stakeholder partnership and forum aims to catalyze, mobilize and mainstream action on green industry around the world. It provides a framework to bring governmental, business and civil society leaders together to secure concrete commitments and action to green the manufacturing process and create green industries for production of goods and services for domestic use and export.

RESOURCE EFFICIENT AND CLEANER PRODUCTION

The joint UNIDO-UNEP global RECP programme was formulated and approved in 2009. It aims to scale up and mainstream RECP for improving resource productivity and environmental performance of enterprises and other organizations. The four-pronged programme strategy targets: expansion and further development of a global service delivery network; thematic RECP applications for greater resource efficiency, waste and emission prevention and safe chemicals management; mainstreaming of RECP in government policy and enterprise financing; and enabling RECP innovation in products and technologies.

CEMENT SUSTAINABILITY INITIATIVE

The CSI is a global effort by 26 major cement producers with operations in more than 100 countries who believe there is a strong business case for the pursuit of sustainable development. Collectively these companies account for around 30% of the world's cement production and range in size from very large multinationals to smaller local producers. The purpose of this Initiative is to identify actions and facilitate steps cement companies can take, individually and as a group, to accelerate progress toward sustainable development, to provide a framework for other cement companies to become involved and to create the content and context for further stakeholder engagement.

BEYOND MONITORING WORKING GROUP

Business for Social Responsibility's Beyond Monitoring Working Group is a collaboration of leading companies from many industries who embrace a vision of supply chain sustainability that is driven by internal alignment, supplier ownership, worker empowerment, and public policy engagement. Together these companies explore next generation supply chain sustainability approaches to improve their individual companies' programmes and to drive the field forward.



SDG INDUSTRY MATRIX FOR INDUSTRIAL MANUFACTURING

The following pages outline opportunities – under each of the 17 SDGs – for companies to create value for their business whilst creating a more sustainable and inclusive path to economic growth, prosperity, and well-being. It also profiles practical company examples submitted through the consultation process.

SDG 1

End poverty in all its forms everywhere

OPPORTUNITIES FOR SHARED VALUE

- Allocate **research and development** budget to the design and manufacture of industrial products for emerging economies, taking into account differing market opportunities, resource availability and budgets.
- Commission independent **assessments of the social, economic and environmental impacts of the company's products and services** (for example, using the **KPMG True Value methodology** which quantifies them in financial terms).
- Build the **resilience of suppliers and retailers** in emerging economies to reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters.
- Increase the proportion of products which are **sourced and manufactured locally** in developing and emerging economies, creating jobs and raising incomes in areas with high levels of poverty, whilst also reducing costs and carbon emissions associated with freighting goods.

LEADING BY EXAMPLE

- **ACC Ltd.**, an Indian manufacturer of cement and ready-mixed concrete, sees the local communities located around its plants and mines as key stakeholders in the ongoing running of its operations. The company actively assists them in identifying, prioritizing and meeting their developmental aspirations through periodic needs assessment surveys. Needs and grievances are addressed through structured and site-specific impact assessments (conducted every three years) and stakeholder engagement surveys, conducted annually at all locations. ACC has created a Community Advisory Panel comprised of specially selected representatives from the local community, Government, civil society organisations and opinion leaders. The Community Advisory Panel participates in identifying local development needs, supports in project formulation and monitoring of the projects implemented. These projects include various community building initiatives, as well as helping community members create sustainable livelihoods by providing

vocational guidance with skill-sets to enhance employability and income generation.

- **DBL Group**, a diversified conglomerate, has created a fair price shop in Bangladesh called 'Bandhan' which serves low income workers, providing essentials and commodities at the manufacturers' factory price. The shop aims to reduce workers' monthly expenditure burden and shelter them from economic inflation. Any worker of DBL can buy items through zero-cash and on-credit transactions: the bills are simply adjusted with their salaries at the end of the month.
- **Maruti Suzuki**, an Indian car manufacturer, places significant focus on local sourcing of parts. Nearly 78% of the company's supplier base by value is located within a 100km radius of the company. Localization is a critical element of the company's supply chain, and has been found to have many benefits. It develops a reliable local source for future requirements, reduces exposure of the company



1 NO POVERTY



Photo: Curt Carnemark/World Bank

to foreign exchange movement, builds capability of local suppliers and boosts the local economy.

SDG 2

End hunger, achieve food security and improved nutrition and promote sustainable agriculture



2 ZERO HUNGER

OPPORTUNITIES FOR SHARED VALUE

- Research and develop **agribusiness machinery, tools and industrial processes** that make farming and food processing more efficient and sustainable by reducing water intensity, reducing the need for pesticides and/or increasing energy efficiency.
- Apply **data analytics** capabilities (such as those used for semiconductor manufacturing) to the hydroponic production of vegetables by collecting and analysing data from sensors and adjusting heating, ventilation, light and irrigation accordingly.
- **Advise farmers in extended supply chains** (e.g. rubber tappers) how to increase their productivity, storage, logistics and sustainability.
- **Procure biomass** from farmers to contribute to energy needs of manufacturing processes, whilst also raising farmers' incomes.

LEADING BY EXAMPLE

- **Ambuja Cements Ltd** worked closely with farmers in Rajasthan, Kodinar, Bhatapara, Darlaghat and Chandrapur (India) to facilitate the creation of a farmers' organization that procured and sold biomass to Ambuja Cements Ltd. (ACL). Traditionally, crop residues are burnt in many parts of India, however biomass is a valuable alternative source of fuel. The initiative began as a group of farmers selling crop-residues to the industry, but slowly transformed into a strong farmers' institution, whose voice represented local interests and sought to create wealth for the farmers. This achieved

multiple benefits by providing Ambuja Cements with a reliable source of alternate fuel, providing farmers with a new source of income, and sustaining soil nutrients that otherwise would be lost due to burning of crop-residues.

- **Fujitsu Ltd.** is applying cloud-based data analytics to the hydroponic production of low-potassium lettuce and spinach that can be eaten raw by dialysis patients and people with chronic kidney disease at its Aizu Wakamatsu factory in the northeastern area of Japan. The operation takes place in a dust-free "clean-room" formerly used for



Photo: Edwin Huffman/World Bank

semiconductor production. Fujitsu's cloud platform - Akisai - stores and analyses data from sensors in the plant factories, and manages atmospheric conditions precisely to create the ideal growing environment for vegetables. By applying the same industrial perspective from semiconductor manufacturing to vegetable cultivation, Fujitsu is able to keep the weight and nutrient constituent parts of lettuce within a defined range, thereby achieving effective high added-value vegetable production.

- **Jain Irrigation Systems** has developed a drip irrigation system designed specifically for smallholder farmers' incomes and farming conditions, which reduces water usage considerably. Recognizing that technology is only part of the answer to water conservation, the company then works closely with customers to teach "precision farming", which optimizes the balance between fertilizers, pesticides, water and energy in order to increase output. Farmers learn that using less water can actually increase yields. To encourage customers to purchase its products, the company helps them apply for government subsidies as well as bank loans. Jain has also pioneered contract farming, buying produce at a guaranteed floor price, helping smallholders apply for loans and plan investments more easily. Farmers are now able to buy higher quality farm inputs, including irrigation systems.
- **Royal Philips City Farming Program** works with universities and partners to develop indoor commercial farms using LED grow lights. Farming by this method can result in 20-25 harvests a year, with up to 85% less energy usage. Indoor growing systems based on LED lighting can maximize plant photosynthesis, while minimizing energy use, for delicious and nutritious vegetables grown in a sustainable manner. Growing crops vertically makes it possible to grow more plants per acre than would be possible with a field farm, enabling more harvests per year, with little waste produced, less agricultural run-off and minimal greenhouse gasses because the food is grown where it is consumed.
- **Pirelli & C. SpA** has developed a partnership with its Supplier Kirana Megatara, one of the major rubber processors in Indonesia, to support natural rubber farmers (second-tier in Pirelli's supply chain) through quality training aimed at enhancing rubber tree productivity as a base to not only enhance farmers' earnings, but also to prevent deforestation risks linked to low productivity. Moreover, the program involves the distribution of scholarships to support education for the farmers' children. Today, around 6,000 farmers are involved in the program.
- **ThyssenKrupp Industries India**, with its large market presence in the sugar industry, is constantly looking to develop more energy-efficient equipment and processes for all areas of sugar production. To meet market demand for energy-efficient equipment, ThyssenKrupp Industries India has developed a highly energy-efficient, trash plate-less two-roller mill to overcome the limitations (frictional losses, complexity and wear) of the conventional three-roller mill. This mill results in power saving and lower investment costs for customers.



2 ZERO HUNGER



SDG 3

Ensure healthy lives and promote well-being for all at all ages



3 GOOD HEALTH AND WELL-BEING

OPPORTUNITIES FOR SHARED VALUE

- Invest in the development of low-cost processes, products and distribution networks for the manufacture and sale of **medical devices**, tailored to the needs of middle and low-income countries, developing the requisite local capacity to service and maintain medical equipment.
- Improve **working conditions** for employees across the value chain (including providing support for breastfeeding mothers) and provide employees and their families with **healthcare** services and insurance.
- Improve safety and resilience of staff – and other people in the value chain where feasible – in locations with high disaster risk by developing robust **disaster risk mitigation** and preparedness plans (including emergency first aid and rescue skills) and providing them with physical and psychosocial support after disaster events.

