

GREEN ECONOMY ROADMAP

Best practices and calls for collaborations



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Disclaimer

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**Best practice
Experience sharing**

Aipe (Italian Association of Expanded Polystyrene Producers) & PVC Forum Italia (Italian Association of PVC Industry)

Nearly zero-energy buildings: the ‘2-Litre House’

Key alignment(s) with the ten green economy conditions

- Resource efficiency and decoupling
- Life cycle approach
- Integrated environmental, social and economic policy and decision-making

Description

The “Casa 2 litri” (2-Litre House/Passivehouse”) is a project promoted by Aipe and PVC Forum Italy to propose and to share an architectural approach able to construct “Near Zero Energy” buildings.

This project is a shared concept and available to all. It conforms to the most demanding European directives in terms of energy saving. In substance, this approach reconciles bioclimatic principles (such as analysis of the climatic condition, designed of the rooms based on the climatic characteristics...) with the aware choice of using sustainable materials (such as EPS – expanded polystyrene – and PVC for the hyper-insulation of the components) and constructive elements (solar and photovoltaic panels, condensation boiler and/or heat pump, adiabatic heat sources for cooling, controlled ventilation..) to obtain maximum performance.

A pilot project was completed at Ozzano dell’Emilia, near Bologna, in 2009, with the construction of five separate family houses and an Experimental Didactic Centre. The buildings and their performance are being monitored for five years.

The monitoring of energy consumption in the first months of the houses’ life saw a consumption of about 12-15 Kwh/m²/year for heating/refreshing and hot sanitary water, in accordance to the ‘Passive House’ criteria. However, taking into account the contribution from renewable sources, the Ozzano complex ‘production’ covers not only the 12-15 Kwh/m²/year for heating/refreshing and hot water, but also 80% of household electricity needs.

It means that the Ozzano project could be easily considered as the first example of a ‘nearly zero-energy building’, already available 10 years earlier than the target set by the EU. Furthermore the choice of materials made on the basis of their LCAs resulted in a further reduction of 63% of the Global Warming Potential and Gross Energy Requirement deriving from their production. This first “2-Litre House” includes a maintenance/management guide accompanied by life-cycle assessments (LCAs) of used materials.

The same concept has been applied to an industrial warehouse built at San Lazzaro di Savena, near Ozzano. In this case, the average energy consumption for heat and hot water is around 21 Kwh/m²/year, which is an excellent standard for industrial buildings. But what is more important, with solar panels and photovoltaic cells, it also covers at least 60% of its production needs for electricity.

<p><u>Initiating Organization</u></p> <p>Aipe (Italian Association of Expanded Polystyrene Producers): www.aipe.biz</p> <p>PVC Forum Italia (Italian Association of PVC Industry): www.pvcforum.it</p>	<p><u>Geographic Scope</u></p> <p>National (Italy)</p>
<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>An important and innovative aspect of the Ozzano project is the overcoming of the classic 'Passive House' criteria, generally characterised by energy performance only.</p> <p>The constructional approach, in fact, integrates the sustainability criteria:</p> <ul style="list-style-type: none"> ▪ Economic criteria, regulating demand and supply, considering the economic analysis of construction processes and maintenance costs; ▪ Functional criteria, evaluating technical performance, durability, quality of components and internal and external comfort; ▪ Environmental criteria, evaluating the environmental impact of materials and components, energy saving and sustainable use of natural resources. <p>The sustainability of the materials chosen is a fundamental aspect: all the materials have to show a favourable LCA (Life Cycle Assessment) for each application. Furthermore, all the materials utilized in the Ozzano project have to satisfy, together with the technical required performance, increasingly stringent requirements in terms of safety, non-toxicity and eco-compatibility.</p> <p>In addition, the Didactic Centre should become a "Master Class Energy Centre", an important location for conferences and training courses about sustainable building.</p>	<p><u>Type of Partners Involved/Wanted</u></p> <p>Partners involved:</p> <ul style="list-style-type: none"> ▪ PA (Commune of Ozzano dell'Emilia – Bologna) ▪ Industry partners: Members of Aipe and PVC Forum Italy which supplied materials and components ▪ Studio Arkit & Partners (Bologna) that designed the first "2-Litre House" project in Ozzano dell'Emilia

Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success

A new building approach like that embodied by the Ozzano Emilia 'passive house' has, at the core of the project, the goal of exploring new processes, new methodologies, new use of materials and elements whilst utilising everyday materials and simple technologies that anyone could afford. This means building on conceptual innovation, energy efficiency and resource saving, with construction costs comparable to traditional buildings, with significant savings in terms of running costs.

The same constructive approach, here used for residential and industrial buildings, is applicable for other public and private kind of buildings.

With the aim of sharing knowledge and culture, the proposed approach is free and available for everybody and actually, several other projects sharing the same concept are already ongoing in Italy for residences, campus, highway restaurants, SPAs and shopping centres.

Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.

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Alstom

Technology Transfer: Alstom Global Hydropower Technology Centre, Vadodara, India

Key alignment(s) with the ten green economy conditions

- Open and competitive markets
- Finance and investment

Description

India's 2003 Electricity Act restructured the industry, gave states the power to set their own electricity tariffs and required them to set renewable portfolio standards. The National Government also implemented measures to support renewable power, including fiscal incentives such as tax exemptions. India's Eleventh Five Year Plan (2007-2012) targeted capacity additions of almost 80GW, of which nearly 20% was to be hydropower.

In 2004, Alstom's Chairman & CEO, Patrick Kron, visited India for meetings with government ministers and as a result decided to enhance operations in the country. Among other actions the company upgraded its factory in Vadodara to become one of its global engineering and manufacturing centres for hydropower equipment.

The Vadodara factory received a fresh injection of investment in 2006, by which time it employed 600 people and supplied the full range of hydro and mechanical equipment and services. In November 2008, Vadodara was inaugurated as one of the company's Global Hydropower Technology Centres.

Today the Centre continues to expand and currently employs around 1,500 (an increase of around 500 since last year). It includes:

- A manufacturing facility, equipped for machining new stationary components, the repair and servicing of rotors and the assembly of turbines and generators of medium and large hydro units;
- A Thermal Service workshop, capable of a range of service functions e.g. high speed balancing of rotating equipment, blading/de-blading, welding, casing repairs, rotor straightening, rotor rewinds, insulation changes; and
- The technical laboratory to carry out diagnostics and develop highly innovative integrated products and technologies for the Indian market and for other regional markets.

Initiating Organization

Alstom – www.alstom.com

Geographic Scope

India

Experiences of Best Practice or Potential Goals of the Collaboration

Policies implemented at national and state level together with the local authorities' desire to attract inward investment helped to make this possible. Specifically, they stimulated market demand with incentives to invest while also liberalising the electricity market to encourage new entrants and

Type of Partners Involved/Wanted

National, regional and local authorities

boost competition. Vadodara itself offered excellent transport links (important to the logistics of moving heavy machinery) as well as a strong education system, supplying a robust and flexible labour market.

As a result, our investment in the area has developed from a factory into a global R&D and export hub, capable of delivering the largest and most complex components and leading research into turbine blade corrosion. We have built partnerships with a range of Indian businesses and developed an induction and training programme for young Indian engineers.

Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success

Governments should provide long term stable market frameworks supporting low carbon technology that incentivizes private investments in R&D.

Elements of a right policy framework includes:

- IPR protection,
- market access / free markets,
- elimination of fossil fuel subsidies,
- capacity building to secure technology transfer among other things,
- incentivize investments through feed-in tariffs, carbon pricing etc.,
- set performance standards, e.g. to ensure energy-efficiency and the application of Best Available technology

Elements of a right financing framework includes:

- carbon pricing but this will not suffice,
- addressing the risk-reward balance through PPP and risk-sharing instruments and
- building on the successful experience from innovative business models

Comments: Please list any additional Statements, messages or call for action you may wish to gather from the audience.

The global economy will invest over \$7 trillion/yr over the coming decades in new energy, urban and transport infrastructure – 35 % in OECD countries and 65% in non- OECD economies. Resource-efficient investment at this scale can result in cleaner, safer, more affordable infrastructure and increase productivity, to over \$1 trillion/yr according to some estimates.

As the largest source of investment, innovation, and job creation, business is essential to deliver and make the most of opportunities that arise from the transition to a green growth economy. To enable a successful transformation, however, the right policy must be put in place, together with transparent and predictable regulatory frameworks to allow business to make the long-term, often capital-intensive, investments required.

Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.

Johan Mellerup – johan.mellerup@power.alstom.com

Key alignment(s) with the ten green economy conditions

- Metrics, accounting, and reporting

<p><u>Description</u></p> <p>The issue of baseline setting is a critical issue of for defining and managing emissions reductions paths. The impact of implementing any emissions reductions activity or a project needs to be assessed with respect to an estimated “business-as-usual” scenario.</p> <p>Currently, only 11 CDM host countries publish data on their grid CO2 emissions factors. Even though such data is crucial, also beyond the CDM, for assessing the impact of implementing new power technologies no grid emissions data from developed countries is yet available.</p> <p>Alstom has developed a database of grid emissions factors at a national electricity system level for 184 countries that enables Alstom to quantify the CO2 emission reduction our customers have achieved due to Alstom technology.</p> <p>The methodological approach for developing this database is based on a standard, multi-project baseline estimation procedure of the internationally recognized standards: GHG Protocol and CDM baseline estimation tool. The approach as well the results has been verified by a third party.</p>	
<p><u>Initiating Organization</u></p> <p>Alstom</p>	<p><u>Geographic Scope</u></p> <p>Global</p>
<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>The used methodological approach for developing this database is a standard, multi-project baseline estimation approach as described in the GHG protocol (Guidelines for Quantifying GHG Reductions from Grid-Connected Electricity Projects) jointly developed by WRI and WBCSD and as operationalized in the CDM methodological Tool to calculate the emission factor for an electricity system (Version 02).</p> <p>The database has been developed in order to quantify the contribution of Alstom Power offerings to reduce CO₂ emissions for its customers, and hence for the global power generation sector, as they operate new power plants with Alstom technologies or existing ones after having benefiting from Alstom service solutions.</p> <p>The assessment has been made project-by-project taking into account in each case (1) the specific characteristics of the project and (2) context (country,</p>	<p><u>Type of Partners Involved/Wanted</u></p> <p><u>Designated National Authorities (CDM eligible countries)</u></p> <p><u>National electricity authorities for the rest of the world.</u></p>

grid...) in which it is implemented.

The full methodological approach as well the results of the quantified emissions reduction was verified by a 3rd party audit partner.

Compared to a country level analysis where relevant data on installed capacities, generated and transmitted electricity, fuel consumption (or CO₂ emissions) at power plant level and load curves of the electricity systems can be usually gathered (bottom-up analysis), the Alstom grid factors (OM EF & BM EF) estimation is based on a developed top-down model using data provided by external sources on total installed capacities and generated electricity by fuel/country/year and total CO₂ emissions of the electricity sector by country/fossil fuel type/year.

Official data published by national electricity authorities (from the 11 countries mentioned above) are used to validate the results of the Alstom approach and to analyze the sensitivity range.

The Alstom developed approach shows that also in view of lack of detailed electricity generation and emissions data, acceptable and consistent results within a range of +/- 15% from officially published data can be achieved. These results of the model are used for countries where no grid emissions factors are being estimated and published. Officially published values are successively integrated into the Alstom global emissions factors database.

Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success

Alstom strongly believes that baseline setting would also support the establishment of emissions monitoring registries and inventories being key prerequisites for setting national emissions reductions targets and for enhancing the transparency while assessing the potential and the economic viability of emissions reductions projects across countries, technologies and fuel types. Even in developed countries, where there is also a need for assessing the impact of implementing new power generation technologies and solutions on achieving emissions reductions targets, no baseline emission factors of the electricity systems are yet available.

From this perspective, Alstom is willing to share its estimations of grid emissions factors with countries where such data is still missing. Particularly for least developed countries, where efforts on building emissions inventories and estimating grid emissions factors are facing lower maturity levels of institutional structures and a lack of required capabilities, the developed model offers a relatively efficient way of getting a preliminary and acceptable approximation of their grid emissions factors.

Comments: Please list any additional Statements, messages or call for action you may wish to gather from the audience.

Alstom would also highly welcome the establishment of a global grid CO2 emissions factor database managed by the UNFCCC or another UN body based on submissions of official data by governmental bodies of all countries (provided by electricity authorities, economic and environmental departments/ministries, etc.) on a yearly basis.

Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.

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Alstom

Case: Energy Efficiency: Arnot Capacity Increase Project, South Africa

Key alignment(s) with the ten green economy conditions

- Resource efficiency and decoupling

Description

In 2006, Alstom undertook the upgrade of the six units of Arnot Power Station, a coal-fired plant owned by Eskom, increasing power output from 350 MWe to 400 MWe per unit, while at the same time improving efficiency and extending the plant's lifetime by 20 years. The project included retrofitting the turbines and boilers to increase capacity to 400 MWe, a complete retrofit of high-pressure and intermediate-pressure steam turbine internals, upgrade of the low-pressure steam turbine and the replacement and upgrade of associated turbine pumps and auxiliaries. The project will be completed in 2012.

Initiating Organization

Alstom – www.alstom.com

Geographic Scope

South Africa

Experiences of Best Practice or Potential Goals of the Collaboration

There is a huge potential to deliver power more efficiently with lower CO2 Emissions from existing plants. According to IEA one percentage point increase in efficiency in a fossil-fueled plant results in a 2-2.5 percentage point reduction in CO2 Emissions

A super critical unit can produce up to 16% percent and emit 14 less CO2 than a sub-critical unit.

Type of Partners Involved/Wanted

Utilities (Eskom in the Case)

It is also offers a solution to bring more electricity into the grid quickly in countries where demands outstrip supply thereby increasing energy access.	
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Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success

Providing energy access for all while still mitigating emissions requires all available low carbon technologies to cope with the increasing demand for energy.

Policy-makers must make sure that the right frameworks are in place that gives investors the long term security to engage in projects that amongst others improve energy efficiency in existing plants.

Globally, there is a huge potential to deliver power more efficiently through retrofits and upgrades to hydropower, nuclear, coal and gas-fired plants.

Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.

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Bank of America

Nuru Energy

Key alignment(s) with the ten green economy conditions

- Finance and investment

<p><u>Description</u></p> <p>Bank of America Merrill Lynch (BofAML) financed Nuru Energy, a social enterprise providing an affordable and clean off-grid lighting system in sub-Saharan Africa. BofAML provided upfront capital via an option premium to purchase carbon credits on which it takes price and delivery volume risk. These credits are Kyoto compliant Certified Emission Reduction carbon credits. Unusual for a carbon deal, it also includes microfinance assistance, crucial given Nuru's business model which involves selling LEDs indirectly to rural customers through microfranchise entrepreneurs. The option premium provides Nuru capital to scale up its operations and secure revenue from sale of credits earned for reducing CO2 emissions by displacing use of kerosene with rechargeable LEDs.</p> <p>Nuru Energy's business model is entirely focused on the base of the pyramid. Nuru Energy works with local organizations to recruit and train micro-franchise entrepreneurs who come from disadvantaged and rural communities, including women. Nuru Energy Entrepreneurs, who sell Nuru's LED lights to their community and then offer POWERCycle™ recharging services for a small fee, typically earn in 20 minutes what they previously earned in an entire day.</p>	
<p><u>Initiating Organization</u></p> <p>Bank of America (www.bankofamerica.com)</p>	<p><u>Geographic Scope</u></p> <p>Rwanda, Tanzania, Uganda, Kenya, Burundi and other countries in Sub-Saharan Africa</p>
<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>This deal works because of its innovative twinning of microfinance and carbon finance. Microfinance plays a crucial enabling role since Nuru Energy's unique distribution strategy is to sell its LEDs (and other off-grid products) indirectly to rural customers through rural micro-franchise entrepreneurs who are equipped and trained by Nuru Energy and financed by MFIs (Microfinance institutions). Carbon finance from monetising the carbon credits earned from replacing kerosene with LEDs enables BofAML to recoup its option premium and earn a risk-adjusted return for taking price and volume risk on carbon credits.</p> <p>The ultimate beneficiaries of this deal are the households in rural communities that are able to displace use of kerosene, an expensive and heavily polluting fuel, with</p>	<p><u>Type of Partners Involved/Wanted</u></p> <p>List the type of partners that have already been engaged or could engage in the future (e.g. industry partners in the value chain, National Chambers of Commerce, Governments, universities, civil society actors....)</p>

<p>LED to provide a next generation lighting service.</p> <p>Microfinance unlocks start-up capital for micro-franchise entrepreneurs who come from disadvantaged and rural communities. Over the life of the deal, 3.5 million tons of CO2 emissions will be reduced.</p> <p>Over the life of BofAML's deal with Nuru Energy (2010-2020), it is expected that 3.5 million tonnes of CO2 emissions will be avoided through displacement of kerosene with LED for lighting services. By 2020, this will make the deal one of the largest greenhouse gas emissions reduction programs implemented with private capital in a Least-Developed Country (LDC).</p> <p>There is huge scope for scaling up the use of rechargeable LED lighting in Africa through carbon finance and microfinance. The deal between BofAML and Nuru Energy covers 3.5 million tons of carbon credits which will result from the eventual establishment of several thousand entrepreneurs and the deployment of thousands of Nuru Lights in East Africa.</p>	
<p><u>Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success</u></p> <p>This model can be replicated across many developing countries. Nuru has already established itself in 5 countries and has the opportunity to significantly broaden this over the coming years. A global market for carbon through policies that achieve meaningful emission reductions using market mechanisms like emissions trading and project offsets (carbon credits) is also critically important since this acts as a project enabler that attracts the carbon finance.</p>	
<p><u>Comments: Please list any additional Statements, messages or call for action you may wish to gather from the audience.</u></p> <p>This transaction is an example of a new business paradigm that weaves together carbon finance and microfinance to deliver multiple positive outcomes in the Least Developed Countries. While each element of the business brings significant benefits, when combined they provide a compelling model for green growth and development. In particular, access to carbon markets is facilitative of a whole chain of opportunities that ultimately have global as well as local beneficial impacts. More importantly, this model can be used, with slight variations, across the developing world.</p>	
<p><u>Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.</u></p> <p>Abyd Karmali, Managing Director and Global Head of Carbon Markets, BofAML</p>	

Bank of America

Project AMP and Project SolarStrong

Key alignment(s) with the ten green economy conditions

- Finance and investment

Description

Bank of America Merrill Lynch (BofAML) structured and drove a landmark deal (Project Amp) to finance the installation of approximately \$2.6 billion of solar panels on commercial and industrial rooftops across the US. This deal represents the largest distributed rooftop solar generation deal globally in history. The project will create the equivalent of up to 10,000 full-year jobs across up to 28 US states at distribution facilities owned and/or operated by Prologis (an owner of industrial real estate). Once fully funded and completed, these installations are expected to provide up to 733 megawatts (MW) of distributed solar energy, which is enough clean, renewable energy to power approximately 100,000 homes.

BofAML helped secure a federal loan commitment that will cover 80 percent of the \$1.4 billion in debt financing, under the Department of Energy's Financial Institutions Partnership Program (FIPP). The total cost of the project will be \$2.6 billion, the remaining portion of which will be financed by the private sector over a four year period. The \$1.4 billion loan guarantee is one of the largest awarded by the U.S. government to support renewable energy development.

Leveraging the model developed for Project Amp, BofAML is also acting as structuring advisor and sole lender for the largest residential solar deal in history, referred to as "Project SolarStrong", which is expected to build more than \$1 billion in solar power projects for privatized US military housing communities across the country. SolarStrong is expected to create up to 300 megawatts of new solar generation capacity through the installation of rooftop photovoltaic (PV) systems on up to 120,000 US military residences across the country. The project will create thousands of jobs, many of which will be filled by US veterans and military family members, who will be recruited, trained and employed to install, operate and maintain the PV systems.