LEADING BY EXAMPLE

- **General Electric's** healthcare business has incubated and spun off a start-up company in India for the first time. GenWorks, launched in February 2015 and headed by former GE Healthcare executives who own a majority stake in the company, is attempting to create an ambitious healthcare distribution network for Tier-2 and Tier-3 towns and cities as part of a push to solve some of the biggest healthcare challenges facing the country. GE Healthcare, which holds a 26% stake in the entity, incubated the idea of GenWorks a little over a year ago inside the company. The company was looking at scaling up its distribution in India, and this startup facilitated the creation of a distribution network far beyond traditional

boundaries, helping to solve the challenge of access and affordability of healthcare for the bottom half of India's population.

- **Hitachi** Proton Beam Therapy System is one example of healthcare innovation developed by Hitachi group companies working together to apply advanced technology in accelerators, irradiation, and control systems that they have developed over the years. Proton beam therapy is a more patient friendly cancer treatment, compared to conventional radiation therapy, because it precisely targets tumors thereby minimizing the damage to surrounding healthy tissue. Hitachi has also developed spot scanning irradiation technology that can accurately target tumors that have complex



Photo: Alfredo Srur/World Bank

shape and structure and apply high-energy proton beams to them. The company is currently developing a new system which could target and apply high dose proton beams to tumors that move due to a patient's respiration during treatment.



3 GOOD HEALTH AND WELL-BEING

- **Siemens AG** runs Mobile Clinics which bring healthcare to underserved communities in India. It uses market-based mechanisms to provide low-income communities with services they could not otherwise access or afford, bringing the company's products and technologies to new, underserved customers. This provides the company with an opportunity to trial new technologies and innovative business models. In India, the mobile clinic operating in Uttarakhand province has established more than 800 medical camps in the past six years and treated about 60,000 patients with no equipment failure or vehicle breakdowns.
- **Tata Steel** works in conjunction with the Thai government to ensure a 'Drug Free Workplace' and offers support to prevent, as well as solve, drug addiction. Additionally, it regularly organizes mobile clinics, influenza prevention campaigns and also works with NGOs and other philanthropic organizations like the Thai Red Cross Society as a part of its health initiatives, ensuring a productive workforce.
- **General Electric** has begun manufacturing low cost medical equipment, manufactured in India, to address the medical equipment needs in emerging markets. The company has opened a number of manufacturing facilities in India, with an extended line of products including ultrasound machines, ECG units, and maternal and infant care equipment. In April 2015, GE announced the launch of Revolution™ ACTs*, the first Computed Tomography system designed and developed by GE Healthcare in India. The Revolution ACTs is manufactured in India for India and the world.
- **General Electric** launched "Developing Health Globally" to help improve healthcare delivery for under resourced regions around the world. In Rwanda for instance, biomedical engineering programs were delivered by trained technicians to help disseminate technical knowledge of basic medical equipment management and troubleshooting at the local hospital level. As a result, evaluations showed a 25% increase in problem resolution, along with a 35% decrease in equipment downtime across the 32 district level hospitals.



Photo: Eric Miller/World Bank

SDG 4

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all



4 QUALITY EDUCATION

OPPORTUNITIES FOR SHARED VALUE

- Promote and invest in university and vocational **STEM education** (i.e. Science, Technology, Engineering and Mathematics) to secure access to employees with skillsets which meet future business needs in countries of operation (e.g. product designers, engineers, data analysts and environmental scientists).
- Provide **training to component and raw material suppliers** to increase the productivity and sustainability of their operations, ensuring access to high quality, environmentally sensitive inputs.
- *Collaborate with other businesses, NGOs and governments to **improve learning in countries within the company's value chain** (thereby making a long term investment in a diverse talent pipeline and improved economy).*

LEADING BY EXAMPLE

- **ABB Ltd.**, a Swiss-based power and automation group, provides scholarships to talented engineering students in different parts of the world who can prove a high standard of academic achievement and who need financial support to be able to continue their studies. The current scholars come from twelve universities in Brazil, China, India, Indonesia, Malaysia, Mexico, Poland, Turkey and Vietnam. The scholarships cover up to five years of study and ABB also provides the students with a mentor from the company to encourage and track their progress. In addition, scholars are invited to visit ABB's Corporate Research Center in Switzerland where they listen to technology presentations, visit

a factory, exchange with other students, and work in teams on their own technical presentations to be judged by a panel of experts. ABB also provides other support to students, schools and colleges around the world, for example holding vocational engineering summer schools in Saudi Arabia and South Africa.

- **Airbus Group** launched a partner program in 2014 with 22 universities in 12 countries to mould the curricula of their degree courses to the future requirements of the aerospace industry. The Airbus Group University Partner Program cultivates the benefits of working more closely with universities,



Photo: Eric Miller/World Bank



4 QUALITY EDUCATION

developing the Group's competencies portfolio, promoting its employer brand, broadening the recruitment pool and increasing workforce diversity. It will also give some of the approximately 119,000 young people studying at these universities highly relevant skills, and introduce them to rewarding careers. In addition, Airbus runs a biennial global competition called Fly Your Ideas, organised in partnership with UNESCO, which challenges students to innovate for the future of aviation. So far over 15,000 students from 600 universities in over 100 countries have taken part in the competition.

- **Dangote**, a Nigerian manufacturing conglomerate, developed its own academy which provides training in technical and management skills for current and potential employees. The Academy recruits students from secondary and tertiary institutions and provides them with the skills to run major industrial factories. The academy works with industrial partners such as Haver & Boecker, FLSmidth, Loesche, and Siemens to provide high-quality training in cement production and maintenance. Since the first academy opened in 2010, over 550 students having graduated and gained employment within the Group. Dangote is now collaborating with a German consortium to establish the German model of Dual Vocational Education System at Dangote Academy.
- **Siemens AG** has introduced youth education programs to combat the shortage of skilled workers in the engineering field. The company has created over 30 learning programs and three interactive games, which provide age specific teaching materials and are available online for parents, teachers, and students to download for free. This organization provides further support to schools by encouraging employees to visit schools and partner with teachers to educate the youth. The program has led to an increase in interest in the STEM field, helping build a strong base of future talent in the industry. The website is currently accessible to about 5,000 schools and 2.5 million students.
- **ThyssenKrupp AG** partners with the Technical University of Dortmund in Germany to enable students to learn about the interactions between theory and practice. This includes an extracurricular training events program which offers students a combination of theory taught by professors and practice illustrated by speakers from ThyssenKrupp on topics such as leadership, project management and human resources development. The ThyssenKrupp Manager Cup, which now involves up to 600 students, is also contested every year. The management games are held over a period of one and a half months; cash prizes and the opportunity

to attend a management training course await the winning teams. This partnership helps to ensure a robust talent pipeline for the company and visibility among both students and universities.

SDG 5

Achieve gender equality and empower all women and girls



5 GENDER
EQUALITY

OPPORTUNITIES FOR SHARED VALUE

- Adapt manufacturing **plant facilities, processes and culture** to support an increase in recruitment, development and retention of women employees.
- Identify and include more **women-owned businesses** in the manufacturing supply chain, and help to develop their capacity as needed.
- *Increase the share of **women on company boards and in senior roles**, and invest in policies and programs that support women in the workforce and encourage organizations in the value chain to do the same.*

LEADING BY EXAMPLE

- **DBL Group** implemented the 'Women in Factories Initiative' program of Walmart with technical support from the NGO CARE. The aim of this program was to create awareness about the rights of women in the workplace, including access to basic facilities and proper evaluation. In addition, the program supports women workers to move into supervisory roles. Implementation support was provided by the NGO Sheva. The primary benefit for the company is decreased absenteeism and increased productivity. The success of the program has encouraged the company to expand to other units, replicating key elements to ensure the sustainability of the program.
- **Tata Steel** has created a 'Women Empowerment Cell', comprising members of management and junior staff, including unionized female employees. Their role is to monitor women's issues within the company and organize needs based training for female employees. The program targets female employees from disadvantaged backgrounds for this training, with the aim of empowering them in the workplace. The company has also established a Complaint Redressal Committee, which deals with complaints of sexual harassment and provides mechanisms to address grievances.



- **Volkswagen AG** is aiming to have 30% women at all levels of the management hierarchy in Germany. In 2014, women accounted for around 22% of all apprentices in industrial or technical areas. To increase this number, the company specifically targets the recruitment of talented women, for example through the nationwide “Girls Day” which offers young women the opportunity to experience what a career with Volkswagen can offer. Additionally, the “Lower Saxony Technikum” is a scheme in which Volkswagen offers female students a six month internship designed to stimulate their interest in studying a technical subject. The company has also set up mentoring programs for women and has established childcare facilities within or near the company in multiple locations.
- **Xerox** has introduced the “Wilson Rule,” named after the company’s first CEO Joseph Wilson, which will require that women and minorities be among the final pool of qualified candidates for every open management position in the U.S. and among the finalists outside the U.S.A.. The company hopes that this rule will help drive diverse representation at all levels of management. This policy was announced at White House Demo Day in 2015, and was referenced by President Obama.



5 GENDER EQUALITY



SDG 6

Ensure availability and sustainable management of water and sanitation for all



6 CLEAN WATER AND SANITATION

OPPORTUNITIES FOR SHARED VALUE

- Reduce water consumption by implementing **closed loop** manufacturing processes and replacing wet-machining with **dry-machining processes**.
- Improve **water treatment** facilities and processes to treat, recycle and reuse wastewater and effluent in manufacturing processes.
- Invest in **precision agriculture equipment**, such as drip irrigation, that minimizes water use. (Agriculture accounts for 70% of global accessible freshwater consumption and about 15-35% of this use is estimated to be unsustainable and wasted.)
- Integrate **water recycling** and grey water utilization into production systems.
- Where communities surrounding a manufacturing facility have limited access to water, integrate **community access to water** within production facility design.
- Develop and manufacture reliable, **low cost water pumps and sanitation** technology which are adapted to the needs of low income communities in rural areas and to high density urban areas.
- Engage in **collective action** approaches to water stewardship and disclosure, such as the *CEO Water Mandate* and the *Water Action Hub*, which are platforms to unite companies, Governments, NGOs, and other stakeholders on a range of critical water projects in specific river basins around the planet.
- Sign the **WASH pledge** of the World Business Council for Sustainable Development which calls on companies to **implement access to safe water, sanitation and hygiene at the workplace**.

LEADING BY EXAMPLE

- **ABB Ltd**, has committed to reduce absolute water use by 25% between 2013 and 2020 at facilities in watersheds with extremely high, high and medium-high baseline water stress. The company mapped its facilities using the World Business Council for Sustainable Development's Global Water Tool which identified 229

facilities in extremely high to medium-high water stress areas. Although these comprise close to 50% of ABB's facilities and employee headcount, they accounted for only 33% of ABB's global water withdrawal in 2015. Many of the selected facilities have already initiated activities to reduce their water withdrawals and improve



Photo: Eric Miller/World Bank

their water efficiency. Some have redesigned processes to treat, recycle and reuse water, while others have made significant investments in new systems to reduce water consumption. For example, in 2015 ABB installed a fully closed loop process for the water cooling system at its measurement products facility in Occuccio (Italy) which uses significant amounts of water to cool machinery. Changing from a continuous-flow open loop system to closed loop reduced water use at this facility by 30%.

- **Ambuja Cements Ltd** has been working on Water Resource Management since 1993 to enhance water resources in communities around all its plants across India. To fulfil its motive to ‘give back more than we take’, ACF has worked on rejuvenation of water resources, accessibility of quality drinking water and environmental protection. Initiatives include its Roof Rain Water Harvesting System, micro irrigation, interlinking of canals and mined out pits, salinity ingress mitigation in coastal Gujarat by promotion of check dams, low-water intensive crops, renovation of ponds and deepening of wells, revival of khadins (water harvesting systems), reverse osmosis plants, and watershed management. These programs have reached over 400,000 people throughout the country. ACF has improved the quality of land, water resources, agricultural productivity, livestock, biodiversity and the general lifestyle and livelihood in the

community. In 2014, ACL overall has been certified to be four times water positive.

- **Areva**, a French industrial conglomerate, has installed a desalination plant in Wlotzkasbaken on the Namibian coast, to provide clean water to both the country's uranium mines and to local communities for domestic and industrial use. The plant is the first of its kind to be built in Southern Africa and it can supply all the water for Areva's Trekkopje uranium mine which is located in the desert. The plant removes salt from seawater taken from the Atlantic Ocean thereby eliminating the need to pump water from aquifers in order to preserve the country's groundwater reserves. A 48-km long aqueduct can carry 20 million cubic metres of potable water per year. AREVA Namibia and the plant operator AVENG Water encourage local and foreign stakeholders to visit the Erongo desalination plant and learn more about the process of producing potable water from seawater which involves ultrafiltration and reverse osmosis.
- **Daimler AG** has introduced a “zero discharge” policy in its new plant in Chennai in southern India. It channels water through a complex system of pipes, pumps, filters, and evaporators in a closed loop and it is continually reconditioned, with no water leaving the plant via a sewer line. The plant also aims to keep the natural water cycle intact as far as possible, with most of the water required for



6 CLEAN WATER AND SANITATION

production coming from company-owned wells. To make up for the water taken from the wells, Daimler has connected the downpipes from the roofs to dry wells, so that unpolluted rainwater is fed directly back into the groundwater, with artificial ponds for monsoon season and special retainer systems to protect groundwater in the event of a fire.

- **Ford** reduced its total global water use by 62% between 2000 and 2014, or more than 10 billion gallons (equivalent to the water used for 1 billion five-minute showers). It also exceeded its global goal to reduce water use per vehicle by 30%, two years ahead of its 2015 target. It accomplished this by cutting the water it uses in everything from cooling towers, to washing parts, to paint operations. Ford has invested in numerous water-reduction technologies and process improvements. These include membrane biological reactors and reverse-osmosis processes to recycle water from on-site wastewater treatment plants in more arid regions, as well as Minimum Quantity Lubrication which uses a ‘dry-machining’ process to lubricate



6 CLEAN WATER AND SANITATION

cutting tools with a very small amount of oil (rather than the conventional “wet-machining” process that required large amounts of metal-working fluids and water to cool and lubricate the tools).

- **Hitachi** manufacturers water treatment equipment for use in plants, factors and power stations, to ensure wastewater from industrial production does not cause pollution, and it is treated and recycled in a closed system to conserve diverted water. Hitachi’s solutions are used in automotive, steel, paper and pulp plants, as well as across a wide range of other industries.
- **Intel** has invested more than US\$ 220 million in water conservation programs at its global facilities since 1998, saving over 48 billion gallons of water. Intel has been able to decrease the amount of water required to create the ultra-pure water used to clean silicon wafers during fabrication. After it uses ultra-pure water to clean wafers, the water is suitable for industrial purposes, irrigation, and many other needs. Intel’s factories are equipped with complex rinse water collection systems, with separate drains for collecting lightly contaminated wastewater for reuse. With this reuse strategy, the company harvests as much water from its manufacturing processes as possible and directs it to equipment such as cooling towers and scrubbers. In addition, at some locations Intel has arrangements to take back

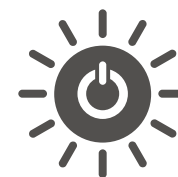
grey water from local municipal water treatment operations for use at its campuses. In 2014, Intel internally recycled approximately 3.9 billion gallons of water, equivalent to about 47% of its total water withdrawals for the year.

- **Marubeni Corporation** has supplied South Africa with drainage treatment plant facilities capable of returning mine drainage to a purity level that will allow it to be used for daily living, by employing reverse osmosis membrane technology. These facilities were supplied through an agreement with Rand Water, South Africa’s largest government-owned water utility. This project will help improve the standard of living for people in South Africa while at the same time making it easier for Japanese companies to develop new environmental-area business models in the future.



SDG 7

Ensure access to affordable, reliable, sustainable and modern energy for all



7 AFFORDABLE AND CLEAN ENERGY

OPPORTUNITIES FOR SHARED VALUE

- Develop **energy infrastructure and technologies** that make renewable energy (e.g. solar and wind) a more compelling economic proposition by increasing reliability, increasing storage capacity and reducing cost.
- Develop more efficient **microgrid technology** capable of integrating renewable energy sources to bring affordable, renewable energy to rural and marginalised communities.
- Develop and market industrial **machinery and vehicles**, vessels and aircraft that run efficiently on sustainable energy sources.
- Encourage and support **suppliers** to increase the proportion of their energy coming from renewable sources.
- *Increase the proportion of **energy consumed from renewable sources** through the company's direct operations and encourage suppliers to do the same. For instance, join the **RE 100** and pledge to move towards 100% renewable power.*

LEADING BY EXAMPLE

- **ABB Ltd.** is a pioneer in microgrids. In April 2016 ABB announced a new innovation building on Emax 2, which it describes as the first ever combined circuit breaker and power manager. The new software-based innovation for the Emax 2 smart circuit breaker makes microgrid architectures simpler and more cost-effective than ever before. The new upgrades combine advanced protection, programmable logic, full connectivity, easy integration and comprehensive microgrid energy management in one device. ABB has executed 30 microgrid projects globally which coordinate

distributed energy resources, integrating renewables with conventional power sources, networking with the grid or operating self-sufficiently. Low-voltage microgrids are helping accelerate the roll out of renewable energy by integrating small-scale wind or solar energy production of up to 4MW with battery energy storage systems.