BofAML helped to create a financing structure for SolarStrong that does not rely on a US Department of Energy loan guarantee, making it the first solar deal of this magnitude to move forward without a government guarantee.

The two projects are vast, yet eco-friendly: The solar arrays will be built on existing structures, and will not require additional infrastructure (such as transmission lines) to get the power to where it's needed. The solar arrays will be built on existing rooftops and plug each installation directly into the grid in the communities that need the power.

The two deals were also designed to serve as a blueprint for future large-scale projects, paving the way for growth and expansion of the distributed solar sector. The transactions can also serve as models for other types of distributed energy generation, and might even help create large-scale financing alternatives for energy efficiency.

<p><u>Initiating Organization</u></p> <p>Bank of America (www.bankofamerica.com)</p>	<p><u>Geographic Scope</u></p> <p>United States, though this model could be applied in other countries that have a similar regulatory infrastructure and adequate solar resources.</p>
<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>Before Project Amp, solar distributed generation was fragmented and underserved by the financial markets. There were no large-scale debt financing tools available, and projects generally were financed with equity alone. BofAML recognized that equity investments were not going to be sufficient to fund the massive growth potential of the solar distributed generation market, so it set out to develop a long-term debt model that could be replicated and scaled up to provide an optimal combination of debt and equity to finance solar distributed generation projects on a scale that was impossible until now.</p> <p>BofAML partnered with two leading companies – the industrial real estate owner Prologis and power generator NRG Energy. Prologis is the leading owner, operator and developer of industrial real estate, focused on global and regional markets across the Americas, Europe and Asia. NRG Energy is a Fortune 500 and S&P 500 Index company that owns and operates one of the country's largest and most diverse power generation portfolios.</p> <p>The partnership and government backing will help reduce the costs of rooftop solar projects. The scale of the project, together with the financing structure and the DOE guarantee, will make this a game-changer for the industry and will transform the way that rooftop solar works in the U.S. This project will add significant scale to the distributed solar market in the U.S. and provides economic and environmental benefit to both companies' shareholders and customers.</p> <p>SolarStrong moving forward without a federal loan guarantee is a clear indication that long-term incentives such as the investment tax credit are working. One primary contributing factor to the success of this project was BofAML's prior experience in Project Amp, which helped show the company what could be possible and what sort of funding plans are best to use, and effectively laid the foundations for doing a transaction that did not require a guarantee.</p>	<p><u>Type of Partners Involved/Wanted</u></p> <p>Corporations, Investors, Governments</p>

Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success

Project AMP and SolarStrong are transforming the solar industry by revolutionizing how distributed solar is financed and rolled out, driving down costs, and making rooftop solar more competitive with other types of power generation. Future success will depend on continuing to develop large-scale financing tools that work with or without the help of a government guarantee.

Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.

Jonathan Plowe, Head of New Energy & Infrastructure Solutions, Bank of America Merrill Lynch

Description

BASF understands the many challenges farmers face today – running a successful business, protecting the land they live on and farm, as well as providing us all with an increasing quantity of healthy, affordable food.

BASF has already implemented a number of effective programs in many parts of the world, with the company's experts and farmers working closely together to achieve groundbreaking results.

Knowledge transfer

Many farmers around the world simply do not have access to the right products or to technology that is individually tailored to their needs. Alternatively, they may not have the appropriate knowledge or skills. According to a UN report, every second person suffering from chronic hunger is a small-scale farmer. If these smallholder farmers are lucky, their harvests are just about sufficient to meet their family's needs. They could significantly improve their finances and the well-being of their families by increasing yields. However, according to a study by Deutsche Bank Research, farmers need access to education, knowledge, capital, loans, markets, and risk-management strategies. In India, soybean yields have been extremely low in international comparison, amounting to only about a third of the worldwide average. The BASF India team found that there were many reasons – inappropriate fertilization, excess seeding, and incorrect use of crop protection products coupled with a general lack of knowledge about good agricultural practice.

In 2006, the "Samruddhi" idea was born. Meaning prosperity in Sanskrit, Samruddhi represents a holistic business approach that helps farmers and their communities become more sustainable. The idea was simple: Talk with farmers, find ways to boost their yields and profitability, and offer hands-on advice.

In 2007, the Samruddhi project was initiated in Madhya Pradesh, an Indian state, where about 75 percent of the land used for soy cultivation is located. BASF sent 280 agronomists to work with farmers. Starting three months before planting and ending when the soybeans were sold to market, these agronomists conducted thousands of workshops, harvest days, market days, and visits to individual farms. Each agronomist provided support and guidance to around 150 to 225 farmers. Advice ranged from selecting the right seed to educating farmers as to when they should apply crop-protection products during the harvest, in addition to advice being offered about sales and cost-control measures such as price making and negotiation practices.

Each farmer received an individual worksheet to help them track costs and earnings and to calculate profit per acre. The results were amazing – in 2008, the soybean yield increased by 31 percent compared to traditional cultivation methods, with farmers increasing their net income by 60 percent.

In 2009, comparative yield increases averaged 24 percent, despite a severe drought. Mahendra Singh (a 32-year-old who owns a six-acre farm) in Sayri, India, has used Samruddhi practices for the last two years. "Thanks to Samruddhi, my yield has increased from six quintals per acre to eight quintals per acre. With this additional income, I was able

to get my house repaired and buy a generator for irrigation work. This year, I am planning to purchase a motor bike.” While the initial project benefitted about 30,000 Indian farmers, the success story is ongoing. In 2008, the Department of Agriculture of the State of Madhya Pradesh signed a Memorandum of Understanding for activities in an additional region, the Harda District.

As of 2010, approximately 170,000 soybean farmers in India have been collaborating with 700 BASF agronomists in order to make soy cultivation as sustainable as possible. Yield has been further increased and now nearly reaches world average standard. The project has also delivered business benefits for BASF. In the period 2006 to 2009, the company saw revenues for its soybean plant-protection products increase 60 percent annually.

Encouraged by this success, BASF has ambitious goals for the future. Similar projects have been started with 27,500 potato and 25,000 onion growers in India. Further pilot trials are planned for chili, guar beans, tomatoes and groundnuts. In 2010, BASF also expanded Samruddhi to Indonesia and Sri Lanka. BASF also plans to launch a customized version of the project in Africa.

Respecting nature and biodiversity

Sustainable agriculture is not just about increasing yields, but also about taking nature and biodiversity into account. A project in the United Kingdom illustrates how conventional farming methods and biodiversity can co-exist in mutual harmony.

Since 2002, BASF has been working with a conventional farmer near a small English village, Rawcliffe Bridge. Within just a few years, the Hinchliffe family’s arable farm has developed into an attractive habitat for around 100 bird and 150 plant species, some of them endangered. The idea was developed in collaboration with the Farming and Wildlife Advisory Group and the Royal Society for the Protection of Birds. One hectare near woodland was sown with a grass mix while two hectares nearby were sown with field margin mixtures – all aimed at encouraging beneficial insects, and farmland birds, for example skylarks. The farm also provides popular retreats for animals like the water vole and the brown hare. Working closely with local wildlife advisors, a “bed and breakfast” approach of providing nest boxes and food for birds was introduced.

This helped to create ideal breeding conditions for bird species like the tree sparrow, the blue tit, and the great tit. Some farming practices were also slightly changed to minimize the impact to birds and their source of food, particularly at nesting time. “I want to stress that there was almost no impact to our commercial business – we didn’t use any special methods – the only commitment on our side was patience, a willingness to modify some farming practices, and a bit of time,” explains Mr. Hinchliffe, manager of the family farm.

“Based on our positive experience, this is a simple, practical but effective way for farmers to protect nature and wildlife. It’s a win-win – nature and intensive farming are compatible and can live happily side by side.”

The Agricultural Trials Services successfully conducted a number of comparative bird studies on the farm as well as analysis of different wheat varieties, fungicides, herbicides, and seed treatment programs. BASF participated in the studies along with leading seed companies. This helped to generate a high-quality, comprehensive database, which will help inform future projects.

Rawcliffe Bridge clearly demonstrates the benefits of using crop rotation, best practice agronomy, and field margins to enhance the number of birds, butterflies, and bees. The results show that commercial farming systems – based on best practice – combined with

sensible field margin and woodland management can deliver best practice biodiversity without impacting the commercial viability of the farm.

The project's results encouraged BASF to use the concept at a second site - The Grange - in the south midlands of England. The Grange started in 2008 and continues to demonstrate how to best manage biodiversity under different natural and agronomic conditions.

These examples set a new precedent and should serve to inspire farmers everywhere.

Protecting the environment and fostering social responsibility

Sustainable agriculture is not a short-term goal, but is rather focused on long-term success – not just for the economy but in the important areas of social responsibility and environmental protection. For over 20 years, BASF has teamed up with a broad range of partners from the business and scientific communities in Brazil, including the Gesellschaft für Internationale Zusammenarbeit (GIZ) to support “Mata Viva,” an environmental education and reforestation program. The goal is to conserve biodiversity, preserve the quality of water, and create areas between forests to encourage native vegetation and wildlife. The project receives funding from the Deutsche Investitions- und Entwicklungsgesellschaft mbH (German Investment Corporation).

“DEG supports the BASF initiative as part of the Public-Private Partnership program of the Federal Ministry for Economic Cooperation and Development,” says Marco Christ, DEG’s Investment Manager. “Mata Viva is a very interesting project as it supports agricultural cooperatives spread across four Brazilian states, effectively from São Paulo to Paraná. The project is now moving toward even more challenging targets, focusing on reclaiming very badly degraded land.”

Since 1984, with the help of BASF and its employees, over 500,000 native trees have been planted, covering an area of approximately 340 hectares – the equivalent of around 340 soccer fields. A hundred technicians have been trained on how to identify and map affected areas, complete a diagnosis, and prepare a reforestation plan. Through the media of theatre and art, children are being taught the importance of nature and recycling, using natural fibers to make arts and crafts. This experience is more than just a fun extracurricular activity – it is fostering a new generation of socially responsible children who understand that precision and high-yield agriculture can exist with biodiversity in mutual harmony, as the socio-eco efficient model for the future.

Looking Ahead - World food and agriculture face huge challenges in the decades ahead. It is possible to provide sufficient high-quality food at affordable prices to the rapidly growing world population, while at the same time reducing agricultural greenhouse gas emissions and preserving natural habitats. BASF employees will continue to help farmers around the world achieve more yield, using less land and water, while protecting the environment and precious natural resources. Sustainable agriculture is the key to achieving these essential goals.

Contact:

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Bayer Crop Science

Science Child Care Program

Key alignment(s) with the ten green economy conditions

- Education and skills

Description

The Bayer CropScience Child Care Program reflects our clear zero-tolerance policy on child labor. However, child labor is still deeply rooted in many Asian cultures, including the agricultural sector in India, so we need a change in awareness. Our teams use the program's comprehensive strategy to get across the message that working in the fields can be profitable without resorting to the use of children. Education opportunities are also provided for children and our communication measures make parents more aware of the problem. Last but not least, the initiative provides additional incentives such as microcredits and knowledge transfer on crop production. The Bayer CropScience Child Care Program covers far more than a contractual ban on child labor and the necessary age verifications in the fields.

1. Contractual ban on child labor: Contracts concluded with our partners expressly ban child labor. Clear agreements are reached that specify graduated sanctions in the event of non-compliance and provide incentives for dispensing with child labor.
2. Regular visits to areas under cultivation to verify workers ages: Our teams visit, for example, the cotton-growing areas several times during the season to verify the age of the people working there. A separate organizational unit is responsible for this and the results are evaluated each year by an independent auditor.
3. "Learning for Life" educational opportunities. Children should be given the chance of a better future. Our "Learning for Life" initiative extends to include reintegration into the regular school system through to vocational education measures.
4. Raising awareness of the problem: Schooling is the key to higher earnings later in life. We are getting this message across with our communication strategies and showing farmers that they can work their fields profitably without using children.
5. Incentives for farmers: We help to ensure the economic efficiency of cotton cultivation through further incentives such as training courses in the safe handling and use of crop protection agents and extensive knowledge transfer on crop production.

The Bayer CropScience Child Care Program is mentioned in the German Governments Human Rights Report as a best practice example for Corporate Responsibility and also taught at several universities globally. It is also implemented in our vegetable seed production in India and currently introduced into our Indian rice production.

Initiating Organization

Bayer CropScience
www.bayercropscience.com

Geographic Scope

Applies to India with a potential to extend to Asia/Pacific. In principle the package of comprehensive measures that can be used globally.

<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>Acceptance of child labor is deeply rooted in rural areas in India. By communicating clearly and unambiguously that child labor will not be tolerated by Bayer CropScience, we initially run counter to the long-established value system. Bayer CropScience had to engage in some persuasion and create trust and credibility to ultimately change the way people think. The company was only able to achieve success by convincing people that children with a better education have better opportunities for the future.</p> <p>The measures to be implemented should give people a direct benefit that they can feel immediately. This raises the level of acceptance for further action. The aim is to achieve a win-win situation for the company and the people affected.</p>	<p><u>Type of Partners Involved/Wanted</u></p> <p>Working with local organizations who are at home in the language has proven to be beneficial for Bayer CropScience. Major intervention by staff from Europe should be avoided if at all possible, except where specific know-how is required in individual cases. European employees are not usually familiar with local conditions, the specific cultural characteristics or language.</p>
<p><u>Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success</u></p> <p>Eliminating child labor is a complex task and requires comprehensive solutions. To really help children, it is important to ensure that families receive sufficient income. Children must also be offered long-term (career) prospects. Education is the key to a better future. Supervisory and inspection measures must ensure that children do not work in the fields – but that is only part of the task. It is much more important to change the way people think. Fields can also be worked cost-effectively without child labor. Bayer CropScience multi-level action program in India aims to make it clear to children and their families in rural areas that child labor can be no way of securing their livelihood.</p>	
<p><u>Comments: Please list any additional Statements, messages or call for action you may wish to gather from the audience.</u></p> <p>http://www.auswaertiges-amt.de/cae/servlet/contentblob/358008/publicationFile/131972/9MR-Bericht-pdf.pdf</p> <p>http://www.csr-weltweit.de/de/fallstudien/studie/bayer-cropscience-ag-bayer-cropscience-child-care-program-die-rechte-von-kindern-schuetzen/index.nc.html</p>	
<p><u>Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue</u></p> <p>Dr. Uwe Brekau, International Organizations & Associations Liaison, Bayer CropScience, uwe.brekau@bayer.com</p>	

Bonsucro

Bonsucro: A multistakeholder organisation established to provide standards for sustainable sugarcane production

Key alignment(s) with the ten green economy conditions

- Life cycle approach
- Metrics, accounting, monitoring and reporting
- Finance and investment
- Integrated environmental, social and economic policy and decision-making
- Governance and partnerships

<p><u>Description</u></p> <p>Bonsucro is a multi-stakeholder organization consisting of companies, NGOs and public sector actors established with the purpose of making sugar cane production more sustainable.</p> <p>Bonsucro aims to improve the social, environmental, and economic sustainability of sugarcane by promoting the use of a global metric standard, with the aim of continuously improving sugarcane production and downstream processing in order to contribute to a more sustainable future.</p> <p>To date, this non-profit organization has developed a Production Standard that assesses the biodiversity, ecosystem, economical and human rights impact of sugarcane production. Certification is awarded to operators which impact is minimalized and judged sustainable. Operators are certified by third party certification bodies that have been recognized by Bonsucro.</p> <p>The Bonsucro Standard incorporates a set of Principles, Criteria, Indicators and Verifiers which are used to certify sugar producers (meaning farmers and sugar mills) who comply. The Bonsucro certificate guides companies in the sugar and ethanol value chain who wish to procure sustainable feedstock/ supplies, and also the financial sector who wish to make more sustainable investments.</p>	
<p><u>Initiating Organization</u></p> <p>www.bonsucro.com</p>	<p><u>Geographic Scope</u></p> <p>Global in reach</p>
<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>Bonsucro reached an important milestone in June 2011 when its first certification of sugarcane mill took place.</p> <p>The Bonsucro certification marks the world's first impact based Standard used to certify the sustainable production of sugarcane.</p> <p>The first certified sugarcane was produced at a Raízen mill in Sao Paulo, Brazil and was purchased by The Coca Cola Company's bottling system. This marks the arrival of</p>	<p><u>Type of Partners Involved/Wanted</u></p> <p>Business actors, NGOs and public sector. 58 members - Farmers, millers, end-users, supply chain companies and NGOs (attached is a set of current members as of 20 February 2012).</p>

<p>Bonsucro Certified products on the global market.</p> <p>Factors that have contributed to Bonsucro's success:</p> <ul style="list-style-type: none"> • Bonsucro followed the ISEAL Code of Good Practice for Setting Social and Environmental Standards for the development of its own standard. • It also invested in a two-year multi-stakeholder global consultation process (covering 4 continents and 10 countries), involving growers, producers, procurers of sugar and downstream products NGOs and governments. • In parallel, pilot audit tests in Brazil, Colombia, Dominican Republic, India, South Africa and Australia, informed the design of the standard, all of which contributed to a successful delivery of Bonsucro's vision and mission. 	
<p><u>Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success</u></p> <p>From the start, Bonsucro gathered around the table all the actors of the sugarcane industry, from farmers to end-users. Still today, the 58 members represent this whole value chain.</p> <p>Bonsucro benefitted from the early commitment of the majors actors of the industry. This was a clear signal to the whole supply chain that changes is needed and Bonsucro is providing a viable solution.</p> <p>Bonsucro has been approved by the European Commission as a voluntary standard that demonstrate compliance with the European Union Renewable Energy Directive (EU RED) and Fuel Quality Directive (EU FQD).This assists companies wishing to produce or trade biofuels for import into the EU by providing a mechanism to gain access to the EU market.</p> <p>Further growth will depend on the number of producers that choose to certify their sugarcane production activities. Bonsucro also fosters expertise in sugarcane production and supports the sharing of knowledge and information to achieve the standard.</p> <p>Bonsucro certification is relatively inexpensive. As well as protecting biodiversity, ecosystems, social milieu and the atmosphere (GHG), Bonsucro encourages economic sustainability, and helps improve technical and business efficiencies.</p> <p>Bonsucro positions companies using the Standard at the fore front of global sustainability practices.</p> <p>Bonsucro helps deliver efficient use of resources including energy, water and raw material.</p> <p>Bonsucro encourages continues improvement with the metric indicators.</p> <p>Bonsucro demonstrates through measurable impacts that a company is against child labour, supports human rights, and is concerned with implementing environmentally sound practice.</p>	

Bonsucro is a registered trademark in the European Union, Australia and a trademark in other countries such as Brazil, India and Indonesia.

Comments: Please list any additional Statements, messages or call for action you may wish to gather from the audience.

To the audience: would the audience wish to follow Bonsucro path in stakeholder engagement and discuss difficulties and successes?

Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.

- Doug McKay, VP International Organisations, Royal Dutch Shell
- Natasha Schwarzbach, Head of Engagement, Bonsucro

Bosch Brazil

Flex Start System

Key alignment(s) with the ten green economy conditions

- Open and competitive markets

Description

Flex Start system is a cold start management system used for flex fuel vehicles in Brazilian automotive market. This new technology enables engine cold start when powered with ethanol, without the assist of the gasoline sub-tank. This new product concept not only brings reliable engine start, but also improves cold start drivability, reduces vehicle emission level, is safer and brings more comfort for the driver.

ALEXSTART

Components

• Electronic control unit

- _Manages Flex Start System
- _Controls fuel temperature through heating power



• Heating control unit

- _Activates the heaters according to ECU demand
- _Inform dissipated power to ECU 9power feedback)
- _ Protects heaters (Rmax)



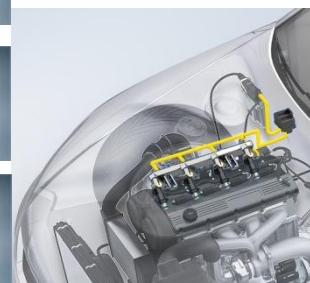
•Fuel rail assembly

- _ Distributes heated fuel to the injectors which optimize spray



Heating element

- _ Supply necessary amount of energy of heat ethanol



Initiating Organization

Bosch Brazil
www.flexstart.com.br

Geographic Scope

Developed in Bosch Brazil for the automotive local market, specifically for flex fuel engines. Implementation of such technology to other markets which uses ethanol based fuels could be possible.

<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>The Flex Start systems have several advantages in relation to current adopted solution:</p> <ul style="list-style-type: none"> _ Clean and economical: reduction of vehicle emission levels. _ Better engine start at lower temperatures and drivability during after start. _ More comfort for the driver, since he does not need to remember to fill sub tank. _ More safe during collisions since eliminates the sub-tank in engine compartment. It also avoids contact of gasoline with hot engine during tanking. 	<p><u>Type of Partners Involved/Wanted</u></p> <p>Involved partners: local universities, technical center in Germany and Bosch facilities worldwide.</p>
<p><u>Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success</u></p> <p>Commitment of all players, i.e. Engineering, facilities, manufacturing engineering, environment staff, etc.</p>	
<p><u>Flex Start System Awards</u></p> <ul style="list-style-type: none"> _ Bosch Innovation Award, from Robert Bosch, in 2008 _ Environmental Prize, from AEA, in 2009 _ Technological Innovation of the Year, from Autodata, in 2009 	
<p><u>Contact persons</u></p> <p>Fernando Lepsch (GS-FI/ENG11-LA), Robert Bosch Ltda., 13065-900 Campinas, Rod Anhanguera km 98 Tel.: + 55 (19) 2103 – 2789 E-Mail: fernando.lepsch@br.bosch.com</p> <p>Theophilo Arruda (C/PSR-LA), Robert Bosch Ltda., 13065-900 Campinas, Rod Anhanguera km 98 Tel.: + 55 (19) 2103 – 2811 E-Mail: theophilo.arruda@br.bosch.com</p>	

Bosch Brazil

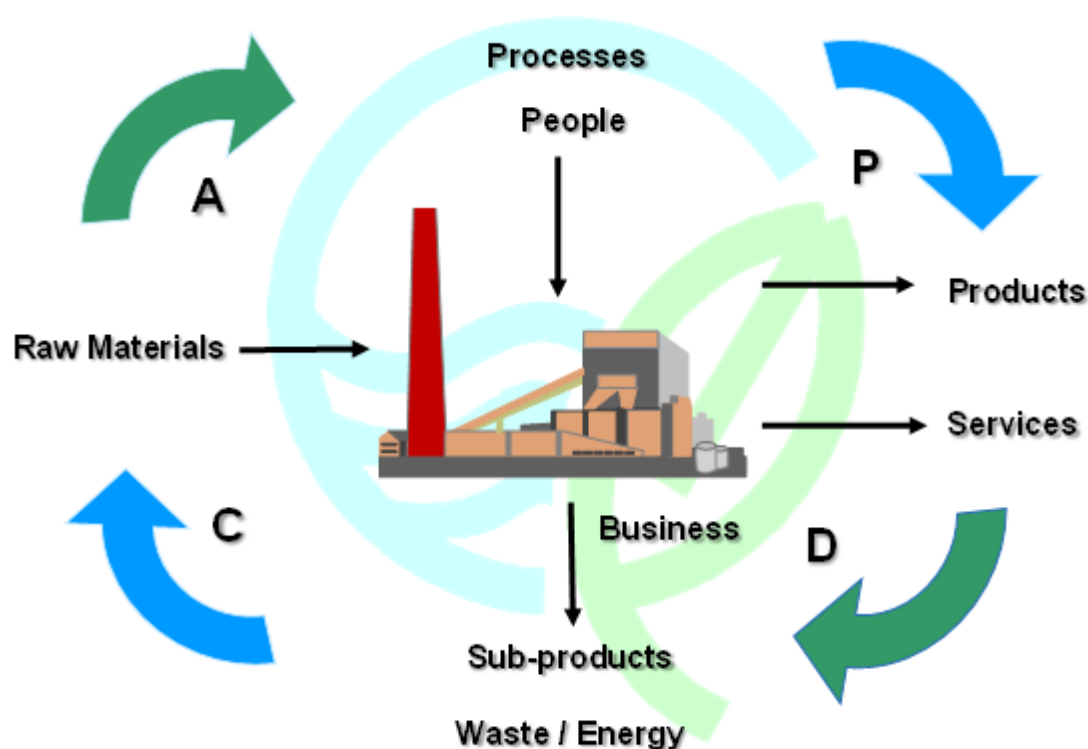
Zero Discharge

Key alignment(s) with the ten green economy conditions

- Resource efficiency and decoupling

Description

Integrated concept of sustainability based on development and optimizing of manufacturing process in order to reduce, reuse and recycle wastes as well utilization as energy sources / raw material for other processes.



Initiating Organization

www.bosch.com.br

see “Sustentabilidade “

Geographic Scope

Initially developed in Bosch plants Brazil, The Zero discharge concept may be applied for all organization that generate wastes.

Experiences of Best Practice or Potential Goals of the Collaboration

DfE – Design for Environment process has to be enforced as foundation for whole product and manufacturing development steps looking at energy reduction and waste generation.

Type of Partners Involved/Wanted

Supply chain could be involved in the future.

Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success

Reduce environment impacts related to waste generation and minimize environment liability through adequate treatment /disposal of wastes avoiding final disposal in landfill.

Commitment of all players, i.e. Engineering, facilities, manufacturing engineering, environment staff, etc.

Contact person:

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Braskem S.A.

Braskem's Contribution for Social Inclusion

Key alignment(s) with the ten green economy conditions

- Awareness
- Education and skills
- Employment
- Life cycle approach

Description

Braskem is the largest petrochemical polymers producer of the Americas and the largest biopolymer producer of the world. It has twenty eight production's facilities at Brazil, five at US and two at Germany. Since its establishment in 2002 Braskem has been committed to conduct its businesses according the sustainable development principles.

Braskem defined three pillars for its sustainable development strategy: to have more sustainable processes; to have a more sustainable product portfolio and to offer solutions to the society for a more sustainable life. All of them depend on innovation and technology investment.

The third pillar includes Braskem private social investments. Since 2006 Braskem decided to concentrate its social investment in three aspects: social inclusion trough the support to the recycling value chain; environmental education and cultural diversity promotion.

The support of the recycling value chain aims to improve the entrepreneurship of the cooperatives that works at the beginning of chain. The people so called "catadores" or waste pickers have low levels of education, from low income communities and usually work at very poor conditions. Some references say that there are about one million people at these conditions at Brazil. Braskem established a model that considers five steps: diagnosis, capacity building, business model definition, entrepreneurship and integration. This model is under implementation in four different locals at Brazil (Alagoas, Bahia, São Paulo and Rio Grande do Sul). Although is very difficult to measure social impact of any initiative, some figures demonstrate that this model is bringing some concrete results. In 2010 there were 194 people impacted and in the end of 2011 this figure was 666 people. An increase of more that 250%. At the same period an increase of the monthly per capita income were perceived by almost 200 people. That demonstrates that the social inclusion and poverty eradication could have some support from private companies. As another consequence of this kind of initiative is the increasing of plastic recycling rates, that in Brazil are about 20%. At each location the project are conducted in partnership with local NGOs.

Three projects on environmental education deserve to be mentioned. One is the "Lagoa viva" project. Since 2001 this project aim to increase the educational level of 35 cities at the Alagoas state. Where the Baskem's major chlorine production facility is located. Many different activities are developed in order to increase the awareness of environmental and economic linkage, like hydroponic plantations and apiculture. The second one is a project that aims to provide to the community surrounding the units of Braskem Petrochemical Complex located in the ABC (São Paulo State) region with sports, music lessons, dance and recreation activities. In 2011, the project covered almost 600 people, including children and adolescents.

The third and most important one is more recent but it reached to more than 1550 schools at the whole country. In partnership with two NGOs (Instituto Akatu and Instituto Faça Parte) an educational project was defined in order to pass to teenagers the view of the material life cycle and to advocate to the importance to know “the history of the things”. Plastic life-cycle is discussed. Its positive environmental impacts are identified as well as the importance of the community participation at the disposal phase. Best schools projects received awards.

At the cultural diversification initiatives, two of them related to actors, actress, directors and others theater’s professional development. One at Bahia state that since 1994 it has given awards to new local talents. And the other one at Rio Grande do Sul state that since 2006 it has been discovering new local talents.

All these initiatives are considered by Braskem as part its business strategy in order to better relate with the local communities, trying to strengthen its contribution to social inclusion, to environmental education and to cultural promotion.

Initiating Organization

Braskem S/A
www.braskem.com.br

Geographic Scope

Brazilian cities

Experiences of Best Practice or Potential Goals of the Collaboration

Focus on social inclusion processes
Education for life-cycle approach
Promotion of cultural diversification and inclusion

Type of Partners Involved/Wanted

Local governments
Non-Governmental Organizations

Conditions for Success/Success Factors

These initiatives have the support of decisive leadership, supported by 2020 Company’s Vision, which seeks “to be the world leader in Sustainable Chemistry, innovating to better serve the people”. Private Social Investments are seen as part of its business strategy and are considered as important tools to improve the relationship with local communities. The identification of good local partners has been key success factor.

Comments

More information about the product is available at Braskem internet web site (www.braskem.com.br).

Provide name of focal point for this engagement

Andre Leal, Braskem Corporate Social Responsibility Coordinator (andre.leal@braskem.com.br) and Jorge Soto, Braskem Sustainable Development Director (jorge.soto@braskem.com.br).

Braskem S.A.

Climate Change Mitigation Braskem's Strategy

Key alignment(s) with the ten green economy conditions

- Resource efficiency and decoupling
- Metrics, accounting, and reporting

Description

Braskem is the largest petrochemical polymers producer of the Americas and the largest biopolymer producer of the world. It has twenty eight production's facilities at Brazil, five at US and two at Germany. Since its establishment in 2002 Braskem has been committed to conduct its businesses according the sustainable development principles.

Braskem defined three pillars for its sustainable development strategy: to have more sustainable processes; to have a more sustainable product portfolio and to offer solutions to the society for a more sustainable life. All of them depend on innovation and technology investment.

Related to its industrial processes and to climate change mitigation contribution, Braskem efforts begun in 2006. There were identified improvement focuses in the most important greenhouse gases emitters. Many of them were related to heat and energy consumption and to hydrocarbons fugitive emissions. Some procedures were revised and some equipments and instillations were improved. All this effort resulted on the reduction of more than 18% of the intensity of greenhouse gases emissions, from 0,80 t CO₂e/t product in 2006 to 0,65 t CO₂e/t product in 2010.

An example improvement practice in some facilities was integration of production data management in the ERP Information System with the support of a new system known as a MES (Manufacturing Execution System). It helps to close the material balance every day, which is useful to monitor every environmental key performance indicator more closely. This improved system was crucial for planning actions, optimization process and identify opportunities.

Other tools were used like the PDCA cycle (Plan, Do, Check, Action) and DMAIC (Define, Measure, Analyse, Improve, Control) wich is based improvement projects like Six Sigma.

All these initiatives were implemented under the umbrella of a Health, Safety and Environment integrated management system called SEMPRES, which uses a sectorial worldwide improvement program as a reference: the Responsible Care.

Initiating Organization

Braskem S/A
www.braskem.com.br

Geographic Scope

Mostly the Braskem's Brazilian industrial facilities

<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>Focus on clean technologies. Improvement in the environmental policy of the company focused in resource efficiency. Reduction of Greenhouse Gases emissions</p>	<p><u>Type of Partners Involved/Wanted</u></p> <p>Engineering consultancies. Environmental Management Certification Bodies. Environmental Agency.</p>
<p><u>Conditions for Success/Success Factors</u></p> <p>The project development had the support of decisive leadership, supported by 2020 Company's Vision, which seeks "to be the world leader in Sustainable Chemistry, innovating to better serve the people". Investments in the environmental area, as the one done, are only possible when there is entrepreneurial leadership commitment to HSE issues.</p> <p>The search for sustainable solutions, which has become a differential in the company, was the primary motivating factor for perseverance during the 10 years that the project has already developed.</p> <p>The training and entrepreneurial vision of the team were also key, because projects like this arise from the mere perception of improvement points and the constant research for results in line with its vision and mission.</p>	
<p><u>Comments</u></p> <p>All these figures were evaluated by a third party certification and are available at Braskem internet web site (www.braskem.com.br). These figures are also reported to the public through the CDP (Carbon Disclosure Project) web site.</p>	
<p><u>Provide name of focal point for this engagement</u></p> <p>Mario Pino, Braskem Corporate Health, Safety and Environmental Manager (mario.pino@braskem.com.br) and Silvia Reis, Braskem Bahia Basic Petrochemical Unit Health, Safety and Environmental Manager (silvia.reis@braskem.com.br).</p>	

Braskem S.A.

Ecoefficiency Improvement Braskem's Strategy

Key alignment(s) with the ten green economy conditions

- Resource efficiency and decoupling
- Metrics, accounting, and reporting

<p><u>Description</u></p> <p>Braskem is the largest petrochemical polymers producer of the Americas and the largest biopolymer producer of the world. It has twenty eight production's facilities at Brazil, five at US and two at Germany. Since its establishment in 2002 Braskem has been committed to conduct its businesses according the sustainable development principles.</p>

Braskem defined three pillars for its sustainable development strategy: to have more sustainable processes; to have a more sustainable product portfolio and to offer solutions to the society for a more sustainable life. All of them depend on innovation and technology investment.

The first step of this strategy was to work looking for more sustainable industrial processes. Two approaches were considered: increase the investments on improvement of the industrial facilities and to invest on the improvements of the Health, Safety and Environmental practices. The average of investments at 2003 and 2004 were about R\$ 40 million (more than US\$ 20 million). This figure were increased to an average of about R\$ 120 million (more than US\$ 65 million) from 2005 to 2010. The decision on where to invest was also revised. Now every investment have to have all it environmental and social impacts evaluated and its evaluation is considered in the prioritization process.

The Health, Safety and Environmental practices improvement was implemented under the umbrella of a Health, Safety and Environment integrated management system called SEMPRE. I also had the support of others management programs like Braskem+ (focused on productivity) and Formula Braskem (focused on information management). SEMPRE system was defined considering a sectorial worldwide improvement program as a reference: the Responsible Care.

With this strategy some results had been already obtained at the period of 2002 to 2011. The accidents rates decreased more that 80%. Braskem total recordable cases is about 1.2 accident per million men work hours, now at a similar level of the best chemical companies of the world. The liquid and solid waste reduced more than 60%. Braskem emissions are about 2.1 kg/t of product. This is less than one fourth of the Brazilian chemical industry average. Wastewater reduced more than 35%. Braskem is now about 1.3 m³/t, almost a half of the Brazilian chemical industry average.

Understanding that water is an important sustainability issue, Braskem defined that more should be done. Three important projects are in place. The first consisted on the use of the some parking area to capture rain water to be used as industrial feed water at Camaçari (Bahia) Basic Petrochemical Unit. Rain water capture represents reduction on amount gathered from those local rivers or, at the end, natural resources preservation. Nevertheless, it has being using gravitational transport an economical gain can be obtained along in coming years. It is estimated that flow captured in the rainy season can achieve an average annual flow rate around 53 GPM or 12 m³/h.

The second, but the most significant project, is an inorganic effluent recycle unit, which is being developed with a local industrial wastewater treatment company at Camaçari. This inorganic effluent is composed by purges of boilers and cooling towers, as well as the rain waters falling on the industrial floor, which is drained into the inorganic effluent channels system operated by that wastewater treatment company. After check and specified that effluent is used to be conducted to the “Cativara pequeno” river (main final destination). This project consists on treatment of those streams and using as cooling water make up. Quantifying the gains in water consumption reduction the flowrate avoidance is about from 2,200 GPM to 3,520 GPM (from 500 m³/h to 800 m³/h). That project represents the largest country recovery system from industrial effluent and it is equivalent to entire nearest city around the industrial complex water consumption (200,000 habitants).

The third project is known as Aquapolo. This project is a partnership between Braskem, Foz do Brasil (environmental engineering company from Odebrecht group) and Sabesp (water treatment São Paulo State company). It will offer to Braskem more than 1500 m³/h of treated sewage from cities near Santo Andre (where another Braskem's Basic Petrochemical Unit is located) to use as industrial water source. The project will start up in

2012 and is today the biggest initiative for the use of this kind of used water at the southern hemisphere. Its volume is equivalent to necessity of a city of about 600,000 habitants.

All these initiatives are considered by Braskem as part its business strategy in order to increase its contribution for sustainable development reducing it environmental footprint.

Initiating Organization

Braskem S/A
www.braskem.com.br

Geographic Scope

Mostly the Braskem's Brazilian industrial facilities.

Experiences of Best Practice or Potential Goals of the Collaboration

Reduction of industrial environmental footprint;
Improvement of industrial water footprint;
Increasing resource efficiency;
Reducing risk of industrial activities.

Type of Partners Involved/Wanted

Universities
Environmental engineering companies
Local governments

Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success

The growing attention to the use of natural resources in line with the Company's 2020 vision, which seeks to become a "world leader in sustainable chemistry," was decisive in the search for sustainable solutions and successful projects implementation.

A good understanding of local environmental conditions was crucial to define investment focus for improvement.

To identify some potential partners for the investment was very important on the decision making process. When there are other companies interested at the same kind of solution, the decision is easier.

Comments: Please list any additional Statements, messages or call for action you may wish to gather from the audience.

More information are available at Braskem internet web site (www.braskem.com.br).

Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.

Mario Pino, Braskem Corporate Health, Safety and Environmental Manager (mario.pino@braskem.com.br). Or Silvia Reis, Bahia Basic Petrochemical Health, Safety and Environmental Manager (silvia.reis@braskem.com.br).

Key alignment(s) with the ten green economy conditions

- Resource efficiency and decoupling
- Life cycle approach
- Integrated environmental, social and economic policy and decision-making

Description

In June 2007, Braskem reported to the world the pilot production of the first polyethylene developed from ethanol produced with sugar cane. The innovation, a milestone in the global petrochemical industry, uses renewable raw material instead of oil derivate, and leads to reduction of global heating due to absorption of the CO₂ from the atmosphere during the growth of the sugar cane. For every ton of produced green polyethylene up to 2.5 tons of CO₂ are sequestered and fixed, This is a significant innovation, developed by the company in its Technology and Innovation Center (Centro de Tecnologia e Inovação) located at Triunfo (RS). The plant, with capacity to produce 200 thousand tons/year started its operations in September 2010.

Green Polyethylene is a thermoplastic resin made with ethylene obtained from sugar cane ethanol. It has properties that are identical to those of conventional polyethylene, which is one of the most widely used resins for flexible packing and other plastic products around the world, with the advantage of being made from raw from coming from renewable sources. It is recyclable as any resin, but it is not biodegradable, because it has the same characteristics of the fossil plastic. If it were biodegradable, the Green PE of Braskem would return to the atmosphere all the CO₂ that was absorbed during its life cycle, thus losing its eco-efficiency.

The innovation was submitted to one of the main international laboratories, Beta Analytic, which used ASTM D6866 standard to determine the contents of renewable source carbon in a sample of the product. This method allows differentiating carbon from fossil and renewable sources.

In 2011, Green PE of Braskem received the maximum certification of the Belgian company Vinçotte, main institution for assessing products with contents of renewable origin. The analysis considered samples of HDPE (High Density Polyethylene) and LLDPE (Low Linear Density Polyethylene) families. All the grades received four stars certification, attribution of maximum quality granted by Vinçotte. Until April 2014, the green polyethylene of Braskem shall use the 'Ok Biobased' seal.