- **Airbus Group** is supporting the development of sustainable fuels made from biomass feedstock that, through their lifecycle, emit less CO₂ than conventional fossil fuels. The Group has

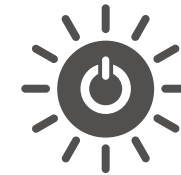


Photo: Curt Carnemark/World Bank

been working with a broad range of partners – universities, farmers, airlines, refineries and standard-setting organizations – to act as an agent of change, helping to develop value chains that produce ‘drop-in’ sustainable fuels that today’s aircraft can burn without modification. Airbus aims to be a catalyst, sparking the search for production of affordable sustainable fuels, in sufficient commercial quantities to help the aviation industry reach its goals for minimizing greenhouse gas emissions. Airbus currently has development partnerships in place in Spain, Qatar, Brazil, Australia, Malaysia and China.

- **Caterpillar** entered a strategic alliance in 2015 with First Solar to develop and distribute Cat-branded photovoltaic modules for incorporation into microgrid systems that can be utilized anywhere from remote villages to mining operations. This innovative technology will provide power to remote places where, before now, it’s been either unavailable or unreliable. Caterpillar is also rapidly progressing energy storage systems which allow customers to capture surplus renewable energy and store it for later use. For example, leveraging its bi-directional inverter technology developed for mining trucks and hybrid tractors, Caterpillar offers a wide range of energy storage technologies, ranging from ultracapacitors for short duration storage to long duration metal-air energy storage products.

- **Dangote** has entered into a partnership to commit US\$5 billion in investment towards new energy infrastructure in Nigeria. The energy projects will have a particular focus on power, transmission, and pipeline projects and will work to achieve Nigeria’s generation capacity target of 40,000 mW by 2020. Through this partnership, the companies hope to “change people’s way of life, increase economic growth, and do very well for investors too.”
- **Hitachi** has applied its IT expertise to contribute to the development of infrastructure which provides a stable energy supply. In many countries, grid operators are pursuing more robust wide-area interconnection with the aim of liberalising energy markets and improving reliability. High-voltage direct current (HVDC) transmission systems convert electricity to direct current before transmission, reducing electricity losses, facility sizes, and construction costs, while expanding access to electricity nationwide. With growing needs for HVDC in the Japanese market, in 2014 Hitachi formed a joint venture with Swiss company ABB (a leading power and automation group) to provide ABB’s latest technology to HDVC projects in Japan where Hitachi is the main contractor.



7 AFFORDABLE AND CLEAN ENERGY



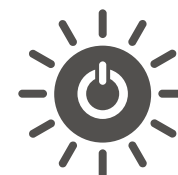
- **ITOCHU** Corporation is developing businesses in energy management and smart infrastructure utilizing IT, under the ecoFORTE brand and in collaboration with partners inside and outside of Japan. Given the issue of intermittent rises in power charges in recent years, reducing power consumption has been an urgent task for the corporate sector. ecoFORTE's capabilities extend from tracking energy use and discovering issues, to executing solutions with automatic control. As such, it provides a mechanism for reducing energy use, even without any specialized knowledge. Recently, the company made ecoFORTE easier to introduce in small and midsize commercial facilities, by offering more compact, low-priced systems.

- **Royal Philips** has developed Community Light Centers, which enable social and economic development after dark for communities off the grid throughout Africa. These centers measure 1000 meters squared, and obtain their energy through the use of solar powered LED lighting technology made by the company. By the end of 2016, the company hopes to open 100 community light centers throughout Africa, along with 30 in Latin America, improving living standards and providing surplus energy to enable small business creation. Furthermore, the company has

developed LED Lantern Solutions to prevent women and children from inhaling smoke from indoor kerosene lamps and wood fires. The annual costs for these lanterns is a fraction of the average and provides 10 times longer lasting energy.

- **Sulzer**, a Swiss industrial engineering and manufacturing firm, is a leading manufacturer and service provider of pumps and mass transfer equipment that are critical for the newly developed carbon capture and storage technologies. Sulzer has developed highly efficient separation packings to capture carbon dioxide at their point of origin. Beyond pumps for capturing, high-performance pumps reliably produce the high pressures needed to transport the captured and compressed carbon dioxide. These high-pressure pumps also inject the carbon dioxide safely into depleted gas reservoirs, saline formation, or unminable coal beds for long-term storage. Sulzer also manufactures pumps that cover all major processes in thermal solar-power plants. These include pumps to transport the oil that has been heated by sunrays reflected through parabolic mirrors and pumps to move molten salt that is used as thermal storage and that can reach temperatures of up to 600 °C.

- **Sumitomo Corporation** has developed a new energy management model using electric power storage systems with the ultimate goal of creating a new business, especially for enabling rapid and deep penetration of renewable energies. Currently, power storage is very costly, but the company hopes to minimize costs by re-using electric vehicle (EV) batteries once they have completed their service life in vehicles. In 2013, Sumitomo Corporation commenced an experimental trial in partnership with 4R Energy Corporation (a joint business with Nissan Motor Co., Ltd.) to verify a large-scale power storage system utilizing reused EV batteries in Yumeshima, Osaka in Japan. Technological verification of the system, the first of its kind in the world, was achieved. In 2015, Sumitomo Corporation, in collaboration with the local government, expanded the scale of the design used for this experimental trial and constructed highly economical power storage systems by re-using EV batteries to accelerate introducing renewable energy as much as possible in Koshikishima Islands, Satsumasendai. This project initiated the first case of the re-used EV battery storage system in the real electric power system and contributing power supply-demand management for the grid stability.



7 AFFORDABLE AND CLEAN ENERGY

SDG 8

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all



8 DECENT WORK AND ECONOMIC GROWTH

OPPORTUNITIES FOR SHARED VALUE

- Increase **local sourcing and manufacturing** in low and middle income countries, where viable, to reduce extreme poverty and lift the local economies.
- Promote high standards of **health and safety** in manufacturing facilities and extraction sites, encouraging employees to take personal and collective responsibility for creating a safe working environment.
- Invest in technologies that reduce the risk of human error and **accidents** in production.
- Set **supplier standards** that require suppliers to uphold labour rights (including equal opportunities, equal pay for equal work, rights of migrant workers, and safe working conditions) and support their implementation through supplier training and monitoring.
- **Integrate small-scale producers of component parts** into the supply chain and provide them with support such as training, connections to supplier networks for lower cost joint procurement, and access to finance.
- Prioritize eradication of modern day **slavery and child labor** in production supply chains.
- Provide targeted **internships** for young people from disadvantaged backgrounds in order to promote social mobility whilst also enhancing company performance through increased workforce diversity.
- Create opportunities for lower paid workers to develop their **skills** and gain access to improved professional opportunities, both within and outside of the industrial manufacturing sector.

LEADING BY EXAMPLE

- Since 2007, **BMW** Group has continuously increased the number of its locally produced car models. With a strong portfolio of locally produced cars, the time was appropriate for BMW to further strengthen its commitment to the Indian market by increasing the level of localization at BMW

Plant Chennai. BMW partnered with Indian auto component suppliers to source major components like engine and gearbox; axles; door panels; wiring harness; exhaust systems; heating, ventilating, air-conditioning and cooling modules and seats. This helped BMW increase the localization level by up





8 DECENT WORK AND ECONOMIC GROWTH

to 50%. This decision benefits BMW in terms of cost optimization, value addition and flexibility while at the same time creating business and profitability for its suppliers.

- **Ford** has implemented a training program to promote responsible working conditions in its supply chain. The program is based on one-day interactive workshops involving multiple suppliers, and is targeted at human resources, health and safety, and legal managers within supplier companies. Each participant is expected to ‘cascade’ relevant training materials to personnel within their own companies and to their own direct suppliers within four months of the workshop. This resulted in the formation of the Automotive Industry Action Group (AIAG), through which car manufacturers from North America, Europe and Asia have developed common guidance statements on working conditions. The company estimates that its training activity (carried out both unilaterally and in conjunction with the AIAG) has reached over 2,900 supplier representatives – and been ‘cascaded’ to around 25,000 supplier managers, 485,000 workers and 100,000 sub-tier supplier companies.

- **Gestamp**, a designer and manufacturer of metal automotive components, is continuing to innovate around its firmly established health and safety policies, offering solutions to the challenges which arise in its manufacturing facilities. One example is a project that allowed the company to eliminate one of the most significant risks associated with moving cranes with heavy loads. Working with several engineering companies and the involvement of some of the Group’s own plants, Gestamp developed a special device which can detect and stop the movement of a lifting crane when loads are not properly aligned, preventing accidents from unbalanced loads. This device can be installed on any crane, may be delivered anywhere in the world, is easy to handle, has a reasonable cost and is certified with the EC safety mark.

- **Hewlett-Packard (HP)** expanded its supply chain requirements in 2014, taking major steps toward preventing exploitative labor practices and forced labor. HP was the first IT company to require direct employment of foreign migrant workers in the company’s supply chain through the HP Supply Chain Foreign Migrant Worker

Standard. By insisting on direct employment, the company can better monitor and prevent issues commonly associated with migrant workers, such as retention of passports or personal documentation and worker paid recruitment fees.

- **Hyundai** supports small-scale suppliers in its supply chain as part of its pursuit of mutual growth, helping them to become more efficient, sustainable and competitive. Hyundai’s support includes providing small and medium size suppliers with liquid assets to cover the cost of delivering goods and reducing suppliers’ purchasing costs through use of joint contracts. Hyundai also extends loans and other financial support to suppliers, helping them to normalize their regular operations, improve productivity and product quality, and make facility investments. In addition, Hyundai extends voluntary technical guidance and support developed for Tier 1 suppliers to smaller Tier 2 suppliers; this is mostly delivered by Hyundai retirees over three to twelve months on site with the supplier.
- **Krusell Co. Ltd** in Thailand believes that employees should be provided with sustainable and fair economic compensation without the need for overtime hours. Krusell



8 DECENT WORK AND ECONOMIC GROWTH

has adopted policies in line with SA-8000 (a workplace certification standard) and has capped overtime to a maximum of twelve hours per week. In addition to this, Krusell has established higher base wages and performance based incentives. This additional cost has been absorbed by a reduction in costs from uncapped overtime hours. This change of policy creates a win-win situation between the company and its valued employees, in addition to promoting sustainable development.

- **Sandvik AB**, a high-technology engineering group, has developed AutoMine, a mine automation system, which enables mine operators to work in a surface control room, allowing them to move from hazardous areas to a safer environment. This system also allows the ore bodies to be effectively utilized, thereby minimizing potential loss, and eliminating noise, vibrations and dust. In extreme conditions, the operator may be located far away from the mine site, thus eliminating fly-in fly-out procedures.
- **Sulzer** has implemented a Safe Behavior Program designed to foster a team-oriented approach to safety. It focuses on developing safety leadership as well as employee empowerment. The change program aims to anchor safety in Sulzer employees' habits, to develop a

preventive safety culture (even in a challenging market environment), and to offer the necessary framework and tools to empower employees on all levels. The core behaviors of the program are observation, intervention and responsibility. The Safe Behaviour Programme not only encourages employees to act safely at the workplace, but also in their private lives. In 2015, the Safe Behaviour Programme enabled Sulzer to reach an accident frequency rate (AFR) below two cases per million working hours, the lowest AFR ever in its history, and in general Sulzer continued to decrease the severity of its accidents. Sulzer remains committed to pursuing its ultimate goal of zero accidents.

- **Vedanta Resources** focuses on hiring, developing and retaining talent from local communities. In 2015 the total percentage of senior management who were locally hired included 87% in India, 67% in Zambia, 100% in Ireland and 75% in South Africa. Vedanta finds it beneficial to hire people who understand the local market and can engage effectively with contractors and suppliers. Ensuring managers are from the local area is particularly important in helping the company relate to the issues faced by neighbouring communities, thus connecting Vedanta's business and sustainability strategies.

- **Volkswagen AG's** growth strategy prioritises local production in key sales markets. Local production contributes to economic development by creating skilled jobs and attracting supplier firms to locate in the area. For example, since a Volkswagen location was set up in Pune, India, 69 new supplier companies have been founded, creating some 13,500 direct and indirect jobs. Localization helps the company open up new markets, where specific customer needs are observed and products are adapted to meet local requirements. Low logistics costs, procurement prices in line with local market conditions, elimination of import duties and immunity from volatile exchange rates also contribute to the competitiveness of the company's brand.

SDG 9

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

OPPORTUNITIES FOR SHARED VALUE

- Collaborate with governments and other companies to create **industrial zones** which unlock complementary investments in infrastructure, technology and production.
- Research, develop and manufacture more environmentally sensitive construction material **alternatives to traditional cement and concrete products**, and develop improved methods of reusing by-products and waste from building materials (such as processed slag).
- Develop innovative financing strategies to enable people on low incomes to buy building materials (such as cement) through affordable **microloans**.
- **Engage with governments** in high-growth markets to discuss ways in which more sustainable building products, transportation solutions and manufacturing techniques can help develop local infrastructure and economies, also thereby creating new markets for products.

LEADING BY EXAMPLE

- **Atlas Copco** is cooperating with automotive manufacturers to reduce the weight of their vehicles, resulting in lower fuel consumption. Tougher emissions legislation is prompting the automakers to make vehicles with aluminium instead of steel to reduce weight. Welding, the traditional assembly method for steel, does not work well with aluminium. Through Atlas Copco's SCA and Henrob units, it is providing cutting-edge assembly technologies using adhesive dispensing and riveting systems.
- **Atlas Copco** is one of the largest producers of air compressors and industrial facilities can typically save up to 10% on their total energy bills by using its compressors, which are industry leading in efficiency. This can have a significant environmental benefit given that most manufacturers, food processing plants, construction sites and hospitals use compressed air. In 2013 Atlas Copco introduced the VSD+ compressor which uses only half the energy consumed by traditional compressors, is a compact size and produces lower noise levels.



Photo: Jim Pickerell/World Bank

In 2016 the company is rolling out bigger versions of the VSD+ compressor. Of further environmental benefit, Atlas Copco designs its products such as stationary compressors, drill rigs, hydraulic breakers and industrial tools so that they can be returned, refurbished and resold as used equipment.

- **Cemex** has created the program Mejora tu Calle to help communities and governments collaborate to improve neighborhoods using its cement products. Through this program, the company provides microloans to community members to help fund the pavement of streets and sidewalks with cement. By combining community contributions with government funding, most projects are completed in 70 weeks, rather than the average of 10 years in low-income neighborhoods. As a result of the program, property values and incomes rise in the communities that Mejora tu Calle serves. Since inception, more than 35,000 microloans have been allocated to finance paving over 400,000 square meters, benefiting more than 7000 low-income families. The program has the potential to expand into 50 major cities in Mexico, and ultimately replicate its process throughout Latin America.
- **Hewlett-Packard** announced its new Blended Reality ecosystem in 2014, including the innovative new personal computing system called Sprout and Multi Jet Fusion, a new commercial 3D printer technology. This breakthrough has the potential to accelerate the adoption of 3D design and hardware innovation, which could contribute to a digital transformation of manufacturing and help to enable the circular economy. This disruptive technology may improve materials efficiency by streamlining the prototyping process, improving the economics of short-run manufacturing, and avoiding waste associated with mass production. It also enables superior designs that are feasible only using “additive manufacturing” techniques. By making it possible to produce individual replacement parts locally, rapidly, and inexpensively, 3D printing can extend the lifespan of some products. 3D printing may also increase the recyclability and value of product materials at end of life by reducing the number of material types used in manufacturing.
- **Hyundai**'s R&D Tech Festival comprises a 'R&D Tech Day' and 'R&D Motor Show'. On the R&D Tech Day, suppliers exhibit their new technologies (including several inventions in the powertrain and eco-friendly sectors), and share their experience and know-how through seminars. At the R&D

Motor Show, automobiles from many countries are put on display for participants to compare and analyze. The R&D Tech Festival is expected to contribute to the cultivation of a sustainable R&D foundation between Hyundai and its suppliers. The company will continue to explore new ways of motivating more suppliers to share their new technologies and know-how through the festival and encouraging joint progress towards sustainable development.

- **ITOCHU** has been exporting blast furnace slag for over twenty years. Blast furnace slag, a by-product from iron and steel manufacturing, is commonly perceived as an eco-friendly product being used as a cement alternative and thus helps save natural resources such as cement raw materials and limestone. It also enables concrete manufacturers to reduce energy consumption and CO2 emissions by approximately 40% compared to producing concrete only from cement. It is now exported to more than ten countries in Asia, Latin America and other regions. ITOCHU handles the largest volume among the trading companies and is proud of contributing to the effective use of resources on a global scale.



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

- **MAN SE**, a German mechanical engineering company, has launched its first carbon-neutral commercial vehicle assembly plant, which runs exclusively on regenerative energy. For this purpose, a photovoltaic unit spanning 6,300 square meters was mounted on the roofs of the production hall in Pinetown, South Africa. In addition to annual savings of 860 tons of CO₂, the new solar power plant generates up to 810,000 kWh of electricity a year, which leaves a surplus that is fed into the local power grid. The cost of the unit (about EUR730,000) should be amortized with 6 to 7 years.
- **Sandvik AB** focuses on developing innovative solutions that boost productivity, enhance energy efficiency, improve the utilization of resources and increase health and safety. For example, it uses Duratomic technology to provide increased toughness, heat and wear resistance and the chemical inertness to increase tool life. Additionally, the company has developed Sandvik Hiflex™ a martensitic chromium strip steel-grade with extremely high fatigue strength, designed to meet

the tough demands on compressor valves brought about by trends for smaller, highly energy efficient compressors such as those found in refrigerators and cars. Further, the company's GC4315 grades deliver real benefits for automotive and oil and gas customers through improved tool life and production reliability, as well as reduced cycle times for operations.

- **Tata Steel's** processed steel slag has been accredited for use in road making, making it the first steel Company in India to have obtained this approval. Tata Steel has been aggressively working to develop LD slag as a legitimate, cost effective and, most importantly, green product. This accreditation allows Tata Steel to supply processed steel slag on a trial basis for the construction of approved stretches in National and State highways. In its test certificate, Central Road Research Institute has recommended Tata Steel's LD slag as a technically satisfactory material, which can preserve depleting natural aggregate.