Initiating Organization

Braskem S.A. – www.braskem.com.br and www.braskem.com.br/plasticoverde

Geographic Scope

Brazil – all over the territory
 Already being used in the USA, Japan, Argentina, France, Netherlands, Switzerland and other countries of Europe.

<u>Experiences of Best Practice or Potential Goals of the Collaboration</u>	<u>Type of Partners Involved/Wanted</u>
<p>By becoming a worldwide pioneer with the introduction of a renewable source thermoplastic resin, adding an environmentally friendly product to its portfolio, Braskem complies with a growing trend of consumers for valuating sustainable development. Thus, the company has immediately attracted the attention of companies using polyethylene base products all over the world, becoming a reference in the sector, due to the possibility of the customers to associate their brands with this commitment with sustainability.</p> <p>The production of green PE provides important image gains to the company by showing its environmental commitment and concern and, at the same time, it is an incentive for continuing the investments looking for other renewable source technologies.</p> <p>With the larger professionalization of the Brazilian sugar and alcohol sector, by increasing mechanization in harvesting and preparing the plants for producing bioelectricity, besides increasing the productivity, there is space for sustainable growth of raw material production, which is the ethanol. Brazil has 22% (340 million hectares) of all the area available for harvesting in the world. The agriculture used only 18.6% of this area, and sugar cane uses 7.8 million hectares, it is calculated that 3.4 million correspond to the area for ethanol production. Since cattle use 220 million hectares, in most part extensively, there is a large area available for expanding sugar cane production. It should be mentioned that the Amazon does not have appropriate climate for planting and is out the zone for sugar cane, thus avoiding that sugar and alcohol plants should receive license for operating in this region.</p> <p>Braskem, in order to reinforce its commitment with the sugar cane production chain, has created a code of conduct for its ethanol suppliers, defining sustainability criteria, such as compliance with environmental guidelines, respecting biodiversity, human and labor rights. The code of conduct was inspired in the best practices described in the Agro-environmental protocol of the State of São Paulo, Global Pact and National Commitment to improve labor conditions regarding sugar cane.</p> <p>The use of ethanol has allowed Braskem to diversify its raw material matrix, until then consisting only of naphtha and gas.</p>	

<p>Every produced ton of Green Polyethylene captures and fixes up to 2.5 tons of CO₂ from the atmosphere, the main greenhouse gas (GHG), according to the eco-efficiency analysis of Fundação Espaço Eco. Thus, it collaborates reducing the greenhouse effect and, as a consequence, global heating.</p> <p>Another environmental advantage of the innovation is that, besides being a renewable source product, it may be recycled in the current recycling systems. Also, the recycled Green PE Verde may be incorporated to the productive process of the transformer.</p> <p>For this reason, since the announcement of its production in 2007, green polyethylene has collected several partners and customers that contribute to show the sustainability and efficacy of the biopolymer.</p> <p>The resin with 100% renewable raw material has attracted international attention, reaching companies such as Danone, Coca-Cola, Procter & Gamble, Johnson & Johnson, Shiseido, TetraPak, Nestlé, Natura and Arena Amsterdam, among other.</p> <p>Currently, the Green PE Verde is present in various segments: food and beverages; automotive; personal care and cleaning; cosmetics; and retail.</p>	
<p><u>Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success</u></p> <p>The introduction of Green Polyethylene was the result of the joint effort of the areas of Technology and Innovation, sustainable development, marketing, projects and production Braskem, with active participation of the entire leadership of the company, starting with the president. Our main objective is pointing our actions in the direction of sustainable chemistry, where this resin is one of its elements, besides providing sustainable solutions for the customers.</p> <p>With this evolution, Braskem has taken another important step in its strategy of acting conforming to the sustainable development and advanced in the compliance with the public commitment: “It is necessary to mature to become green”, disclosed in 2009, with the commitment, among other things, to reduce the intensity of greenhouse gas emissions. The index in fact was reduced from 0.76 tons of CO₂ equivalent per ton of product in 2008 to 0.65 in 2010, with presents a reduction of 14% during the period.</p> <p>The use of renewable raw material, originated from sugar cane, for production of Green Polyethylene is inserted in the process for reduction of greenhouse gases because the carbon in its composition comes from the carbonic gas disperses in the atmosphere. With the production of 200 thousand tons of green polyethylene, Braskem is contributing with a yearly reduction in the emission of up to 500 thousand tons of CO₂, which is equivalent to neutralizing the emission of about 550 thousand vehicles per year*. Also, the sugar cane provides higher energetic productivity when compared to other energy sources, such as corn and beets.</p>	

The dissemination of the use of ethanol, with the development of the alcohol chemistry, helping to reduce the greenhouse effect has been continued by Braskem and is motivating other companies. Braskem has introduced, in Bahia, a product partially using renewable raw material: the ETBE. And, aligned with its strategy, Braskem disclosed in Oct/2010, the construction of another unit for producing renewable raw material with expected investments of about US\$ 100 million. This is a green propene plant, also derived from sugar cane ethanol, which shall have minimum capacity of 30 thousand ton/year and with startup predicted for the end of 2013. The preliminary eco-efficiency study has shown to be quite favorable, where every ton of produced green PP shall capture and fix up to 2.3 tons of CO₂. This shall allow the production of green polypropylene, which in its fossil base version is the second thermoplastic resin most used in the world. Green PP shall complement the portfolio of biopolymers of the company and shall allow new applications and partnerships.

***Based upon CO₂ emission of 1.0 cars with gasoline running 15 km per day during 1 year. Source: 2006 IPCC Guidelines for National Greenhouse.**

Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue

Rodrigo Belloli, responsible for Renewable Chemistry of Braskem
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Braskem S.A.

Renewable Based Polymers Braskem's Strategy

Key alignment(s) with the ten green economy conditions

- Resource efficiency and decoupling
- Life cycle approach

Description

Braskem is the largest petrochemical polymers producer of the Americas and the largest biopolymer producer of the world. It has twenty eight production's facilities at Brazil, five at US and two at Germany. Since its establishment in 2002 Braskem has been committed to conduct its businesses according the sustainable development principles.

Braskem defined three pillars for its sustainable development strategy: to have more sustainable processes; to have a more sustainable product portfolio and to offer solutions to the society for a more sustainable life. All of them depend on innovation and technology investment.

Related to its products portfolio Braskem innovation, efforts begun in 2007. An opportunity of developing a new process for a Polyethylene production based on renewable raw material was identified. Polyethylene is one of the most used plastic industry raw material. Traditionally this polymer is produced using fractions of fossils fuel (oil or gas). The challenge was to develop the same product in a totally different way. Considering the Brazilian already established ethanol from sugar-cane market, that has a higher energy efficiency process, higher ethanol productivity and stronger sustainable aspects for bio-fuels production, compared with others global bio-sources like corn (USA) and beat (Europe), a new industrial processes for ethylene (raw material for Polyethylene) was

developed. After more than 250 US\$ millions of investment, a new facility was started up at the end of 2010.

The sustainability contribution from this product is not only that it is based on renewable raw material. Considering its life cycle from cradle to the polyethylene production it has the capacity of capturing 2,5 tons of CO₂ equivalents per ton of polyethylene produced, because the source of its carbon is the CO₂ from the atmosphere, captured by the natural photosynthesis process that enables the growth of the sugar-cane, that is used for ethanol production, that is used for ethylene production.

Related to the market introduction this kind of solution has a very important advantage. Sugarcane based polyethylene is drop-in for the plastic industry. It means the plastic industry do not need to invest or change their equipments or process to run Braskem's bio-polyethylene. They can change from fossil fuel polyethylene to renewable based polyethylene because its performance characteristics are the same. These are the reason why Braskem first 200.000 ton per year facility is having national and international recognition from global leader companies and opinion makers. Some of our Clients are: Coca-cola, Procter and Gamble, Danone, Johnson and Johnson, Nestle, Tetrapack, Estrela, Natura, Faber-Castell, Channel and Toyota Tsusho. Some of 2011 awards are Prêmio Eco 2011, 2nd Top Ethanol and Bioplastics Award 2011 (Danone's Actimel case in Germany).

Another very important concern related to renewable based product is related to the environmental and social care considered at the agricultural side of the value chain. To manage those aspect Braskem established at 2010 a code of conduct for ethanol suppliers. This code of conduct defines specific requirements related to environmental and labor related practices. Nowadays more than 85% of the ethanol is bought from suppliers that are already in compliance with all those requirements. The others 15% will be achieved soon. Besides, Braskem was certified by ISCC (International Sustainability and Carbon Certification) in 2011 and became the first biopolymer producer to have such kind of sustainable certificate.

Braskem strategy is not limited to Polyethylene. Last year it already announced the renewable based Polypropylene. Polypropylene is the second most consumed polymer in the world after polyethylene, and it is most used by the automotive, appliance and packaging industry. The sugarcane based polypropylene project is another global pioneer project from Braskem and reinforce its sustainability strategy. The start up production of sugarcane based polypropylene is forecasted to the 2nd half of 2013.

Initiating Organization

Braskem S/A
www.braskem.com.br

Geographic Scope

Braskem's industrial facility for renewable based polyethylene production is located at Brazil.

The renewable based polyethylene is sold worldwide mostly at Europe, Japan, US and Brazil.

<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>Focus on clean technologies. Use of renewable based raw materials. Improvement in the environmental policy of the company focused in resource efficiency. Reduction of Greenhouse Gases emissions.</p>	<p><u>Type of Partners Involved/Wanted</u></p> <p>Engineering companies. Technology development centers and universities. Plastics Industry. Non Governmental Organizations.</p>
<p><u>Conditions for Success/Success Factors</u></p> <p>The project development had the support of decisive leadership, supported by 2020 Company's Vision, which seeks "to be the world leader in Sustainable Chemistry, innovating to better serve the people". Investments new products developments are only possible when there is entrepreneurial leadership commitment to sustainability issues.</p> <p>The support from some clients (especially Toyota Tsusho) during the development phase of the project was crucial.</p> <p>The training and entrepreneurial vision of the team were also key, because projects like has risks.</p>	
<p><u>Comments</u></p> <p>More information about the product is available at Braskem internet web site (www.braskem.com.br).</p>	
<p><u>Provide name of focal point for this engagement</u></p> <p>Rodrigo Belloli, Braskem Green Polyethylene Marketing Manager (rodrigo.belloli@braskem.com.br) and Jorge Soto, Braskem Sustainable Development Director (jorge.soto@braskem.com.br).</p>	

Key alignment(s) with the ten green economy conditions

- Awareness
- Life cycle approach
- Metrics, accounting and reporting
- Governance and partnerships

<p><u>Description</u></p> <p>Responsible Care (RC) is the <u>global</u> chemical industry's environmental, health and safety (EHS) initiative to drive continuous improvement in performance. It achieves this objective by meeting and going beyond regulatory compliance, and by adopting cooperative and voluntary initiatives with government and stakeholders. RC is an ethic and an industry commitment that seeks to build confidence and trust. The RC Global Charter (2006) goes beyond the original elements of RC (Health, Safety and Environmental improvement of processes and products and communicating about it), focusing on new and important challenges facing the chemical industry and global society, including the dialogue over Sustainable Development, public health issues related to the use of chemical products, need for a greater industry transparency and the opportunity to achieve greater harmonization and consistency among the national RC programmes currently implemented. The European Chemical Industry Association Cefic is developing and coordinating Responsible Care implementation in the existing and new European Countries.</p>	
<p><u>Initiating Organization</u></p> <p>European Chemical Industry Association (Cefic); http://www.cefic.org/Responsible-Care</p>	<p><u>Geographic Scope</u></p> <p>Regional: Europe (EU 27 + North Africa)</p>
<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>A best practice toolkit for implementing Responsible Care for SMEs has been developed. The kit brings together for the first time validated tools on chemicals management, energy efficiency, occupational health, process safety, transport safety, environment, product chain and other areas. This toolkit has been developed in the context of 'PRISME2', an EU wide project started by Cefic in 2008 with support of EMCEF.</p>	<p><u>Type of Partners Involved/Wanted</u></p> <p>Partners involved in this specific toolkit for SME companies are the national chemical associations, multinational chemical companies, selected SME companies. The European Mine, Chemical and Energy Workers' Federation and other partners like trade unions, institutions and agencies.</p>

Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success

Implementing Responsible Care tools in SME level companies is very complex. These companies lack resources and relevant knowledge. The toolkit contains instruments for SME sized companies to efficiently improve the HSE performance of the company. The toolkit will be successful if a) SME companies are aware of the existence of the Cefic toolkit, b) companies are able to use the toolkit (fit for use), c) companies can show RC improvement bases on using the toolkit, thus a reduced HSE impact in their processes or products downstream.

There exists a major role for the national chemical associations to support the implementation of Responsible Care within their membership. The national association in the less mature countries of the European Union sometime lack resources and appropriate knowledge, mentorship is being developed.

Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.

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Credit Suisse AG & WWF Switzerland

The Role of Banks in the Transition to a Low Carbon Economy

Key alignment(s) with the ten green economy conditions

- Finance and investment
- Governance and partnerships

Description

For many observers, the outcome of the UNFCCC Climate Conference, held in Copenhagen in December 2009, proved disappointing. One of the outcomes of the conference that is often overlooked, however, was a broad agreement among the parties that global warming must not exceed two degrees Celsius over pre-industrial levels. According to the IPCC (2007) there is also a worldwide scientific consensus that this requires industrialized countries to reduce their emissions of greenhouse gasses by 80 to 95% by 2050, while emerging economies would need to embark on a low carbon development path.

While several studies have shown that this transition can be achieved at moderate overall cost, it does imply a substantial realignment of industry sectors within the global economy. An increase in carbon productivity will require substantial capital investment into the technologies needed for rapid decarbonization. The banking sector has not, on the whole, been a driving force behind the inflows of capital into the cleantech sector so far. Few banks today have an overall strategy for how to position themselves in the shift to a low carbon economy – a shift that brings substantial risks in terms of an unknown carbon exposure in banks' balance sheets, but also opportunities on a historical scale.

Credit Suisse and the WWF network, with academic support of the Swiss Federal Institute of Technology Zurich, teamed up in 2011 to evaluate possible business models for banks on how to address these issues. The idea was to develop a thoughtful publication addressing how banks will have to adapt to, and what role they will have in facilitating, the transition to a society that is more carbon-constrained than the society of today. Part of the study was to identify actionable options - both in terms of risks and opportunities - of how banks might strategically position themselves to profit from and support rapid decarbonization.

The findings of the study suggest, that, although many financial, technical and structural barriers need to be addressed by governments and regulations, banks can make a significant contribution towards decarbonisation beyond 'business as usual'.

The study was published in October 2011 and is available online: https://infocus.credit-suisse.com/data/_product_documents/_shop/324153/wwf_paper_low_carbon_economy.pdf

Initiating Organization

- Credit Suisse AG (<https://www.credit-suisse.com/ch/en/index.jsp>)
- WWF Switzerland (<http://www.wwf.ch>)

Geographic Scope

The findings of the report apply globally. The working group consisted of members from the US and Europe, and was led by a project team based in Switzerland.

<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>By drawing on WWF's global resources and perspectives, Credit Suisse was able to better understand current environmental trends, their market impacts, and by implication the clients' needs.</p> <p>For WWF, the collaboration has shed light on the question of how banks can make a significant contribution towards decarbonization, which goes far beyond 'business as usual', in the interest of their shareholders, clients and the planet as a whole.</p> <p>And the integration of academia into the project offered a fresh perspective on long-debated issues. Also, it allowed to base assumptions and conclusions on sound scientific data.</p> <p>A key finding of the study has been that a bank should define its own individual strategy with regard to decarbonization, as appropriate to its specific business model. Clearly, opportunities and risks will not be the same for all banks. A starting point should be a comprehensive assessment of risks and opportunities taking into account the bank's business model and its appetite to play a leadership role in this area. And this is certainly an area, which would lend itself to further cooperation between the private sector, society and academia.</p>	<p><u>Type of Partners Involved/Wanted</u></p> <ul style="list-style-type: none"> - Various experts at Credit Suisse - Various experts at WWF Switzerland - Experts at the Swiss Federal Institute of Technology Zurich
<p><u>Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success</u></p> <p>In order to be able to define success after the completion of the project, all partners involved need to agree on common objectives prior to the start of the collaboration. Once this has happened, it is crucial to have regular discussions during the entire project phase among the collaborators about the direction of the project, and whether each partner is pleased with the progress made vis-à-vis its individual objectives. If these conditions are met, all partners involved in the project should be satisfied with the results achieved.</p>	
<p><u>Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.</u></p> <p>Fabian Huwyler Credit Suisse AG Public Policy – Sustainability Affairs (IPA 1) Email: fabian.huwyler@credit-suisse.com Tel. : +41 44 333 60 68</p>	

Dow

Dow and The Nature Conservancy collaborate to improve ecosystem services valuation methods and practices

Key alignment(s) with the ten green economy conditions

- Awareness
- Education and skills
- Employment
- Resource efficiency and decoupling
- Life cycle approach
- Open and competitive markets
- Metrics, accounting, and reporting
- Finance and investment
- Integrated environmental, social and economic policy and decision-making
- Governance and partnerships

<p><u>Description</u></p> <p>Dow and The Nature Conservancy announced a breakthrough collaboration to help Dow and the business community to recognize value and incorporate nature into global business goals, decisions and strategies. Over the course of five years, Dow and The Nature Conservancy are working together to implement and refine ecosystem services and biodiversity assessment models at three Dow sites around the globe. These sites will serve as “living laboratories” for developing, testing and implementing scientific and economic methods that can be used by Dow and other companies to improve business practices through conservation.</p>	
<p><u>Initiating Organization</u></p> <p>The Dow Chemical Company http://www.dow.com/sustainability/change/nature_conserv.htm</p>	<p><u>Geographic Scope</u></p> <p>Learning, models and tools resulting from the collaboration can be applied globally. Pilot sites have been identified in Texas and Brazil with a third to be announced later in 2012.</p>
<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>Since the launch of the Collaboration, the Conservancy and Dow have been working together to identify key biodiversity and ecosystem services that Dow impacts and depends upon at priority sites around the world. Dow’s Texas Operations in Freeport was the first selected pilot site, following co-developed site selection criteria. From the identified dependencies and impacts, three ecosystem services were determined to have high value for investigation: Freshwater, Air Quality Mitigation, Coastal Natural Hazard Mitigation.</p>	<p><u>Type of Partners Involved/Wanted</u></p> <p>Governments, universities, other industry collaborators, other non-governmental organizations, inter-governmental organizations</p>

In parallel to the work at pilot sites, the Collaboration is developing tools that will inform corporate decision-making. The first is a Biodiversity and Ecosystem Services (BES) Assessment Tool to provide business managers quick access to information on potential corporate risks and opportunities related to BES (initial version created of this tool will be beta-testing and publishing it in 2012). The Collaboration is beginning to work to integrate biodiversity and ecosystem services data and considerations into Dow's work processes. More details on progress and objectives available on the "The Dow and TNC Collaboration, 2011 Progress Report".

Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success

Funding, trust between collaborators, scientific expertise, decision-making process modifications, collaboration across industry, government, academia, civil society

Comments: Please list any additional Statements, messages or call for action you may wish to gather from the audience.

We are intending to learn and publish as we proceed in this collaboration. We welcome input from anyone and everyone!

Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.