SDG 10

Reduce inequality within and among countries

**10 REDUCED INEQUALITIES****OPPORTUNITIES FOR SHARED VALUE**

- Create opportunities for lower paid workers to develop their **skills** and gain access to improved employment opportunities, both within and outside of the industrial manufacturing sector.
- Pay staff a **living wage** and encourage other companies within the value chain to also pay living wages.
- Adopt **equal opportunity** policies prohibiting discrimination in all forms and encourage others in the value chain to do the same.

LEADING BY EXAMPLE

- **Cemex** provides all its employees around the world with a living wage, whilst protecting their labor rights in a safe and respectful work environment.
- **Ford** launched its supplier diversity development program in 1978 with the goals of supporting minority and women-owned businesses, creating business opportunities for diverse suppliers to grow into profitable enterprises, and further strengthening the Ford supplier network to reflect the company's workforce and customer base. Ford's diverse suppliers play an important role in the company's revitalized and expanding portfolio of high-quality, safe, fuel-efficient products equipped with smart technologies. In 2014, Ford purchased US\$6.75 billion in goods and services (representing 13.3% of its total global spend) from approximately 200 minority owned suppliers, and US\$2.1 billion (representing 3.4% of its global spend) from more than 150 women owned businesses.
- **General Motors (GM)** has 12 Employee Resource Groups which provide a forum for employees to share common concerns and experiences, gain professional development support and engage in local communities. These Groups include the African Ancestry Network, Asian Indian Affinity Group, Chinese Employee Resource Group, GM Hispanic Initiative Team, Native American Cultural Network, and People With Disabilities. All Employee Resource Groups work towards making GM a workplace of choice and they provide insights that help GM better understand diverse and emerging consumer markets. Each Employee Resource Group has a



business plan tied to talent acquisition, talent development, community outreach and business support.

- **Hewlett-Packard (HP)** has achieved a greater than 85% (or Level 2) level of compliance with South Africa’s Department of Trade and Industry’s Broad Based Black Economic Empowerment (BBBEE) Codes of Good Practice. It has established the HP Business Institute which supports the development of small and medium enterprises (SME) in the IT sector in South Africa. In addition, the HP Business Institute facilitates courses to develop the skills of existing SME employees and recent graduates pursuing careers in the IT sector, as well as training of existing employees placed in short-term skills programs. HP is also actively recruiting Historically Disadvantaged South Africans so that the composition of HP South Africa staff resembles the demographics of the country, offering capacity building in the form of IT education within the greater community and ensuring that a significant amount of procurement is from BBBEE companies.
- **Siemens AG** has adapted its German apprenticeship programme to accommodate young people with below-average school performance or who lack basic competencies, often due to their background as migrants. The programme builds skills and increases employability among individuals who would not otherwise be able to receive

vocational training, while at the same time fostering diversity and generating highly motivated and skilled employees for the company.

- **Volkswagen AG** is committed to supporting employees with performance impairment or disabilities. People with disabilities made up 7.4% of the company’s total workforce in 2014, well above the German statutory quota of 5%. Around 55% of employees with disabilities work in production, while 45% work in support. In addition, Volkswagen is helping boost employment for people with disabilities outside the company by placing orders worth more than EUR 20.9 million with workshops employing people with disabilities.



10 REDUCED INEQUALITIES



SDG 11

Make cities and human settlements inclusive, safe, resilient and sustainable



11 SUSTAINABLE CITIES AND COMMUNITIES

OPPORTUNITIES FOR SHARED VALUE

- Develop products which improve the energy efficiency of people's **homes and offices** includes lighting, ventilation, heating and air-conditioning.
- Develop innovative, **low-cost construction** materials to address housing needs in developing markets.
- Develop and market more **sustainable transport** solutions, particularly public buses and trains.
- **Collaborate** with governments and other companies to bring greater connectivity, energy efficiency and safety to urban communities.
- Build with natural or **green infrastructure** to create societal and ecosystem value while optimizing operational efficiencies.

LEADING BY EXAMPLE

- **ABB Ltd.** has developed a new automated fast-charging system which removes the main hurdles to the more widespread use of electric buses. With a typical charging time of 4-6 minutes, the system speeds up the charging process and is easily integrated in existing bus lines, thanks to its automated rooftop connection.
- **ABB Ltd.** presented its voice-operated smart home automation system, ABB-free@home, at a consumer electronics fair in 2015. The system allows users to control over 60 smarthome automation functions, such as lighting, heating, blind control and door communication, with voice commands. This can significantly improve home energy efficiency.
- **Broad Group** has developed a new, cheaper form of steel structure which enables rapid construction of high rise buildings whilst also improving interior air quality. Broad Sustainable Building worked with a team of architects and engineers to develop the prototype which has since been used to construct more than 30 buildings including a 15 storey hotel in six days and a 57 storey tower in 19 days. One of the most appealing features of the design may be its ability to stop 99% of tiny atmospheric



particles called PM2.5 getting inside their buildings (PM2.5 poses a serious health hazard in many cities - at one-twentieth the diameter of a human hair, they're small enough to lodge in the lungs and enter the bloodstream). Also, to demonstrate resilience of the buildings, Broad Group has released footage of a model skyscraper surviving the equivalent of a magnitude nine earthquake.

- **Cemex** has been running its flagship inclusive business, *Patrimonio Hoy*, for over a decade. It was founded to provide low-income families with access to affordable housing by providing finance, building materials, technical advice and logistical support, enabling them to build or expand their homes more quickly and efficiently. This is accomplished through a collaborative network of local company distributors and community-based promoters (mainly women trained and empowered through the program). Started in Mexico, *Patrimonio Hoy* has expanded across more than 100 offices across Latin America from Costa Rica to Columbia, the Dominican Republic and Nicaragua. By 2015, more than 525,000 families had received support from the program and built homes at one-third of the cost and in one-third of the time, through microcredits exceeding US\$300 million.

- At **OSRAM**, a fully owned Siemens subsidiary, a project is under way to develop new technologies and business models to expand access to affordable sustainable energy, water and communication services for people in developing countries. It's WE!Hub (Water and Energy Hub) model is an off-grid power and water purification system for underserved communities in Kenya. Each WE!Hub consists of a decentralized station with a photovoltaic roof that generates power to charge the lanterns and batteries rented to customers. The station operates a water purification scheme and acts as a mobile phone charging station, an Internet café and an information and communications technology (ICT) training room.
- **Siemens AG** helped Taiwan's TAIPEI 101 (the world's tallest building until the opening of the Burj Khalifa in Dubai in 2010) to become the world's tallest green building. Siemens Total Building Solutions (TBS) was enlisted to help the building meet LEED Platinum status requirements, which required a building to be 30% more energy-efficient compared to an average building. Siemens equipped TAIPEI 101 with a comprehensive building automation and energy management system, along with an energy-efficient HVAC (heating, ventilation

and air conditioning) system. TAIPEI 101's temperature and climate is controlled by over 3,400 terminal box controllers, located throughout the building. Every time the temperature in the building is increased by just 1 degree Celsius, energy savings of up to 6% can be calculated. At night time, when temperatures drop – and energy rates are off-peak – the system produces ice, storing it to reduce cooling-load during the day. Other installed components include a sophisticated air volume system, an innovative Osram lighting concept, comprising halogen lamps, fluorescent lamps and 3,800 energy-saving lamps, centrally controlled by Siemens' building automation systems and an air conditioning system, which along with the lighting system, automatically switches off when the building is not inhabited.



11 SUSTAINABLE CITIES AND COMMUNITIES

SDG 12

Ensure sustainable consumption and production patterns



12 RESPONSIBLE CONSUMPTION AND PRODUCTION

OPPORTUNITIES FOR SHARED VALUE

- Design and produce **machinery and vehicles for sale** that consume lower energy and water in use and that generate less effluent, other waste and pollution.
- Factor an **internal carbon price** into capital project decisions.
- Apply the concept of a circular economy by designing products with **end of product lifecycle** reuse and recycling in mind.
- Incorporate **innovative efficient technologies**, such as 3D printing, into manufacturing processes to reduce waste from long-run production and prototyping.
- Develop and implement improved processes to **reduce, reuse and recycle** water, raw materials, non-renewable minerals, other inputs, by-products and waste.
- Identify and adopt new technologies and process improvements to **reduce fossil fuel combustion** in industrial manufacturing plants.
- Increase **energy efficiency** in industrial manufacturing plants and across distribution networks.
- Source **materials with lower embedded energy**.

LEADING BY EXAMPLE

- **Apollo Tyres** is investing in innovative technologies to increase the sustainability of its tyres. For example, it is increasingly using silica as reinforcement material in developing new tyres, in place of carbon black which is produced by burning petroleum oil. In addition to reducing use of fossil fuel in the manufacturing process, tyres with silica reinforcement give better fuel efficiency

to vehicles. Ford’s upcoming vehicles will be using this product range, Apollo 3G Maxx. Apollo Tyres is also innovating with project EU PEARLS which is developing alternative sources of natural rubber from plants such as Dandelion and Guayule, responding to the shortage of natural rubber outside India and its price volatility.



- **Fuji Xerox Co., Ltd.** operates a “closed loop” integrated recycling system for its products, in which products released to the market are collected back after use, and the parts are either reused or recycled, thus reducing waste sent to landfill. The company has introduced recycling systems and take-back programs across Japan, Thailand, Taiwan, China, Korea, Australia, and New Zealand. Since 2010, the company has maintained a recycling rate of at least 99.5% across its operations.
- **Gestamp**, a designer and manufacturer of automotive components and systems, focuses on reducing weight and increasing passenger safety, while improving comfort, durability, quality and end of product life recyclability. Gestamp has developed many innovations in steel vehicle body structures, applying techniques such as hot stamping, rolling and hydro-forming, and using high strength materials and products with controlled crumple zones. These include a hot stamping patented process called ‘Tailored Material Property’ which enables different levels of hardness to be achieved in different zones of the same crossbeam, controlling the different cooling temperatures during the hardening process. By creating softer, easily crumpled zones in each part, the crumpling of the car structure can be controlled, which ensures better crash performance, contributing to the safety of vehicle occupants. The Tailored Material Property design process also reduces product weight by 20% when compared with other products made using traditional methods, thereby reducing fuel consumption and consequently greenhouse gas emissions.
- **Grupo ENGEVIX**, a Brazilian Construction company, has developed programs to maximize the use of materials and reduce the consumption of natural resources. This includes reusing rejected materials (e.g. wood and metal scrap) to build collective equipment protection, machinery protection, sharp edge protectors and furniture. The company also uses recycled water for sanitation and garden irrigation, and it uses solar energy to heat water for bathrooms and kitchens.
- **Hyundai** targets an 85% recycling rate for the plastic, rubber and glass in its end-of-life vehicles, and a 95% recovery rate. The company is also investing in handling and recycling end of life vehicles and pioneering ways to establish a vehicle resource recycling system. Hyundai’s current recycling practices include reuse of plastics produced during car manufacturing to produce wheel guards, undercover and other automobile parts, using technology it has independently developed with its partners. Also, Hyundai has been able to reuse thermoset polyurethane foam in car seats (which is very difficult to reuse) to create materials for other car parts, and it is using it in the mass production of luggage partitions. In order to improve the recycling of hybrid vehicle parts, Hyundai created a manual that provides guidelines for the safe handling of high voltage lithium ion batteries installed in these vehicles, and distributes these manuals to vehicle salvage yards.
- **Mitsui & Co., Ltd.** invested in Sims Metal Management Ltd in 2007, the world’s largest recycler of ferrous and non-ferrous metal and electronics, and in 2015 Mitsui became the largest shareholder. Today, Sims Metal Management has more than 6,000 employees in 270 locations across five continents, with a focus on North America. In addition to the metal scrap business, the company also operates the world’s largest electrical and electronics recovery and recycling business.
- **Outokumpu Oyj**, a Finish producer of stainless steel, focuses on recycled content, the use of by-products to replace natural resources, as well as increasing the energy efficiency of the stainless steel production process which is highly energy intensive. This sustainable approach is supported by key performance indicators which focus on ‘right first time’ processes, monitored monthly. This aims to avoid repeated process steps which result in higher energy use and often result in scrap which has to be brought back for melting, the most energy intensive production step.
- **Royal Philips** has created a Circular Economy and Green Operations Program, focused on creating sustainable consumption and production patterns. In 2014, the company reused 81% of its industrial waste as a result of recycling. The company recognizes the importance of reusing materials, and has also established a Refurbished Systems Program, which results in reduced emissions of CO2, fewer raw materials used, and less energy consumed.



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



12 RESPONSIBLE CONSUMPTION AND PRODUCTION

- **Sandvik AB** has developed a recycling program for used cemented-carbide tools, converting them back into basic raw materials for re-use. The company's recycling processes reduce energy consumption, lower carbon emissions and produce less waste. Both the company and its customers participate in this program; the customer is provided with recycling containers which Sandvik collects when they are full. Making tools from recycled solid carbide requires approximately 70% less energy and around 40% less CO₂ emitted (depending on type of recycling process), compared to using virgin raw materials.
- **Sumitomo Chemical Co. Ltd.** is focused on 'Environment and Energy' as one of its core research and development fields in its current initiatives to develop next-generation businesses. The company's recently developed Co₂ separation technology signifies an important step forward towards fostering a Co₂ membrane separation business which helps integrate sustainability into the company's core business strategy and customer value proposition. With further development of this technology being undertaken for many potential applications, the company will continue to develop technologies that contribute to solving environmental problems and promoting more effective use of energy globally.
- **Tata Steel's** focus on creating value from its by-products and waste led to the formation of its Industrial Byproducts Management Division in 2014. The byproducts generated across the entire steel value chain include coal rejects from the washeries, coal tar, slags, scrap from steel making and rolling mills. Tata Steel applies three levers for maximising waste utilisation: (1) Recover metallics from steel slag; (2) Recycle for in-house consumption; and (3) Develop new markets and applications for LD Slag. Non-metallic products, which are sources of Lime and Magnesium Oxide (MgO), are being used in the Sinter Plant and Blast Furnace. Metallic by-products go to the Sinter Plant while scrap used in the steel making process along with pooled iron.



SDG 13

Take urgent action to combat climate change and its impacts



13 CLIMATE ACTION

OPPORTUNITIES FOR SHARED VALUE

- Identify and evaluate **climate change risks** to the business (such as resource scarcity, resource price volatility, loss of life and property, and business interruption) and take appropriate mitigating and adaptive action.
- Design and implement natural **disaster risk mitigation**, preparedness, response and recovery plans at industrial plants and manufacturing facilities in high-risk locations.
- Set **science based carbon emission targets** in line with the sectoral decarbonisation pathway and encourage suppliers, distributors and customers to do the same.
- Set an internal price on carbon in line with a 2-degree Celsius pathway.
- *Take steps to **measure, reduce and report climate exposure** and progress on actions to confront climate change on an annual basis, continuing to increase the level of transparency and consistency of reporting across the industry sector.*
- *Support high level partnerships and industry associations **advocating** for responsible public policies on climate.*

LEADING BY EXAMPLE

- **Hyundai** undertakes diverse activities to develop ecofriendly cars and reduce the amount of greenhouse gases created during the manufacturing of vehicles. The company has organized a taskforce to deal with climate change, to support each worksite in achieving its greenhouse gas reduction goals, and to facilitate any necessary investments. The company's Business Strategy Planning Division, has an office dedicated to reporting important climate change issues directly to executive management, so that these issues can be reflected in company strategy. In addition, Hyundai is reducing greenhouse gas emissions by developing technology that collects carbon dioxide, and by participating in emissions trading in Korea and overseas.
- **Caterpillar** is innovating to improve and build products that are both valuable to its customers and more sustainable. Examples from 2015 include an upgrade to the Cat® D6K2 grading tractor that improved performance while also reducing fuel consumption, and improvements to the transmission systems of its new generation of medium wheel loaders that result in large fuel savings and less jobsite GHG emissions. Caterpillar is also applying advanced analytics and digital-driven technologies – like Cat® Connect and MineStar™ – to improve worksite efficiency. This means less fuel used, increased productivity and a safer work environment.



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SDG 14

Conserve and sustainably use the oceans, seas and marine resources for sustainable development



14 LIFE BELOW WATER

OPPORTUNITIES FOR SHARED VALUE

- Design pumps and other **machinery for deep sea mining** which minimise the risk of marine spillages and contamination.
- Design **components for marine vessels** that minimise the risk of marine pollution.
- Collaborate with other stakeholders to collect and **utilise marine plastic waste** (such as plastic bottles and discarded fishing nets) in product manufacturing.
- Implement **improved waste treatment systems** to avoid releasing pollutants into the natural environment which could filter back to the oceans and seas.
- Ensure supplier and distributor companies shipping goods by sea adhere to **environmental standards on marine shipping**.

LEADING BY EXAMPLE

- **Interface**, a carpet tile manufacturer, has a carpet tile collection called Net Effect that honors the ocean not only in its aesthetic references but also in a unique and tangible way through a project called Net-Works™. Net-Works provides a source of income for small fishing villages in the Philippines, while cleaning up their beaches and waters of discarded fishing nets that threaten their livelihood and the very precious double barrier reef off their shore. Discarded fishing nets are collected and sold to Interface's trusted yarn supplier and partner,

Aquafil. Since 2011, Aquafil has been re-purposing waste nylon from discarded fishing nets and other sources, including yarn reclaimed through its ReEntry® program, to provide recycled content nylon for Interface carpet tile.



Photo: Arne Hoel/World Bank

SDG 15

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss



15 LIFE ON LAND

OPPORTUNITIES FOR SHARED VALUE

- Only use **wood from certified sustainable sources**.
- Manufacture **printers with environmental features** (such as default duplex printing) which reduce paper usage.
- Develop and manufacture **soil-friendly technology** for heavy agricultural machinery, such as low-pressure tires that stop incremental soil compaction over time.