Mark Weick
 Director, Sustainability Programs
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Key alignment(s) with the ten green economy conditions

- Awareness
- Education and skills
- Resource efficiency and decoupling
- Open and competitive markets
- Metrics, accounting, and reporting
- Integrated environmental, social and economic policy and decision-making
- Governance and partnerships

<p><u>Description</u></p> <p>The Dow S⁴TAR program is a mutually beneficial initiative from the Dow Business Services Group to promote business growth for both Dow and our Supply Chain partners in a sustainable manner. The program helps Dow's Supply Chain partners achieve advancements in Safety, Sustainability, Social Responsibility, and Services. Dow hopes to raise the sustainability bar of the industry by sharing the company's expertise in Responsible Care practices.</p> <p>The Dow S⁴TAR award is designed to encourage sustainability excellence in Dow's supply chain partners. It provides a specific framework to recognize our partners who exhibit exceptional performance. The Dow S⁴TAR Program is a long-term program with a kickoff in November 2011. From 2012 onwards, performance requirements will be set in the areas of Safety, Sustainability, Social Responsibility, and Services. Through quarterly and yearly evaluations with a fair and transparent process, the S⁴TAR awards will be presented to the Best Carrier, Best Warehouse, and Best Freight Forwarding Service at the end of each year.</p>	
<p><u>Initiating Organization</u></p> <p>The Dow Chemical Company www.dow.com</p>	<p><u>Geographic Scope</u></p> <p>Asia Pacific</p>
<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>The Dow S⁴TAR program demonstrates Dow's resolution for the best service to our customers and the sustainable goal of development for the vendors. It offers a great platform for Dow and vendors to maintain communication, share experiences and grow together. It also offers a great opportunity for Dow to promote its core values in service delivery, and set a model for its high awareness in Safety, Sustainability, Social Responsibility, and Services.</p>	<p><u>Type of Partners Involved/Wanted</u></p> <p>Dow supply chain suppliers</p>

Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success

The Dow S⁴TAR program is designed to encourage sustainability excellence in Dow's supply chain partner, which provides a specific framework to recognize our partners who exhibit exceptional performance. This is a win-win partnership program promoting supply chain excellence for the business growth of both Dow and its supply chain partners.

Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.

Project Leader:
Niklas Meintrup
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Dow

Dow Sustainability Innovation Student Challenge Award (SISCA)

Key alignment(s) with the ten green economy conditions

- Awareness
- Education and skills
- Governance and partnerships

Description

The Dow Chemical Company established this annual Student Challenge Award in 2009 with 6 strategic universities and it has extended to 17 Universities in 2012. The competition has been designed to drive sustainable innovation and interdisciplinary approaches to solving world challenges.

Students should be motivated and recognized for their ideas in the area of Sustainability. SISCA is aligned to the companies' 2015 Sustainability Goals.

Initiating Organization

The Dow Chemical Company
<http://www.dow.com/sustainability/studentchallenge/>

Geographic Scope

The Scope of SISCA is global and has been expanded in 2012 to currently include 17 Universities (USA, Brazil, Mexico, China, Saudi Arabia, The Netherlands, UK).

<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>Learning: Students have a very high interest in Sustainability and the challenge is highly regarded by both, students and faculty. Many of the projects that are submitted are taken further. Working with universities that have a high interest and expertise in Sustainability is key. This drives the quality and the interdisciplinary factors of the student projects.</p> <p>Existing relationships with the chosen universities have also been an integral part during the last years. Improvements can be made in the connection between universities and also with Dow to inspire students.</p>	<p><u>Type of Partners Involved/Wanted</u></p> <p><u>Academia</u> List of Universities currently engaged can be found here: http://www.dow.com/sustainability/studentchallenge/universities.htm</p>
<p><u>Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success</u></p> <ul style="list-style-type: none"> • Funding • Resources • Continued and increased relationships between Academia and Industry 	
<p><u>Comments: Please list any additional Statements, messages or call for action you may wish to gather from the audience.</u></p> <p><u>Dr. Neil Hawkins, Vice President, EH&S & Sustainability (The Dow Chemical Company)</u> "In order to achieve a more sustainable future, it's essential that we cultivate fresh ideas, innovative thinking and multidisciplinary learning among tomorrow's leaders who will be the champions of change. SISCA harnesses the energy, commitment and enthusiasm of students to craft real-world solutions, while building a robust collaboration between industry and academia."</p>	
<p><u>Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.</u></p> <p>Ursina Kohler SISCA program manager and external engagement manager Email: ukkohler@dow.com</p>	

Dow

International Employee Volunteerism Powered by Unique Collaborations

Key alignment(s) with the ten green economy conditions

- Awareness
- Education and skills
- Employment
- Governance and partnerships

<p><u>Description</u></p> <p>Dow has crafted international partnerships through Dow Sustainability Corps (DSC) efforts. The DSC makes use of relationships with a diverse set of partners to reach its goals of Impacting World Challenges and Partnering for Change (www.dow.com/sustainability/goals/Cached). Another step that Dow took in helping to reach its goals was the role we played in creating the International Business Corps (IBC) in partnership with the Business Civic Leadership Center. The IBC is an action-oriented, multi-company collaborative approach to volunteerism. Through IBC, individuals from companies work together on projects and leverage their core skills as well as their resources. The IBC continues to invite companies to join this dynamic approach to solving the world's most pressing challenges.</p>	
<p><u>Initiating Organization</u></p> <p>Dow has partnered with the Business Civic Leadership Center (BCLC) to create and launch an innovative approach to international corporate volunteering with the objective of helping NGOs and Social Entrepreneurs build captivity and effectiveness.</p> <p>http://bclc.uschamber.com/article/international-business-corps</p> <p>http://www.dow.com/sustainability/commit.htm</p>	<p><u>Geographic Scope</u></p> <p>Dow's Sustainability Corps and International Business Corps engagements are both global in scope with specific objectives to assist those in need in growth geographies.</p>
<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>Through Dow's involvement in the referenced activities, DSC has provided volunteers with the opportunity to share their knowledge while at the same time experiencing personal and professional development. Participants have gained a better understanding of world problems and business opportunities while developing leadership skills and other capabilities. The business corps concept has been responsible for creating a platform for multi-company collaboration, joint learning and discovery in new markets.</p>	<p><u>Type of Partners Involved/Wanted</u></p> <p>To accomplish the referenced goals, Dow has partnered with industry partners, National Chambers of Commerce, universities, NGOs and social entrepreneurs...</p>

Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success

Dow's capacity building efforts in strategic geographies will be bolstered by the engagement of additional private sector partners. New partners will help Dow share risk and resources across its various program initiatives.

Comments: Please list any additional Statements, messages or call for action you may wish to gather from the audience

We believe that through our multiple collaborations "together we can all do more."

Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue

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The Dow Chemical Company

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Dow

Product Stewardship Day across Asia countries

October 21st, 2011 in India and October 28th, 2011 for the rest of Asia

Key alignment(s) with the ten green economy conditions

- Awareness
- Education and skills
- Resource efficiency and decoupling
- Life cycle approach
- Governance and partnerships

Description

The DAS Product Stewardship Day program in Asia countries for growers was aimed at promoting Responsible Care through training and education on Good Agriculture Practices and to demonstrate to DAS (Dow AgroScience) business partners, community we serve and key stakeholders, DAS commitment to sustainable agriculture through crop protection product stewardship. Events were conducted in collaboration with DAS distributors/dealers/retailers, local government agriculture authorities and plant protection agencies and national Croplife associations across Asia. The goal is to educate growers on responsible use of crop protection products throughout their lifecycle.

The training sessions conducted covers the following topics:

- 1) Responsible use of crop protection products
- 2) Safety measures when storing or transporting crop protection products
- 3) Importance of personal protective equipment while using crop protection products

- 4) Proper calibration and application techniques
- 5) Spraying equipment maintenance
- 6) Container recycling and disposal
- 7) Danger of using counterfeit products

During DAS Product Stewardship Day, trainings were conducted in 150 different locations across Asia. A total of 8,115 growers, 890 DAS customers, 220 local government personnel, 341 university students and 16 DAS carriers benefited with improved knowledge on the appropriate handling of crop protection products.

This is the second successive year that DAS has dedicated a whole day to focus on product stewardship activities across Asia countries. During the first year, on October 15, 2010, DAS educated 8,495 growers, 730 customers, 461 government personnel, 260 university students and 11 DAS transporters on Good Agriculture Practices.

Safety equipment like gloves, boots, and apron were given free to all participants.

Initiating Organization

Dow AgroSciences Asia RCU

Geographic Scope

Asia

Experiences of Best Practice or Potential Goals of the Collaboration

- 1) Leadership support and resource commitment
- 2) Project team at country level
- 3) Collaboration and engagement from DAS internal staff, local agriculture authorities, dealers/retailers and national Croplife associations
- 4) Presentation topics strictly focused on responsible use
- 5) Post-training survey to determine level of behavioral change towards responsible use

For Proposed Collaborations: Please briefly state the anticipated goals of collaborating with other.

Engagement to cascade stewardship education throughout farming communities. Common understanding of Product Stewardship expectations and ultimately a safer product use, handling, storage & disposal of crop protection products.

Type of Partners Involved/Wanted

Farmers' Associations
Distributors
Dealers
Retailers
Department of Agriculture
Universities
Press
Country Croplife Associations

Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success

Support and engagement from both DAS Commercial Leadership and Dow EH&S Leadership on program and allocate resources to enable successful implementation and follow-up at country level. Engagement with local government departments to cascade stewardship education and to advocate anti-counterfeiting and illegal crop protection products

Comments: Please list any additional Statements, messages or call for action you may wish to gather from the audience.

- 1) Participants appreciate DAS interest in promoting safety without business motive
- 2) Croplife Asia will leverage DAS experience and will organize similar events in China, India, Vietnam and Indonesia in 2012

Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.

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Dow

The Dow Chemical Sustainability Footprint Tool[®]

Key alignment(s) with the ten green economy conditions

- Awareness
- Education and skills
- Resource efficiency and decoupling
- Life cycle approach
- Open and competitive markets
- Metrics, accounting, and reporting
- Integrated environmental, social and economic policy and decision-making

Description

The Dow Chemical Sustainability Footprint Tool[®] is a high level tool that can indicate the extent to which a product development project can contribute to a more sustainable world while simultaneously increasing the tool user's understanding of sustainability. The tool is based on the belief that the long term commercial success of a product development project is likely to increase if:

- the economics of value chain service provision to end users is improved;
- society is enhanced;
- the bio-sphere is conserved;
- humans are not harmed; and
- resources remain available.

Because engaging busy focused employees in a topic that they may know little about and where they may not fully understand the relevance to their specific business was seen as challenging, the Dow Chemical Sustainability Footprint Tool[®] was developed to have the following attributes:

- be self-explanatory;
- be easy and quick to use by R&D engineers or teams with limited knowledge of sustainability criteria;
- be applicable to all projects (including those with an internal focus; for example, manufacturing plant improvements);

- instantly communicate the sustainability advantages and opportunities in a visually engaging way;
- provide a record of what was considered when rating a particular sustainability attribute;
- be informative of sustainability criteria.

Also, the data from project evaluations can be easily compiled into reports that inform management about the sustainability status of a business's portfolio of product development projects as well as which sustainability areas are well represented and which remain areas of opportunity.

A paper has been published that describes the underlying concept in more detail: **Russell, David .A.M.; “Life cycle sustainability based innovation: tools for an integrated approach”**; Proceedings of the Life Cycle Management Conference LCM 2011; Berlin, August 2011. The paper can be downloaded using the following link: www.lcm2011.org/papers.html?file=tl_files/pdf/paper/24_Session_LCM_in_the_Chemical_Sector/1_Russell-Life_cycle_sustainability_based_innovation-795_b.pdf

Initiating Organization

The Dow Chemical Company
www.dow.com

Geographic Scope

Global

Experiences of Best Practice or Potential Goals of the Collaboration

Experience to date shows **The Dow Chemical Sustainability Footprint Tool®** to be self explanatory, easy and quick to use. There has been a clear increase in the sustainability knowledge amongst those innovators who have used the tool. Also, the compiled results of these assessments are providing management with useful sustainability perspectives of their project portfolios that are allowing them to better track progress in addressing sustainability opportunities.

Type of Partners Involved/Wanted

Engagement at this time is restricted to key Dow customers and important members of Dow's value chains.

Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success

Broad implementation within Dow and increasing engagement in sustainability with key customers and important members of Dow's value chains.

Comments: Please list any additional Statements, messages or call for action you may wish to gather from the audience.

This tool has the multiple components of education, project evaluation and project portfolio management and has been deliberately focused at an entry level of user sustainability knowledge. Clearly, other versions of the tool may be developed to examine corporate rather than project aspects of sustainability, or for more sophisticated users who already have a grounding of sustainability knowledge.

Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.

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Dow

The Dow Product Stewardship (PS) program at Distributors/Channels to Market in Asia Pacific Region

Key alignment(s) with the ten green economy conditions

- Awareness
- Education and skills
- Resource efficiency and decoupling
- Governance and partnerships

Description

The Dow Product Stewardship (PS) program at Distributors/Channels to Market in Asia Pacific Region is a leveraged program supported by Business Product Stewardship Specialists (PSS) and Country Product Regulatory Services team. It aims to work with our value chain partners to sustain their environmental, social and economic success for the long term. This effort will also improve confidence that Dow products are managed safely throughout their lifecycle and help reduce public concerns as a result of increasing expectations from consumers and regulatory authorities.

The Distributor PS sessions conducted covers the following:

- 1) Provide Dow general PS training & communicate Dow PS expectations
- 2) Country Regulatory updates & End Use Regulations applicable for Dow products
- 3) Distributors conduct self-assessment & return to Dow to determine Gaps/suggestions to improve.
- 4) Locally based Commercial Leader/Country Manager will typically host the session

Up to now, 457 distributors from Asia Pacific countries/area (including China, India, Indonesia, Japan, Korea, Malaysia, Philippines, Singapore, Taiwan, Thailand, and Vietnam, etc.) have attended the training and refresh-training since the program started in 2008.

Initiating Organization

Dow Pacific entities

Geographic Scope

Pacific – now leveraging to other regions

<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <ol style="list-style-type: none"> 1) Leadership support & resource commitment 2) Project team at country level 3) Collaboration & engagement from sales, product stewards, Product Regulatory Services 4) Review self-assessments & identify gaps for improvement <p>For Proposed Collaborations:</p> <p>Common understanding of Product Stewardship expectations and ultimately a safer product use, handling, storage & disposal of Dow products.</p>	<p><u>Type of Partners Involved/Wanted</u></p> <p>Channels to market/ distributors</p>
<p><u>Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success</u></p> <p>Support from both Commercial Leadership and EH&S Leadership on program, resources to enable successful implementation and follow-up at country level and engagement with Dow channels.</p>	
<p><u>Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.</u></p> <div style="display: flex; justify-content: space-between;"> <div data-bbox="199 1122 547 1189"> <p>Ms. Audrey Boon Email: akboom@dow.com</p> </div> <div data-bbox="772 1122 1120 1189"> <p>Ms. Lingzhen Dong Email: LZDong@Dow.com</p> </div> </div>	

ECVM – European Council of Vinyl Manufacturers

Vinyl 2010 and VinylPlus

Key alignment(s) with the ten green economy conditions

- Awareness
- Resource efficiency and decoupling
- Life cycle approach
- Integrated environmental, social and economic policy and decision-making
- Governance and partnerships

<p><u>Description</u></p> <p>Vinyl 2010 – the Voluntary Commitment for Sustainable Development of the European PVC industry – was a 10-year plan to progress the PVC industry towards sustainability by minimising the environmental impact of the PVC production, promoting responsible use of additives, supporting collection and recycling schemes, and encouraging social dialogue between all of the industry’s stakeholders. The Voluntary Commitment was set up by the four associations representing the PVC industry chain in Europe and originally signed in March 2000. It had clearly defined measurable targets and deadlines, and a transparent, regular, externally verified reporting system.</p> <p>Since October 2004, Vinyl 2010 has been a Partnership registered with the Secretariat of the UN Commission on Sustainable Development. At the end of 2010, Vinyl 2010 has reached the end of its foreseen lifetime, succeeding in meeting or exceeding all of the targets set. Building on its achievements, the European PVC industry launched a new 10-year commitment towards sustainability, VinylPlus, in June 2011. VinylPlus is even more ambitious than its predecessor in terms of targets and scope, with a view to realising the full market potential and societal benefits of sustainably produced PVC.</p>	
<p><u>Initiating Organization</u></p> <p>ECVM – the European Council of Vinyl Manufacturers EuPC – the European Plastics Converters ESPA – the European Stabiliser Producers Association ECPI – European Council for Plasticisers and Intermediates www.vinyl2010.org and www.vinylplus.eu</p>	<p><u>Geographic Scope</u></p> <p>Regional, Europe</p>
<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>Vinyl 2010 is widely regarded as a leading example of industry self-regulation working in practice and delivering concrete results. All major targets have been met or exceeded, and a new sustainable business model involving the whole PVC value chain has been created. Comments received by EU MEPs are encouraging and stimulating the PVC industry to work even harder in order to accomplish the new, more ambitious goals set by the VinylPlus commitment.</p>	<p><u>Type of Partners Involved</u></p> <p>PVC value chain (around 21,000 companies, the majority of which SMEs) EU Commission and Parliament Consumers organisations NGOs</p>

Success Factors

Vinyl 2010 operated through projects covering technology, research, organisation (e.g. recycling schemes) and communication (e.g. on best practice).

The establishment of an infrastructure for the collection and recycling of PVC in Europe is one of the most significant achievements of Vinyl 2010. Prior to 2000, PVC had been dismissed by many as an 'unrecyclable material' destined to be landfilled. At the time there were virtually no recycling systems in place. Today, thanks to Vinyl 2010, over 260,000 tonnes of post-consumer waste were recycled in 2010 alone.

Other notable achievements include:

- The phasing-out of Cadmium stabilisers from PVC products in the EU-27 by 2007. Lead stabilisers are on track to be fully replaced by 2015.
- On-going research, testing and expert evaluations of PVC plasticisers.
- The establishment of a Research & Development programme on new recycling and recovery technologies.

Vinyl 2010 has been a learning-by-doing process, and in a certain way it has helped to revolutionise the PVC value chain in Europe. In our experience success factors were:

- Involving the entire industry chain, to improve product stewardship across the whole life cycle of PVC;
- Setting concrete and measurable target and deadlines;
- Being open and transparent, closely involving stakeholders and policy makers with an independent Monitoring Committee, in the implementation of the Voluntary Commitment. The Committee included representatives from the European Parliament, the European Commission, trade unions and consumers' associations.
- Setting a transparent regular reporting system, with a yearly Progress Report reviewed and verified by external independent auditors.

The key to the success and spreading of such voluntary initiatives is that they are recognised by policy-makers and stakeholders as making a real contribution towards Sustainable Development and a Greener Economy.

Comments: Please list any additional Statements, messages or call for action you may wish to gather from the audience

Based on its experience Vinyl 2010 (and now VinylPlus) suggest considering the following aspects:

- Support and recognise Voluntary Agreements and Public-Private Partnerships as effective tools for a faster transition to a Green Economy.
- Strengthen the role of the UNCSD Partnerships for Sustainable Development.
- Support Micro, Small and Medium enterprises in their transition towards a Green Economy.
- Adopt a Life Cycle Assessment (LCA) approach based on sound science for sustainable Green Growth.
- Policy-makers should take account of the achievements of initiatives such as Vinyl 2010 and support voluntary agreements when formulating new policies to promote sustainable Green Growth.

Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue

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Evonik Industries AG

Carbon Footprint Estimation Tool for R&D

Key alignment(s) with the ten green economy conditions

- Resource efficiency and decoupling
- Life cycle approach

<p><u>Description</u></p> <p>Evonik has developed a standardized method, called Carbon Footprint Estimation (CFE) for the quantification of potential climate change impacts for research projects in early stages of development. The CFE model allows a standardized evaluation of projects pertaining to their carbon emissions and savings in all phases of product systems and ensures that Evonik projects are screened according to a comparable set of criteria. It is especially useful as a reference method to determine the potential CO₂eq impacts or savings of projects in R&D departments. It is designed as a pragmatic approach based on ISO 14040/44 and the criteria of the GHG Protocol to support innovation processes with meaningful sustainability assessments, even in the early stages when uncertainty is still high.</p>	
<p><u>Initiating Organization</u></p> <p>Evonik Industries AG, Germany</p>	<p><u>Geographic Scope</u></p> <p>Developed at Evonik Germany to be implemented globally in Evonik business units' R&D departments</p>
<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>Three main risks arise: Risk of incomplete data Risk of poor data quality Risk of badly chosen calculation approach</p> <p>To cope with these risks, a separate handling procedure for each risk category has been created. The risk of incomplete data is handled by setting a preference for specific data sources in our internal guidance. The risk of incorrect results can arise when employing weak or unconventional calculation methods (e.g., inappropriate emission factors). One way of minimizing the risk of a well-thought-out but unattested calculation approach is to rely on established product category rules (e.g., within the industry, the lifetime/distance of a passenger car is set at 150,000 km or the daily operating time of a notebook is set at 8 hours). Evonik uses such product category rules whenever these are available.</p>	<p><u>Type of Partners Involved/Wanted</u></p> <p>Upstream and downstream industry partners to create a continuous process of data quality improvement.</p>

Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success

Commitment of all players. ie. Engineering, facilities, environment staff, R&D experts as well as the commitment to accept the created guidelines.

The CFE team consists of an instructor, practitioners, an inspector and a supervisor. It is required that at least two practitioners work together on the CFE – one LCA team member and one member of the project group for whom the CFE is performed. The inspector must be an experienced LCA team member and cannot also be a practitioner. The supervisor ensures an accurate workflow and grants the final approval of the CFE. The supervisor must be a person or consist of a board with the necessary authority to deploy the CFE results (e.g., for internal or marketing purposes). Both the underlying CFE process and methodological requirements of the CFE model have been formalised in internal guidance documents.

Comments: Please list any additional Statements, messages or call for action you may wish to gather from the audience

Another important aspect of the CFE methodology is the allocation of an appropriate share of emission savings during the in-use phase of product applications which are manufactured by Evonik customers further down the value-added chain. Two principles to allocate savings to the Evonik product application are possible. If the Evonik product is absolutely essential to generate CO₂eq savings, 100% of the savings are accredited to this product, hence an “enabler”. If the Evonik product is not exclusively essential for the CO₂eq savings, the savings are allocated by either a functional or a cost-share approach. Both calculation approaches are acceptable when accompanied by clear and reasonable justification.

Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.

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F. Hoffmann-La Roche Ltd

Roche Basel Energy Mission 2020

Key alignment(s) with the ten green economy conditions

- Awareness
- Education and skills
- Employment
- Resource efficiency and decoupling
- Life cycle approach
- Open and competitive markets
- Metrics, accounting, and reporting
- Finance and investment
- Integrated environmental, social and economic policy and decision-making
- Governance and partnerships

Description

Roche has realized that only environmentally and socially responsible companies can achieve sustainable development and financial success. Therefore Roche is strongly committed to minimizing its Group-wide environmental footprint and to contributing to a sustainable energy future.

To achieve the self-imposed objectives at the headquarters site, an energy mission statement has been developed, implementation of which started in 2005. The concept is based on three elements:

- **Reduce energy consumption,**
- Employ commercially available, **innovative technologies** to optimize energy consumption
- Use **energy from sustainable sources** to meet remaining energy requirements

In 2005, the overall energy consumption at Roche's headquarters site in Basel, Switzerland was 1.6 million GJ for fuel gas, electricity and business travel. This equals a European city of 30,000 people. When all measures have been fully implemented in 2020, the **environmental footprint** per employee will be improved by **50%** (measured as eco factors www.bafu.admin.ch/publikationen/publikation/01031/index.html?lang=en), **energy efficiency** by **35%** (measured as GJ per year and employee), and the **share of sustainable energies** in total energy consumption will be increased to **40%**. In absolute terms, 9 million m³ less fuel gas will be burned at the site. This results in **21,000 t** or 30% **fewer CO₂ emissions** per annum (equals 10,000 fewer cars on the roads).

Implementing the energy objectives means **reducing energy consumption** by a lot of different measures, such as using the waste heat generated by production processes to directly heat buildings in winter, installing energy-efficient office equipment and lighting systems, identifying deviations and areas with the potential for energy savings at the site by using a state-of-the-art energy measurement system, providing video conferencing facilities to avoid business travel or carefully optimizing energy parameters during commissioning of new production plants and facilities.

High energy savings will be achieved by refurbishing all old buildings over the next years.

The largest overall potential for reducing energy consumption will be created by using **innovative technologies**. This can be very cost-attractive if implemented in a forward-looking manner:

The shift from large-scale production towards the small-scale manufacture of highly active and sensitive pharmaceuticals and the availability of new air conditioning technologies has changed the energy demand pattern at the site. A few years ago large quantities of energy-intensive steam were required for the production processes and air humidification. The technology normally used to produce this steam was a gas burner. Today we require a similar energy quantity, but as tempered water for the state-of-the art air conditioning systems in our production facilities and laboratories; very little steam is required these days.

Since 2005, all on-site cooling systems using CFC refrigerants have been replaced by new ammonia chillers. These large refrigeration plants can also be used as very efficient heat pumps (HPs) to produce cooling water and the required tempered water simultaneously.

In addition, a gas-driven engine will co-generate power, tempered water and the remaining steam requirements. This combined heat and power generation (CHP) is extremely efficient and therefore ecologically worthwhile for as long as the international power grids are not supplied entirely from sustainable sources. Once all old buildings will have been refurbished and equipped with new air conditioning systems, the energy obtained from the HPs and CHPs will be sufficient to cover all the heating needs of the site for air conditioning as well as production.

The remaining energy consumption is covered by using energy from **sustainable sources** as far as this is feasible. The Rhine and process waste heat are used as sources for the heat pumps. Groundwater is used as the cooling medium for production, while low-temperature ambient air can be used for cooling in air conditioning systems. Electricity is purchased entirely from sustainable energy sources, mainly local hydropower.

Initiating Organization

F. Hoffmann-La Roche Ltd
www.roche.com

Geographic Scope

- Roche's sustainability goals and commitment apply to the entire Roche Group in all countries where we do business. This specific concept was developed and implemented for Roche's headquarters in Basel, Switzerland.

Experiences of Best Practice or Potential Goals of the Collaboration

- Forward-looking installations of innovative and sustainable energy systems can be highly attractive from the economic perspective (reduced consumption, risk mitigation) in the case of business-driven investments if opportunities due to changed conditions and new technologies are exploited.
- Engineers with an excellent knowledge of both production process requirements and energy generation/distribution systems are key.

Type of Partners Involved/Wanted

- Several industry partners are involved as vendors of new technologies and systems.
- Local authorities as supportive partners and several Bachelors and Masters Theses by students at university institutes provided important input.

Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success

- Availability of highly educated engineers
- Acceptance of holistic assessment of measures – the environment does not recognize site borders
- Solution oriented co-operation with communities and authorities
- Management and shareholders who support this long-term thinking

Comments: Please list any additional Statements, messages or call for action you may wish to gather from the audience.

- We all need to recognize that a company can only achieve sustainable success when our environmental and social responsibilities are met.
- Long-term prosperity for future generations can only be assured if we succeed in using our available environmental resources in a sustainable and renewable manner.
- The required technologies need to be further developed and investigated.
- We need to invest in the education of the necessary scientists and engineers.

Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue

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Federation of Industries of Paraná (FIEP) & Social Service of Industry (SESI)

Movement We Can Paraná

Description

In September 2000, in New York, leaders of 189 countries signed a pact during the Millennium Summit, sponsored by the United Nations (UN). In that agreement, the Millennium Declaration was born, which was established as a priority to eliminate extreme poverty and hunger in the world until 2015. For this purpose, eight goals were defined, the Millennium Development Goals (MDGs) to be achieved through specific actions to combat hunger and poverty, associated with the implementation of health policies, sanitation, environment, education, housing, promotion of gender equality and compact for development.

The targets were detailed in eight goals and 18 targets which may be accompanied by a set of 48 socioeconomic indicators. In 2000 the government of Brazil signed the pact of the MDGs, the actions to achieve the MDG were initiated in 2004 with the foundation of the National Movement for Citizenship and Solidarity which was composed by the second and third sector, through the work of society by means of social responsibility projects.

In State of Paraná, the Millennium Development Goals got greater extent. In 2006 the state took on the challenge of anticipating the achievement of the Millennium Goals for 2010, five years before the time fixed by the UN. As a result of this initiative “We Can Paraná Movement” was established, which is a proposal of Social Service of Industry of Paraná (SESI-PR). The We Can Paraná Movement was structured through integrated and participatory debate circles, implementing and deploying to enhance existing local activities and projects, divided into:

Dialogue Circles - Local meetings, with the participation of specialists, government and community, to define priority areas, targets, actions and projects to be implemented.

Workplaces Circles for the Integrated Development - Groups of people composed of different social actors, engaged in each municipality, with the role of organizing local dialogues; to help to reach feasible targets; prioritize actions and projects; define an implementation plan and monitor the evolution of the local program.

Knowledge Circles - Group composed of people from different social groups, with the role of analyzing and identifying local opportunities, potential projects and actions to be presented in local forums.

The method of the Dialogue Circles can be applied to locations with different profiles, therefore, in 2011, the Movement We Can Paraná had its methodology of mobilization recognized as Social Technology by Banco do Brasil (Brazil Bank) Foundation.

Until 2011, the Movement We Can Paraná has participated two times in the General Assembly of UN, presentation at the Assembly of Families Organization in Egypt; Special participation in the delivery of the 2nd and 3rd edition of the Brazilian MDG Award; Certification of the Dubai Award as one of the best practices for local development.

<p><u>Initiating Organization</u></p> <p>Federation of Industries of Paraná (FIEP) in partnership with Social Service of Industry (SESI). http://www.fiepr.org.br/ http://www.fiepr.org.br/nospodemosparana/english/</p>	<p><u>Geographic Scope</u></p> <p>The project scope is global, whereas it is a UN platform; however the “We Can Paraná” is a methodology developed by SESI-PR that is applied in all the 399 municipalities of the state of Paraná and also in Brazil by others institutions, partners and volunteers.</p>
<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>Through the mobilization of the society, it's possible to achieve a high degree of understanding of sustainable development. Align projects, actions and a good practice with the MDG means to help for local sustainable development, health, education, wellbeing and insure the maintenance of the environment. Until 2011, the We Can Paraná achieved 560 Dialogue Circles with the participation of 34,563 people; Also realized 49 Project Exhibitions, with presentation of 657 Projects, realized three Conferences with more than 4,000 participants, involving the second sector, businesses and industries.</p>	<p><u>Type of Partners Involved/Wanted</u></p> <p>Federation of Industries of Paraná, Universities, Civil Society Actors, Local Leaderships, Religious Institutions, Non-Governmental Organizations (ONG), Civil Society Organization in the Public Interest (OSCIP), Government Municipal, Financial Institution, Industries, Cooperative health, Companies with social responsibility.</p>
<p><u>Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success</u></p> <p>Involvement of the three sectors of society; creation of public policies in favor of the MDG; Alignment of projects, Actions and Best Practices to the MDG. The key point of the We Can Paraná is the community defining which actions will take place in the municipality. The MDG are a cause which both people and organizations can easily find a way to identify how they can contribute.</p>	
<p><u>Comments: Please list any additional Statements, messages or call for action you may wish to gather from the audience.</u></p> <p>We seek to encourage the community to realize actions in order to reach the MDG, thus contributing to the local development. The MDG are a UN global platform for the global sustainable development and, with the methodology of mobilization, developed by “We Can Paraná”, it can be applied in any locality. Therefore, anyone can do their part for a better world.</p> <p>According to entrepreneur Francisco Marcos Pennacchi, the company Pennacchi of food industry, work done by the Movement We Can Paraná contributes to the development of municipalities because it modifies the way people think. “This work is a way of instilling in people the willingness to take care of his yard of his own town”.</p>	
<p><u>Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.</u></p> <p>Maria Aparecida Zago Udenal, Phone: +554132717692, Email: cidinha@fiepr.org.br</p>	

Germany's Federal Agency for Nature Conservation & Touristik Union International (TUI AG)

Conserving biodiversity on holidays

Key alignment(s) with the ten green economy conditions

- Awareness
- Education and skills
- Resource efficiency and decoupling
- Metrics, accounting, and reporting

Description

Trading in illegal souvenirs endangers the diversity of species in holiday destinations. By raising client awareness of this issue, the Bundesamt für Naturschutz, which is Germany's Federal Agency for Nature Conservation, and the tourism group TUI AG are together seeking to protect biodiversity in holiday regions. Three of the actions envisaged in the framework of this partnership are: the generation and distribution of the souvenir guide "TUI's Little Guide to Protecting Species", the inclusion of biodiversity spots in the in-flight entertainment programme for the airline TUIfly, and the creation and distribution of the children's magazine "Kinatschu" on biodiversity issues.

Background:

Holiday-makers who buy illegal souvenirs are – in most cases unwittingly – harming biodiversity in their holiday region. For many years, the government conservation agency Bundesamt für Naturschutz and TUI have therefore been providing information in TUI brochures about current import and export regulations in line with the Washington Convention (CITES). TUI has integrated biodiversity protection as a component in the Code of Conduct which applies across the group and from this it has formulated a biodiversity strategy.

As the decline in species diversity is continuing unbridled, this joint commitment was stepped up to mark the International Year of Biodiversity in 2010: The souvenir guide "TUI's Little Guide to Protecting Species" provides information about illegal souvenirs and tips for sustainable alternatives. Since the end of 2009, the leaflet has been distributed by tour leaders during the welcome cocktail in over 20 holiday regions where trading in illegal souvenirs occurs. TUI feels it is important to address the issue in positive terms without pointing the finger, in order to motivate and educate guests. When choosing destinations to make the little souvenir guide available, we are aided by the annual destination monitoring, which asks specifically in the chapter on "Nature and Culture" about the occurrence of illegal trading in souvenirs. The souvenir guide encourages TUI guests to support the local economy at their destination by purchasing sustainable souvenirs. Since 2010 the little souvenir guide in its handy pocket format has also been available in English. By publishing the guide, TUI is making an active contribution to protecting endangered flora and fauna.

This has been complemented since the end of 2009 by the BfN's one-minute biodiversity spots in TUIfly's in-flight entertainment programme. These spots draw the passengers' attention to the problem of illegal souvenir trading while they are on their way to their destination and encourage them to buy alternative souvenirs. "Fair" souvenirs help to improve the economic situation of the local community.

So that children can learn through play about habitat and species diversity in their holiday region, a conservation magazine for children called "Kinatschu im Urlaub" [*Kinachu On*

Holiday] has been distributed since 2010 to German-speaking children's clubs and on board TUIfly. Through the children, this simultaneously raises awareness among the adults. Cooperation partners from all over the world have contributed to producing this magazine by sending photographs and interviews.

With this joint campaign to protect biodiversity by raising awareness, the BfN and TUI have shown how cooperation between the political and commercial worlds can use well-chosen edutainment effectively in the interests of biodiversity.

The education campaign has helped to establish this theme in the clubs' edutainment programmes, e.g. at TUI Best Family, where every 14 days a day is now devoted entirely to nature.

Initiating Organization

Germany's Federal Agency for Nature Conservation
TUI AG

Geographic Scope

The souvenir guide is distributed in over 20 destinations worldwide where illegal trade of souvenirs happens regularly:

Europe: Turkey, Italy
Africa: Egypt, Tunisia, Morocco, Kenya, Cabo Verde, Kenya
Asia: Thailand, Sri Lanka, Maldives, Bali,
America: Jamaica, Dominican Republic, Costa Rica, Cuba, Tobago, Mexico

Experiences of Best Practice or Potential Goals of the Collaboration

Campaign has contributed to customer protection as most of the people neither know CITES nor are aware that violations against CITES incur a big fine and in some cases even prison.

Type of Partners Involved/Wanted

Groupwide collaboration with hotel chains, carriers(TUIfly), destination management
Our interest is to translate the souvenir guide in further languages (Russian e.g.) to sensitize further customer groups

Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success

Translation into other languages

Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue

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Grupo de Trabalho da Pecuária Sustentável (Brazilian Beef Roundtable)

Sustainable Livestock Initiative

Key alignment(s) with the ten green economy conditions

- Awareness
- Resource efficiency and decoupling
- Integrated environmental, social and economic policy and decision-making

<p><u>Description</u></p> <p>This a multi-stakeholder initiative in Brazil, including Dow, to use fewer resources or use them more efficiently by building and deploying a government engagement plan to drive policies; creating a science based association to address technical challenges (Sustainable Livestock Professional Association/APPS); convening and catalyzing existing coalitions (Sustainable Beef Working Group/GTPS). Always using a multi-stakeholder approach to create or leverage strategic alliances.</p> <p>This is all about innovation, but not just in science. DAS has technologies to help address these issues, like herbicides and hybrid grasses, (to help the ranchers producing more in the same area or even using less land, releasing area to cultivate crops and recover part to its native condition).</p> <p>Building multi-stakeholder coalitions will address world challenges quickly and wisely. We can't provide all the solutions or address all issues by ourselves, but together with key partners, we have more chance to ideate & implement better solutions..Build networks around challenges to drive actionable solutions among key players including Dow itself, suppliers, clients, government, NGOs and others.</p>	
<p><u>Initiating Organization</u></p> <p>Grupo de Trabalho da Pecuária Sustentável (Brazilian Beef Roundtable) http://www.pecuariasustentavel.org.br/</p>	<p><u>Geographic Scope</u></p> <p>National (Brazil) and expanding to some countries with partnership with Global Roundtable for Sustainable Beef (http://www.sustainablelivestock.org/)</p>
<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>Bring academia (PENSA/USP) to co-create the project; Map and engage key stakeholders and extract the best from each participant; Key stakeholder mapping and engaging (personal meetings); Host events to identify barriers/opportunities and promote large-scale implementation models, as well discuss the challenges in 3 working areas: Technical, Finance and</p>	<p><u>Type of Partners Involved/Wanted</u></p> <p>We have several partners (more than 60) on board, such as: Governments (Environmental ministry); Producers (Cattle Breeders and Raisers); Industry (JBS, Marfrig; Dow, MSD); Retailers (WalMart, Carrefour);</p>

<p>Outreach/Extension. As a result, outputs were presented at the Sustainability Forum and were published at Agroanalysis Magazine special add in.</p>	<p>Financing groups (IFC, Santander) and Civil society (TNC, WWF).</p>
<p><u>Conditions for Success/Success Factors</u></p> <ul style="list-style-type: none"> ○ Keep aligned with corporate strategy and also with partner's strategies; ○ Develop good project, with real value to all partners and measurable; ○ Show value to all key stakeholders, including population in general; ○ Set up some milestones to guarantee that we are in the right way; ○ Keep telling the story, which means publishing each November the Sustainable Livestock add in; ○ Raise external funding to accelerate the change needed; 	
<p><u>Comments</u></p> <p>Hunger is one of mankind's major challenges: more than 7 billion inhabitants; barely 1 billion starving. There is a raising concern about water and land scarcity. In 2010, 33% of Earth surface covered by crops/grazing; 60% livestock production (3.4 bi ha). Brazil cattle herd: 200 mi heads in 170 mi hectares: 2nd beef producer; 1st exporter (33% of global trade). Livestock not only contributes to but also bears the brunt of climate change.</p>	
<p><u>Provide name of focal point for this engagement:</u></p> <p>Eduardo Brito Bastos Dow AgroSciences Government Affairs Leader GTPS Corporate Affairs Email: ebbastos@dow.com</p>	

ICCA

Global Product Strategy (GPS)

<p><u>Description</u></p> <p>GPS is designed to advance the industry's product stewardship performance, measure that performance, and improve communication and transparency about chemical hazard, risks, and appropriate safe handling along the value chain.</p> <p>ICCA is continually improving the sustainability and safe management of chemicals throughout the lifecycle. To this end, in 2006, ICCA launched the GPS to further strengthen its commitment to the safe management of chemicals across the value chain. GPS aims to reduce existing differences in the safe handling of chemical substances between developing, emerging and industrialized countries and to ensure that chemicals are not handled incorrectly due to a lack of information or incorrect assessments.</p>	
<p><u>Initiating Organization</u></p> <p>The International Council of Chemical Associations (ICCA) and its members (http://www.icca-chem.org/)</p>	<p><u>Geographic Scope</u></p> <ul style="list-style-type: none"> - Developing countries and countries with economies in transition; - SMEs; - Emerging chemical companies across the globe.
<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>Through GPS, companies commit to promote the safe use of chemical products and enhance product stewardship throughout the value chain. GPS aims to:</p> <ul style="list-style-type: none"> - Establish a base set of hazard and exposure information adequate to conduct safety assessments for chemicals in commerce - Provide global capacity building to implement best assessment practices and management procedures, especially with small and medium sized companies and in developing countries - Share relevant product safety information with co-producers, governments and the public - Work across the value chain so suppliers and customers can effectively evaluate the risks and successfully manage chemicals through their life-cycles - Make information on chemicals publicly available (GPS IT-portal via http://icca-chem.org/.) 	<p><u>Type of Partners Involved/Wanted</u></p> <p>In 2010, UNEP and ICCA signed a Memorandum of Understanding. One of the joint commitments includes capacity building for sound chemical management with a focus on SMEs and developing countries.</p>

Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success

- To bridge gaps in current performance in the assessment of chemicals regarding their hazardous and exposure potential and to develop risk management measures for safe handling of substances throughout their life cycle.
- To have a harmonization of the chemical management systems. The GPS could serve as a basis for regulations globally, especially for emerging and developing countries looking for new management policies.

Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.

Lena Perenius, Executive Director Programme Product Stewardship, International Council of Chemical Associations (ICCA)

Martin Brower, Brazil

Recycled cooking oil used for transport refrigeration

Description

Thermo King, a business unit of Ingersoll Rand (NYSE: IR) and McDonald's distributor Martin-Brower teamed up to reduce carbon footprints in logistics by using recycled cooking oil to help run refrigeration trucks and units. Special Thermo King refrigeration units use biodiesel fuel made from recycled oil that McDonald's had used to cook fried foods. The overall system is a closed-cycle process that brings efficiencies to the transportation of perishable goods and supplies to McDonald's restaurants. Brazil is the first location for this innovative closed cycle process, initiated by the local Martin-Brower team.

Initiating Organization

Martin Brower, Brazil <http://www.martin-brower.com.br/>

Geographic Scope

Regional

Experiences of Best Practice or Potential Goals of the Collaboration

The innovative closed cycle process for turning used cooking oil from McDonald's into fuel for their trucking fleet began in 2008 with concept development and planning. Pilot testing occurred from 2009 to 2011, with 20 restaurants and 7 trucks. Next, analyses, rollout planning, and preparing for regulatory authorization are in process, with full rollout expected to start in 2012.

The concept is simple: When transporting McDonald's supplies, the truck also carries empty containers to be filled with used cooking oil. The driver leaves the empties and takes the used-oil-filled containers, then brings them to a processing plant where the oil is transformed into biodiesel fuel to be used in the trucks and refrigeration units.

- Thermo King plays a key role as supplier of the refrigeration units on the trucks and is the industry pioneer for biodiesel use in this arena.
- The first truck, on the road since 2008, has a Thermo King TS Spectrum refrigeration unit, and runs on B20 fuel – standard diesel oil that includes 20% of the biodiesel made from recycled oil.
- The Martin-Brower/Thermo King team is currently working on using B100 (100% biodiesel oil) for trucks.

Challenges included developing and implementing processes for this pilot program (how to collect and filter the used oil, determining the correct amount of biodiesel for the trucks, and more) and getting people engaged and trained.

Type of Partners Involved/Wanted

Martin-Brower turned to Thermo King for support, research and development regarding the latest refrigeration technologies and processes. Several other companies are also partners in this project: ATA, Shell, Volkswagen, Tiete, Cummins, MWM, TeK Diesel, and SP Bio.

Conditions for Success/Success Factors

There are significant, measurable cost and environmental benefits from this biodiesel program. To date (July 2011), Martin-Brower is on target to reduce diesel usage for trucking to and from McDonald's restaurants throughout Brazil by 28% by 2013. In addition, biodiesel yielded from this process costs about 10% less than mineral diesel.

This closed cycle process will contribute to standardization, improved quality assurance, and increased safety in used oil disposal for McDonald's. Along with the trucks, the refrigeration units provided by Thermo King play a large role in Martin-Brower getting Carbon Credits in the Clean Development Mechanism (CDM) from the Kyoto Protocol. Overall, using biodiesel reduces greenhouse gas emissions, and reduces harmful sulfur emissions.

Future growth will demand continued engagement from the entire value chain with a focus on workforce training, as this innovation demands "hands-on" changes from business as usual for a number of actors

Comments

This case study is an excellent example of the power of bringing together an entire value chain to arrive at an innovation in sustainability.

Benefits: Used cooking oil, if not properly treated, can strongly hurt the environment - one liter of oil can contaminate approximately 5,200 gallons/20,000 liters of clean water. The Martin Brower biodiesel project helps provide a better destination for the used cooking oil.

McDonald's and Martin-Brower plan to donate a portion of the cost savings from this program to Ronald McDonald House Charities in Brazil.

Provide name of focal point for this engagement

Jordan Doria (not project lead but respondent to case study request)
Manager, Stakeholder Engagement
Ingersoll Rand Center for Energy Efficiency and Sustainability
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202-412-5359

Novozymes

Novozymes Integrated reporting best practice

Key alignment(s) with the ten green economy conditions

- Metrics, accounting, and reporting

Description

Novozymes integrates sustainability into everyday business activities and into its reporting practices. In 2002, Novozymes was one of the very first companies to publish an integrated report combining traditional financial information and sustainability data, as has developed into a best practice.

The report is structured into five key sections;

- 1) Report (reporting on the past year)
- 2) Outlook (forward-looking into the coming year)
- 3) Management (competencies, key processes, risk management)
- 4) Accounts and data (financial and sustainability data)
- 5) Supplementary reporting (GRI reporting)

For The Novozymes Report 2011, please visit : <http://report2011.novozymes.com/>

The aim of the report is to link Novozymes' financial and non-financial performance, which is reflected throughout the report, for example in the Board of Directors' letter, key figures, the financial and sustainability discussion, risk management and in long-term targets and expectations.

Furthermore, Novozymes reports annually on progress in implementing the UN Global Compact's 10 principles in a Communication on Progress (COP) which is published online at: <http://www.novozymes.com/en/sustainability/communication-on-progress/Pages/default.aspx> and also feeds relevant information into The Novozymes Report. The COP addresses Novozymes' efforts on specific leadership, implementation, and performance criteria, and has been designed to meet the requirements of the new Advanced level and Blueprint for Corporate Sustainability Leadership launched in 2010.

Anchoring and involvement

The integrated reporting process involves all business functions and regions. Novozymes' business units and regions report on sustainability aspects and stakeholder engagement as an integrated part of the annual regional outlook and strategy processes, contributing to Novozymes' overall sustainability strategy. Achievement of performance and development targets related to social and environmental responsibility is integrated into incentive programs. Furthermore, social and environmental responsibility is a fixed agenda item twice a year at board meetings. Financial, social, and environmental results are reported quarterly, both internally and externally.

Assurance and verification

As part of the integrated reporting process, all environmental and social data are verified by PriceWaterhouseCoopers in accordance with the Danish audit standard and the AA1000 Assurance Standard.

Novozymes' strong commitment to integrated reporting has contributed to a Biotech sector leadership position in the Dow Jones Sustainability Index 10 times and a Gold Class in SAM Sustainability Yearbook 2010-2012.

<p><u>Initiating Organization</u></p> <p>Novozymes www.novozymes.com and http://report2011.novozymes.com/</p>	<p><u>Geographic Scope</u></p> <p>Global</p>
<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>Learning experience: Integrated reporting follows up on the organizational efforts aimed at integrating sustainability and targets into the business strategy by also taking stakeholders' concerns into consideration. It means that the entire organization naturally considers sustainability performance.</p> <p>Improvements: The assurance and verification process is difficult with an integrated report because the combination of sustainability and financial/business information makes it more difficult to assess materiality. It would therefore be of assistance to companies if there were more consensus around material issues in an integrated report since this has become more mainstream.</p>	<p><u>Type of Partners Involved/Wanted</u></p> <p>All stakeholders in general, in particular: Investors including Sustainability Asset Management (SAM) and Dow Jones Sustainability Index, Global Reporting Initiative, UN Global Compact LEAD, employees, NGOs etc</p>
<p><u>Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success</u></p> <p>Consensus among investors about a set of relevant sustainability data in order to avoid too many separate reporting questionnaires on top of the annual reporting. Currently there are too many different viewpoints and preferences.</p>	
<p><u>Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.</u></p> <p>Justin Perrettson Email: jdpo@novozymes.com</p>	

Novozymes

Use of Lifecycle Assessment (LCA) as a guide towards sustainability and as a communication tool for environmentally friendly products and solutions

Key alignment(s) with the ten green economy conditions

- Life cycle approach

<p><u>Description</u></p> <p>LCA is an environmental assessment tool which can be used to compare the environmental impact of two or more products or solutions. LCA can be used to compare existing technology with new technology and give us a quantitative indication of the advantages or disadvantages of implementing the new technology.</p>	
<p><u>Initiating Organization</u></p> <p>Novozymes has used LCA to document the environmental advantages of its products and solutions for the past seven years. Our LCAs address a broad spectrum of industries; household care, animal feed production, textile production, food and beverage production, etc. Novozymes LCA studies are published and can be found here: http://www.novozymes.com/en/sustainability/sustainable-solutions/life-cycle-assessments/Pages/published-lca-studies-.aspx</p>	<p><u>Geographic Scope</u></p> <p>Global</p>
<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>LCA results have created a lot of awareness of Novozymes products because sustainability is high on global agenda in these years and our technology saves water, chemicals energy and raw-materials when they are implemented in industry and therefore reduces contribution to climate change etc.</p>	<p><u>Type of Partners Involved/Wanted</u></p> <p>We have engaged with suppliers, customers, NGOs, Universities, National and international governments and forums etc.</p>
<p><u>Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success</u></p> <p>Global awareness of sustainability has been a major driving force. Helping to meet growing demand for truly sustainable products and solutions is also a prerequisite. Deep engagement and support from top-management and colleagues throughout the organization side has been crucial, as has having a Dedicated LCA team with significant experience plus access to LCA tools and databases.</p>	
<p><u>Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.</u></p> <p>Justin Perrettson, Email: jdpo@novozymes.com</p>	

Novozymes and CleanStar Ventures

CleanStar Mozambique - building a Biobased Economy

Key alignment(s) with the ten green economy conditions

- Education and skills
- Employment
- Resource efficiency and decoupling
- Life cycle approach
- Open and competitive markets
- Metrics, accounting, and reporting
- Finance and investment
- Governance and partnerships

Description

Since 2008 **Novozymes** has sought to engage in high-growth frontier markets. Initial studies indicated an interesting opportunity in developing sustainable agriculture to increase food production as well as produce feedstock for ethanol production to replace charcoal as cooking fuel in urban households.

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

In late 2009 Novozymes met **CleanStar Ventures**, who had similar interests in agriculture, food and energy – but also an interest in forestry. Following joint feasibility studies the companies combined business ideas and co-invested in the newly-formed **CleanStar Mozambique** in August 2010.

CleanStar Mozambique is now helping smallholder farmers in Sofala province implement an environmentally restorative agroforestry system on their own land. Whatever the families do not consume themselves, they can sell to the company, thus drastically improving their nutrition levels while also more than tripling their incomes. From the surpluses sold to the company, the company will produce a range of food products as well as an ethanol-based cooking fuel. These will be sold into urban markets – notably Maputo. Once the trees have reached maturity in approximately five years, the company will also produce a substitute for imported diesel based on the oilseeds of the trees.

In practice, the venture provides the farmers with all the necessary training and inputs to implement the agro-forestry model designed for the venture (at no cost to the farmer) on land that they own but have abandoned, having already exhausted the soil nutrients. The agro-forestry model includes various trees and crops, such as cassava. It is designed to rehabilitate the soil and does not require ongoing inputs aside from labour.

Farmers take their surplus production to (and receive payment from) the nearest 'community processing centre' (CPC), which is nearby and is built and operated by the company. The centres also serve as the points where farmers get planting material for each new season (also at no cost). At the CPC some processing is done of the various

agricultural products. The semi-processed goods are then trucked to the central bio-processing facility in Dondo, near the city of Beira, where the final processing is done to make the various food products and the ethanol-based cooking fuel.

Alongside Novozymes and CleanStar Ventures the business brings together a range of partners, most notably the engineering group **ICM, Inc.** that is providing the ethanol plant and **Bank of America Merrill Lynch** that has entered a cutting-edge carbon financing agreement with CleanStar Mozambique.

By 2014 the venture will involve 3,000 smallholders over 6,000 hectares, operate seven community pre-processing centres, and supply 20 percent of Maputo households (approx. 80,000) with cookstoves and fuel – thus protecting 4,000 hectares of indigenous forests per year. This is when CleanStar Mozambique is expected to have reached profitability. At this point the venture will expand significantly in Mozambique as well as promote replication efforts in other suitable markets via an open-source business model approach.

Initiating Organization

Operating entity:

- CleanStar Mozambique
(www.cleanstarmozambique.com)

Initiating organizations:

- Novozymes A/S (www.novozymes.com)
- CleanStar Ventures
(www.cleanstarventures.com)

Key partners:

- ICM, Inc. (www.icminc.com)
- Bank of America Merrill Lynch
(corp.bankofamerica.com)

Geographic Scope

CleanStar Mozambique currently operates in the Sofala and Maputo provinces of Mozambique. Once the venture has reached profitability (projected in 2014) operations will expand to other provinces. Also, replication efforts will begin in other Sub-Saharan markets. The market dynamics underlying the business are common to many cities in the region. Over 50 cities are estimated to be experiencing similar conditions to Maputo, with increased urbanisation driving deforestation-based charcoal – the price of which is rising to the point where ethanol is a competitive alternative.

Experiences of Best Practice or Potential Goals of the Collaboration

It has required significant business model innovation and openness to new types of partnerships for this project to reach where it is today. It is important to think in terms of *creating* markets rather than just *serving* markets. It is also important to keep the whole value chain in mind, being prepared to find ways to fill the “institutional voids” that are commonplace in frontier markets. This will often require establishing uncommon partnerships. Both business model innovation and openness to new partnerships will be required of any organization seeking a role in building a sustainable business at the Base of the Pyramid to promote inclusive growth.

Type of Partners Involved/Wanted

Aside from partners mentioned above CleanStar Mozambique is currently engaged with:

- Dometic: ethanol stoves producer
(www.dometic.com)
- Zoe Enterprises: Mozambican company with experience in marketing stoves and fuel
- Cornell University: assisted in developing a marketing and distribution strategy for the clean cooking solution in Maputo
(www.johnson.cornell.edu/Center-for-Sustainable-Global-Enterprise.aspx)
- Yale University (School of Forestry & Environmental Studies): helped with Life Cycle Assessment work

	<p>(http://environment.yale.edu)</p> <ul style="list-style-type: none"> - Impact Carbon: supporting with the assessment of carbon potential (http://impactcarbon.org)
<p><u>Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success</u></p> <p>A number of things are required/helpful for the CleanStar Mozambique business model to rapidly scale and replicate across target markets:</p> <ul style="list-style-type: none"> - Core/international partners must have the capacity to scale and replicate rapidly (has been ensured) - Local partners in each target market will have to be identified (expressions of interest already coming in) - It would be helpful if governments in target markets offered permanent VAT exemption on cooking fuel (as is the case for charcoal, which is an informally traded good) - It would also be helpful if governments offered import duty exemption on the cooking fuel (necessary to build up local market demand before installing local production capacity) - Governments must not impose irrational blanket restrictions on e.g. the crops that may be used to produce ethanol (as opposed to studying project proposals on a case-by-case basis) - Governments should be careful not to establish unnecessarily cumbersome approval processes (“Doing business” in World Bank parlance), causing companies to run into cash-flow problems - Governments should combat corruption 	
<p><u>Comments: Please list any additional Statements, messages or call for action you may wish to gather from the audience.</u></p> <p>The long term ambition of the venture partners is to fundamentally impact African agriculture, food and energy – significantly improving lives while also helping build a more sustainable foundation upon which the rest of the economy can develop and grow. In this view CleanStar Mozambique is a clear example of a ‘biobased economy’, where sustainable agriculture provides the necessary biomass to meet local needs for food, feed, fuel and materials – while restoring the environment and driving rural development. Biobased economies will look slightly different from place to place, but fundamental principles remain the same: shifting the resource base away from fossil oil to sustainable biomass while increasing food production and enabling green growth.</p>	
<p><u>Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.</u></p> <p>Stefan Maard Email: stmr@novozymes.com</p>	

Novozymes Latin America Ltda

Citizymes Case from Brazil: Biotechnology for Sustainability Goes to School

Key alignment(s) with the ten green economy conditions

- Education and skills
- Resource efficiency and decoupling
- Governance and partnerships

Description

Novozymes launched a new group-wide corporate citizenship strategy, “Citizymes”, in 2011. The strategy is about engaging in community activities, thereby giving back to our communities around the world by making available our competencies in science understanding and environmental responsibility to the benefit of the next generation of scientists and innovators.

Building on our strengths in technology and science

By giving something back to our communities around the world, we retain our license to operate, enhance our ability to attract the brightest scientific talent in the future, and give employees a chance to make a difference, which also has a positive impact on job satisfaction.

Supporting the UN Millennium Development Goals

Given Novozymes’ commitment to supporting sustainable development, we aim to contribute to the UN 2015 Millennium Development Goals (MDG) through our corporate citizenship activities. Our strategy specifically targets MDG 2 (universal education) by helping communities access education and improving their scientific literacy and MDG 7 (environmental sustainability) by raising communities’ awareness of the value and importance of environmental responsibility.

Global direction, local flexibility

Previously, each of Novozymes’ local sites managed community engagement independently. With the new initiative, we are concentrating our community efforts into broader programs that increase our reach and impact by drawing on our core scientific competencies. We aim to have at least one major corporate citizenship program in each region that meets local stakeholder needs, while still supporting the overall strategic focus. Each year, we will measure the number of learners (including students, teachers, and families in our communities) reached through our corporate citizenship activities and follow up on feedback from the communities and employees involved. Our experience is that local authorities and policymakers appreciate our engagement in educational programs focusing on science, especially in countries with a strong tradition of community relations work.

Biotech education in Brazil – a concrete Citizymes case

In Brazil, Novozymes employees have been training science teachers at secondary schools for several years and have even developed an updated science curriculum. Working with the municipal education department in Araucária, Paraná, our employees coach teachers in new ways of teaching science, such as lab exercises, in order to inspire children to learn more about science – in particular biotechnology and its range of environmental benefits and opportunities with regard to addressing the immense societal challenges of the 21st century.

Now a permanent fixture due to its great success, the program covered more than 2,000 learners including children and teachers at 12 schools in 2011, and the objective for the coming years is to further expand the program.

In 2012 Novozymes established a partnership with SESI (Social Service NGO for the Industrial Sector) in order to extend this opportunity to learn an environmentally friendly technology (according to the Principle 9 of the UNGC: Encourage the development and diffusion of environmentally friendly technologies) to approximately 12,000 students and their families, communities and surroundings.