LEADING BY EXAMPLE

- **Caterpillar** joined an effort in 2015 to focus on restoring natural infrastructure – the forests, prairies, farmlands, wetlands and coastal landscapes. Natural infrastructure improves resilience to natural disasters like storms and floods, improves water quality and removes carbon from the atmosphere to return it to the soil, where it helps plants grow. Cat® products have supported coal mine restoration projects and restored portions of the Florida Everglades in the United States of America. In November 2015, Caterpillar hosted the first major national summit in the United States of diverse stakeholders who have a part to play in natural infrastructure restoration. The summit brought together leaders from engineering,

construction, finance, governments, academia and non-governmental organizations to establish a coordinated effort across these industries to develop and deploy sustainable development solutions. Participants delved into the scientific and business cases for natural infrastructure restoration and brainstormed policies, business models and financing solutions needed to expand the world's natural infrastructure restoration efforts.

- **CENIBRA** owns 250,000 hectares of land, of which 130,000 hectares is planted with eucalyptus, and produces 1.2 million tons of pulp annually. CENIBRA only uses renewable forestry as a raw material for this pulp. As a result, it has acquired international certification from the FSC (Forest



Photo: Jim Pickerell/World Bank

Stewardship Council), which only grants certification to manufacturers that focus efforts on benefiting local communities and protecting the natural environment. Based on extremely rapid virgin wood growth volumes and rigorous production rationalization, CENIBRA has world-leading cost control. CENIBRA is wholly owned by Japanese companies and organizations, which include Oji Holdings Corporation., Ltd., ITOCHU, and 7 other major Japanese paper manufacturers.

- **Mitsui & Co., Ltd.** owns forests at 74 locations throughout Japan, which together total approximately 44,000 hectares. It has a Forest Management Policy which commits the company to act conscientiously in managing its forest holdings, giving full regard to their social significance and maintaining a strong awareness of their environmental value. In 2009 Mitsui obtained Forest Stewardship Certification for all its forests and it is the largest Japanese supplier of domestic



15 LIFE ON LAND

FSC certified wood. Mitsui adapts its approach to cultivation based on zoning of its forest areas into Forests for Regeneration and Harvest (40%) and Natural Forests and Naturally Regenerated Forests (60%). Within these, 10% of the areas are designated as Biodiversity Conservation Forests.

- **Tata Steel** has applied innovative bioengineering methods to reduce runoff from its mining facilities. For example, the passive waste dump slope of its Bamebari Manganese Mine, facing a public road, was barren and arid and its Sukinda Chromite Mine faced a similar problem with stabilization of the slope. A bioengineering method was suggested by experts from IIT, Kharagpur for stabilizing slopes by planting Vetiver bunchgrass (*Chrysopogon Zizanioides*) over the dump slopes. Saplings were planted over 10,000 square meters of the mine dump slope on an experimental basis in June 2013 at both Sukinda and Bamebari. Both sites have since undergone a complete transformation from an arid, barren dump to a green stable dump. This process was horizontally implemented at Tata Steel's Joda West Manganese Mine in 2014-15.

- **Xerox's** 2020 goals include helping to preserve the world's forests and biodiversity. The company works with its customers, suppliers and other stakeholders to support the development of a sustainable paper cycle through paper sourcing guidelines and environmentally sound paper offerings, as well as through products and services that decrease dependency on paper. The "earth smart" feature, has been integrated into the Xerox global print driver, bringing several resource saving settings together at the single click of a button. These features, such as duplex (two-sided printing), n-up (multiple pages per sheet), proof print and toner saving modes, make it easier for customers to make responsible print choices.



SDG 16

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels



16 PEACE, JUSTICE
AND STRONG
INSTITUTIONS

OPPORTUNITIES FOR SHARED VALUE

- Identify and assess risks of **conflict minerals** in supply chains by identifying suppliers of 3TG metals (Tin, Tantalum, Tungsten and Gold) and designing a process of necessary due diligence for those suppliers.
- Apply the UNGC 'A Guide to Traceability: A Practical Approach to Advance Sustainability in Global Supply Chains' as a basis for improving **traceability** of products, parts and materials in the supply chain to ensure reliability of sustainability claims covering human rights, labor, anti-corruption and the environment.
- *Design and implement a robust **anti-bribery and corruption** compliance program.*
- *Demonstrate ethical leadership by publishing a **statement on human rights** consistent with the UN Guiding Principles on Business and Human Rights and sign up to the ten principles of the UN Global Compact.*

LEADING BY EXAMPLE

- **Fluor**, a global engineering construction company, supports external anti-corruption efforts through collective action. Fluor will not tolerate bribery of any form even if it will lose business or encounter delays because of its refusal to do so. It is a founding member of the World Economic Forum's Partnering against Corruption Initiative (PACI), and the Chairman and CEO of Fluor chairs PACI Vanguard which is a community of global CEOs committed to advocating for a stronger anti-corruption agenda. The Chairman and CEO of Fluor has also been

the co-chair of the B20 Task Force on Improving Transparency and Anti-Corruption since inception in 2011, and he chairs the workstream on collective action. Fluor has collaborated with several industry-focused initiatives to develop codes of conduct for small-medium enterprises in the engineering and construction industry, as well as training and other projects to improve ethics and compliance in its industry throughout the world.



Photo: Curt Carnemark/World Bank

- **General Electric** held a series of meetings with NGOs, business leaders, and government officials with respect to reforms in a Southeast Asian country, with a view to addressing issues regarding fair and open procurement, leadership training, the legal environment for responsible investment, and the rule of law. In addition, the company's related foundation has sponsored the provision of legal services by the Senior International Lawyers Program to legal institutions in this country and the participation of government officials in international training on infrastructure development and competitiveness at the Lee Kuan Yew School of Public Policy.
- **Hyundai** aims to do more than just protect itself against legal risks, it also seeks a win-win approach for the automotive industry by promoting a culture of fair trading. In 2014, the company's CEO publicly pledged to promote voluntary fair trade compliance and has created a corporate culture of voluntary compliance, providing training on fair trading practices to new executives and employees, and to staff at relevant departments. The Voluntary Fair Trade Compliance Code of Conduct handbook has been fully revised and shared with all employees.
- **Intel** is addressing the privacy, security, and freedom of expression impacts of information and communications technology through accountability, public policy, collaboration, and education. The company's Privacy by Design and Secure Development Life-cycle processes define actions, deliverables, and checkpoints designed to integrate security and privacy into its products and services to meet product and market expectations.

Its development processes include an analysis of how a product protects against unauthorized access, use, destruction, modification, or disclosure of personal information. As the products and services that Intel offers continue to become more diverse, it tracks and evaluate concerns about how technology products can potentially impact privacy, data security, and human rights—including the possibility that its products may be misused to limit the freedom of expression and human rights of individuals. Intel also advocates for global policies and standards to protect data privacy and security.

- **Sandvik AB** adopted group wide Sustainable Purchasing and Conflict Minerals policies in 2015 to further integrate sustainability in its purchasing processes, to prevent bribery and corruption, ensure compliance with its supplier code of conduct, reduce the environmental footprint and negative social impact of the company's supply base, and ultimately protect and create business value for Sandvik and its business partners. Additionally, the company carried out a Reasonable Country of Origin Enquiry based on the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas in order to identify smelters/refiners associated with Sandvik's supply chain.



16 PEACE, JUSTICE AND STRONG INSTITUTIONS



SDG 17

Strengthen the means of implementation and revitalize the global partnership for sustainable development



17 PARTNERSHIPS FOR THE GOALS

OPPORTUNITIES FOR SHARED VALUE

- Promote business coalitions and partnerships to work with policy makers and provide them relevant information and expertise to pass meaningful, practical environmental regulation.
- Strengthen the link between corporate and societal value creation and align the organization's value creation strategy to the Sustainable Development Goals.
- Adopt good practice principles and guidelines which better align business practices with sustainable development.
- Engage in multi-stakeholder initiatives advancing sustainable development.
- Establish a robust impact measurement framework for corporate, multi-stakeholder partnership and industry level contributions to sustainable development including regular monitoring and transparent evaluation and reporting.
- Collaborate with other industrial manufacturers and stakeholders to provide industry perspectives to Governments, policymakers, legislators and regulators on the sustainable development impact of legislative, regulatory and tax frameworks including recommendations for improvement.

LEADING BY EXAMPLE

- Several industrial manufacturing companies constructively engage in international led processes including the four intergovernmental negotiations which took place in 2015 (i.e. the World Conference on Disaster Risk Reduction, the World Financing for Development Conference, the Summit to Adopt the Sustainable Development Goals, and the United Nations Climate Change Conference).
- Companies within the industrial manufacturing industry have collaborated with each other and with additional stakeholders to develop several good practice initiatives and collaborations. These are demonstrating leadership in aligning the industry with the pursuit of the Sustainable Development Goals.



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