Initiating Organization

Novozymes Latin America Ltda
<http://www.novozymes.com/en/about-us/vision-and-values/corporate-citizenship/Pages/default.aspx>

Geographic Scope

Local
 -Brazil; Paraná State;
 Araucária (2009 – 2011) : -
 Brazil; Paraná State; Curitiba
 (2012 – ongoing)
 NB part of a global set of
 initiatives

Experiences of Best Practice or Potential Goals of the Collaboration

During the development of this project we realized that the most effective way to achieve results with the students and their families, with the teachers and with our partners, were through the application of simple learning tools, which, one way or another, were part of everyone's daily life. A good example is a topic like "fermentation", in fact a quite complex notion, which was demonstrated in practice with the making of homemade bread and usage of natural starter, which coupled to what the students experience at home, when their families are making bread.

Making biotechnology, and the many environmentally-friendlier opportunities around it, more straightforward, more at eye level and more real, made everyone show more enthusiasm and empathy towards the project.

Another positive point that we have discovered was to use simple materials and an easy-access approach. In this way we succeeded with securing continued interest towards the project by dismantling the barrier surrounding a complex, hard-to-understand technology. Also, we ensured that this simple and straightforward approach remained attractive and effective. In fact, our real challenge to this project resides at reaching more students without changing this simple and customized way of teaching complex science.

Type of Partners Involved/Wanted

Government, universities and
 NGO's focused on education

Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success

The engagement of partners and the continuous motivation of the students are the greatest challenges to the project. In order to meet these challenges, we rely on the effective participation of our employees with the training of teachers, and the ability to carry out the teaching experience on science within the framework of an innovative model that changes the perception of the world for both teachers and students, and opens up opportunities for sustainable choices, both in the present and in the future. This approach we believe that with more staff volunteers, who are willing to educate the teachers, and with more incentives presented to the schools – in the form of more science inspired students – we will reach our goals.

With the positive experiences that we have had initially over the past three years with the project, we believe that its continuity and the new partnership with SESI will be reflected in a new phase of success, where we will reach a much larger number of teachers, students and communities.

Comments: Please list any additional Statements, messages or call for action you may wish to gather from the audience.

The most effective way to transform the world, and drive it to towards a more sustainable, and greener, future, is through education. If we can support educating people to really care about sustainability, and have them make sustainable choices, we will for sure have a better world. This project is certainly a step in the right direction; educating children to understand and get motivated with regard to science, make the right choices for, and in, the future – thereby hopefully paving way for a transition towards a sustainable world.

Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.

Raquel Rodrigues Lopes
Email: rcrl@novozymes.com

PVC Forum Italia (Italian Association of PVC Industry)

‘Emergency houses’

Key alignment(s) with the ten green economy conditions

- Resource efficiency and decoupling
- Life cycle approach
- Integrated environmental, social and economic policy and decision-making
- Governance and partnerships

Description

The project concerns the design of new temporary houses to manage emergency situations, as earthquakes, floods or migrations, based on sustainable development criteria, where the social value of this kind of buildings integrates environmental and economic aspects.

Following the principle of “more from less”, the project is an example of innovative thinking where existing everyday materials and simple and affordable technologies can help to improve energy efficiency and resources savings, whilst maintaining a low cost.

This innovative idea comes from a collaboration between PVC Forum Italy, Studio Arkit & Partners of Bologna (that brings into this project their experience in Passive House construction) and Sisteminsistemi Srl, an Italian company skilled in design and installation of big exhibition stands.

This project joints together fast and easy systems of installation of exhibition stands with the sustainability (favorable LCAs) and the efficiency (first of all as durable and recyclable insulating material) of PVC.

The result is a modular social house of around 30 m², earthquake-proof, recyclable, environmental and also “aesthetically” sustainable, economical with “dry-stone” components easily assembled in any type of land.

The whole structure is dismountable very quickly to be re-used elsewhere and it can be easily sanitized.

The use of film to cover the building not only has an aesthetic function, integrating the emergency house in the surrounding landscape, but it is also functional to a better sanitation of the building.

Solar and photovoltaic panels, air-air heat pumps and PVC as efficient insulating material ensure important energy savings.

Initiating Organization

PVC Forum Italia (Italian Association of PVC Industry)
www.pvcforum.it

Geographic Scope

National (Italy)

Experiences of Best Practice or Potential Goals of the Collaboration

The architectural approach is mainly linked to five parameters:

- Lightness, to reduce the resources consumption in the building construction, management and dismantling phases;
- Flexibility, meant as possibility of substituting components, volumetric variations and aesthetic modifications;
- Reversibility, possibility of selective demolition for re-use or recycling of the components;
- Sustainable designing, linked to technical innovation, safety, hygiene and use of eco-efficient materials;
- Emergency, with fast and easy construction methodology at reasonable costs, while maintaining the indoor comfort and nice aesthetic; possibility of re-using the same structure several times.

Type of Partners Involved/Wanted

Partners involved:

- Studio Arkit & Partners of Bologna: www.arkit.it
- Sisteminsitemi Srl

Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success

The design of this kind of 'Emergency Houses' and the construction of prototypes have been the first steps of the project.

The involvement of public and private operators might translate the project into practice.



Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.

Ing. Marco Piana – PVC Forum Italia

Phone: +39 02 33604020, Email: marcopiana@pvcforum.it

Shell

Road Infrastructure with Reduced Environmental Footprints – Shell's Approach

Key alignment(s) with the ten green economy conditions

- Resource efficiency and decoupling
- Life cycle approach

Description

Shell has developed a number of road asphalt technologies that can result in reduced energy consumption at the asphalt mix plant, and consequently reduced emissions of GHGs and of combustion-related air pollutants. Shell has had independent life cycle analyses (LCAs) performed to validate the environmental benefits of its various road technologies. Shell with its partners has performed dozens of pilot and demonstration projects and an increasing number of larger projects with its range of warm mix asphalts (WMAs) with the intention to reduce CO2 emissions.

A review of the literature indicates that the use of WMA vs. conventional hot mix asphalt (HMA) yields reductions in the emissions of carbon dioxide and sulfur dioxide of 30% to 40%; of 50% for volatile organic compounds; of 10% to 30% for carbon monoxide; of 60% to 70% for nitrogen oxides; and of 20% to 25% for dust

Shell Thiopave is a road paving technology that enables approx. 20% of the asphalt in the road to be displaced with sulphur, resulting in increased resource efficiency, and the displacement energy and associated emissions related to the production of road asphalt at the refinery.

Because it is a WMA, it also offers the benefits mentioned above of reduced energy consumption and reduced emissions. See: http://www-static.shell.com/static/sulphur/downloads/thiopave_general.pdf

Shell's Thiopave technology forms the basis of the carbon offset methodology approved by the government of Alberta, Canada. The ISO-based carbon offset system in Alberta reviews the net environmental benefit of a given technology on a life cycle basis. This methodology can now be used to generate compliance-quality carbon credits under Alberta's GHG regulatory system.

An offset methodology based on the above methodology has just completed its first round of public review under the Verified Carbon Standard (VCS) system. It is now in the process of being validated.

Initiating Organization

Shell Downstream Specialties Business / Shell Bitumen
<http://www.shell.com/home/content/bitumen/>

Geographic Scope

These asphalt technologies may be applied anywhere in the globe, and have been tested in a range of hot, temperate, and cold conditions. They may be applied to all manner of roads

	(municipal, highways, etc.); airport runway; bike lanes; etc.
<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>Factors contributing to project success:</p> <ul style="list-style-type: none"> • Technology performed as predicted/promised • Willingness of authorities to try a newer technology • Good operating practices during project construction • Good data and record collection/maintenance • An environmentally friendly technology alternative <p>Areas for improvement:</p> <ul style="list-style-type: none"> • ease of data collection will improve with increased use of the products <p>Anticipated Goals from Proposed Collaborations:</p> <ul style="list-style-type: none"> • increased familiarity with Shell Thiopave and other WMAs will result in their being used more, and ideally will enable WMAs to become business as usual in some regions/applications • increasing amounts of emissions reductions and increased resource efficiency compared to business as usual approaches 	<p><u>Type of Partners Involved/Wanted</u></p> <ul style="list-style-type: none"> • Road specifying agencies • Cities / municipalities • Airport authorities
<p><u>Conditions for Success/Success Factors</u></p> <ul style="list-style-type: none"> • Acceptance by specifying agencies of warm mix asphalts such as Shell Thiopave • Commitment to using sufficiently large volumes of the technology in a sufficiently large no. of projects to make a sufficiently noticeable environmental impact 	
<p><u>Provide name of focal point for this engagement</u></p> <p>Doug McKay VP International Organisations Email: doug.mckay@shell.com</p> <p>Timo Makinen Sustainable Development Manager, Shell Downstream Specialties Business Email: t.makinen@shell.com</p>	

SUSTAINABLE APPAREL COALITION

Ongoing collaboration primarily between business, government and civil society participation

Key alignment(s) with the ten green economy conditions

- Metrics, accounting, and reporting

<p><u>Description</u></p> <p>The Sustainable Apparel Coalition was founded by a group of sustainability leaders from global apparel and footwear companies together with leading environmental and social organizations who recognize the need to understand, track and manage the industry's social and environmental impact. The SAC aim is to develop a common approach for measuring and evaluating apparel and footwear product sustainability performance that will highlight areas for improvement, innovation, and action. The sustainability performance focuses, specifically, on: water use and quality; energy and GHG; waste; chemicals & toxicity; and social/labor.</p>	
<p><u>Initiating Organization</u></p> <p>Founding members include: Adidas, Arvind Mills, ASICS, C&A, Columbia Sportswear, Clariant, The Coca-Cola Company, Duke Center for Sustainability and Commerce, DuPont, DyStar, Environmental Defense Fund, Esprit, Esquel, Gap Inc., H&M, HanesBrands, Huntsman, INDITEX, Intradeco, JC Penney, Kohl's Department Stores, Lenzing, Levi Strauss & Co., Li & Fung Limited, L.L.Bean, Inc., Makalot Industrial Company, Marks & Spencer, MAS Active, Mountain Equipment Co-op, New Balance, Nike, Nordstrom, Otto Group, Outdoor Industry Association, Patagonia, Pentland Brands, Pratibha Syntex Limited, PUMA, Ramatex Group, REI, TAL Apparel, Target, Teijin Fibers Limited, Textile Exchange, Timberland, Tiong Liong Corporation, University of Delaware, U.S. Environmental Protection Agency, Utrecht University, Verité, VF Corp, Walmart, WL Gore & Associates, and WRI.</p> <p>Weblink: www.apparelcoalition.org</p>	<p><u>Geographic Scope</u></p> <p>Global</p>
<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>The SAC was created by companies that realized that they could gain more by pooling knowledge and adopting a common approach to measuring sustainability in the supply chain, than by each company working individually.</p> <p>Thus, companies agreed to collaborate towards an Index based on common metrics and standards used for</p>	<p><u>Type of Partners Involved/Wanted</u></p> <p>The Core membership comprises: Operating companies (brands); industry alliances think tanks and NGOs; US government agencies.</p>

<p>measuring supply chain performance across key action areas.</p> <p>From a value chain perspective, this eases the burden on suppliers as brands and retailers speak to them in one common language. Additionally, it lays the groundwork for speaking to consumers in a similarly consistent way and establishes a level playing field for communicating sustainability credentials with consumers.</p>	
<p><u>Potential Risk-Benefit Assessment and Likelihood of Success</u></p> <p>The SAC's members perceived that the industry and society at large were moving in a direction where measuring sustainability would become inevitable. The idea was to take the lead in developing those measuring systems and metrics on the principle that tools are built by industry itself would be operationally relevant and practicable, while enabling joint learning.</p> <p>Ensuring that civil society and government have a seat at the table provides credibility and a check to make sure that what is developed is fair, minimizing risk of duplicative efforts from other perspectives.</p>	
<p><u>Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue</u></p> <p>Pamela Mar, Project Director, Li & Fung (1937) Ltd., Hong Kong Email: pamelamar@lf1937.com</p>	

TimeKontor AG

GreenIT EDPc benchmarking

Key alignment(s) with the ten green economy conditions

- Metrics, accounting, and reporting
- Integrated environmental, social and economic policy and decision-making
- Governance and partnerships

<p><u>Description</u></p> <p>“GreenIT electronic data processing center benchmarking” (GreenIT EDPc benchmarking) is the first neutral benchmarking tool, that shows the specific energy and cost saving potential in data centers. By comparison with similar data centers and analysis of best practices, IT managers gain a detailed overview of ways to optimize their systems. The online based comparison tool can be applied to data centers of any type and size, registration is free. The basic set of data for the GreenIT data center benchmarking deviates from a scientific analysis of thirty data centers realized by the Technical University of Berlin. Since April 2010, the stock in the benchmarking tool has grown to more than 100 data centers with nearly 80,000 servers. It was awarded by the German Federal Government as "Flagship Project 2010".</p> <p>In the benchmarking report, each value is compared in detail, interpreted and presented graphically in relation to the results of similar data centers. The performance measures are identified in the areas of power density, energy density, climate control, data management and availability. All data will be processed in an anonymized fashion.</p>	
<p><u>Initiating Organization</u></p> <p>GreenIT EDPc benchmarking is a service offered through the network GreenIT-BB provided by TimeKontor AG.</p> <p>TimeKontor AG Schönhauser Allee 10-11 10119 Berlin Germany</p> <p>Web link: https://benchmarking.greenit-bb.de/pages/display/start/language:deu</p>	<p><u>Geographic Scope</u></p> <p>Global application: The online based comparison tool can be applied to data centers of any type and size in every part of the world.</p>
<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>The experiences of the EDPc benchmarking conducted to date have shown: the greatest GreenIT potential for optimisation lies in electricity and cooling requirements for servers, in virtualization and consolidation as well as in optimised use of free cooling. Identified Best Practices point to sustainable options whereby you can save considerable energy, costs and CO2.</p>	<p><u>Type of Partners Involved/Wanted</u></p> <p>Until now, more than 100 electronic data processing centers have participated in the GreenIT EDPc benchmarking project, for example Axel Springer AG, Umweltbundesamt, SAP, BMW and Berlin Airports.</p>

<p>An essential element in GreenIT EDPC benchmarking is the realisation of the possibility of comparing data centers. To this end, a categorisation system was developed. The electronic data processing centers were assigned to matching peer groups based on the number of servers or CPUs, as well as use of space, operational purpose and/or industry, in order to make a 'comparison of equals' possible. The fact that the number of data centers participating in the benchmarking tool has steadily risen lead to a highly complex data pool and contributed to the success of the project.</p>	<p>Any kind of data center belonging to industry partners, universities, Governments etc. can engage in the future.</p>
<p><u>Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success</u></p> <p>The main condition for success of the GreenIT EDPC benchmarking project is the rapid and widespread distribution of the tool. All participating companies can make a contribution to the undertaking of promoting the expansion of Green IT and successfully realizing optimisation in the IT sector.</p>	
<p><u>Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.</u></p> <p>Thomas Leitert Management Board, TimeKontor AG Email: thomas.leitert@timekontor.de</p> <p>Anne Becker Project Management, TimeKontor AG Email: anne.becker@timekontor.de</p>	

Veolia

Global Alliance Against Cholera: Integrated program for cholera's elimination in the Democratic Republic of Congo

Key alignment(s) with the ten green economy conditions

- Awareness
- Governance and partnerships

Description <p>The goal of the project is to eliminate cholera epidemics in the Democratic Republic of Congo by strengthening and securing a sustainable access to water, sanitation, and hygiene for at-risk population.</p>	
Initiating Organization <p>Global Alliance Against Cholera – Members : In order to complete this ambitious cholera project, the Veolia Environment Foundation created in 2010 a Global Alliance Against Cholera (G.A.A.C.) that is represented by public, private and international organisations. The Alliance aims at promoting the sustainable approach integrating W.A.S.H. (Water Sanitation and Hygiene) and epidemiology studies, originally developed in the D.R.C., and at stimulating international advocacy for fundraising.</p> <p>Please find below the members and partners of the Global Alliance Against Cholera:</p> <p>Dr. Ibrahim Assane Mayaki, Chairman of the G.A.A.C. & C.E.O. of N.E.P.A.D., South Africa Dr. Rafael Callejas, President, The Millennium Water Alliance, United States of America Pr. Rita Colwell, Distinguished University Professor, University of Maryland, United States of America Pr. Philippe Kourilsky, Tenured Professor, Collège de France (Chaire d'immunologie moléculaire), France Dr. Pierre Lokadi Otete Opetha, Secretary-General, Ministry of Public Health, Democratic Republic of Congo Dr. Jean-Louis Machuron, President, Pharmacie et Aide Humanitaire, France Ambassador John McDonald, Chairman, Global Water, United States of America Dr. Eric Mintz, Leader of Diarrheal Disease Epidemiology Team, Center for Disease Control, United States of America Pr. Renaud Piarroux, Tenured Professor, Université de la Méditerranée, France Pr. Pierre Ambroise Thomas, Honorary President, French National Academy of Medicine, France Dr. Thierry Vandeveld, Executive Officer, Veolia Environnement Foundation, France</p>	Geographic Scope <p><u>8 “hot spots” of cholera epidemics in the D.R.C.</u></p> <p>Lake Albert (Bunia) Goma Bukavu Uvira (Fizi)Baraka Kalemie Bukama Kasenga</p>

<p>Dr. Pierrette Vu Thi, Country Director, UNICEF, Democratic Republic of Congo Dr. Dennis Warner, Senior technical advisor for water supply and sanitation, Catholic Relief Services, U.S.A.</p> <p><u>Implementing Partners in the DRC :</u></p> <p>Solidarités International DRC Ministry of Public Health <u>Other partners :</u> DRC Ministry of Energy – Regideso World Health Organization DRC Ministry of Environment Action Contre la Faim DRC Ministry of Planning UNICEF DRC Ministry of Rural Development</p>	
<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>The goal of the project is to eliminate cholera epidemics in the Democratic Republic of Congo by strengthening and securing a sustainable access to water, sanitation, and hygiene for at-risk population.</p> <p>The Democratic Republic of Congo (D.R.C.) has reported the highest number of cholera cases worldwide during the period 2002-2008, representing 15% of the worldwide cases and 20% of the deaths. In addition, according to the World Health Organisation, only 46% of the Congolese population has access to potable water. Based on these statements and to step beyond the sole emergency response, the Veolia Environnement Foundation (V.E.F.) accepted in 2007 an invitation to cooperate with the Ministry of Public Health (M.P.H.) of the D.R.C. on the preparation of the national Strategic Plan for the Elimination of Cholera.</p> <p>The V.E.F. and its partners first initiated epidemiological studies in the country to understand the specificities of the spread of cholera epidemics and to adopt an appropriate long term action plan for the fight against cholera. As a result, the epidemiological studies enabled the identification of 8 “hot spots” (see Map 1) of cholera emergence in the D.R.C. A Geographical Information System (G.I.S.) was then used to combine the results of epidemiology studies and W.A.S.H. studies (integrated approach). The parallel drawn between the 2 types of studies allows a scientifically-based cholera risk mapping and the definition of W.A.S.H. master plans for each of the identified hot spot.</p> <p>In 2008, the M.P.H. adopted its national Strategic Plan for the elimination of cholera, based on the integrated</p>	<p><u>Type of Partners Involved/Wanted</u></p> <p>Please see the “initiating organization” box, listing all the partners involved.</p>

methodology that was developed. It highlights the needs for action in the W.A.S.H. area in the identified hot spots as the solution to address the root of the issue.

During the past 5 years, the V.E.F. has been working in the D.R.C. in cooperation with the Ministry of Public Health, the Ministry of Energy – Regideso and its partners. However the fight against cholera proves to be a cross-domain issue. Based on this general observation, the V.E.F. has co-organised with the M.P.H. in Kinshasa, in May 2011, an inter-ministerial meeting gathering several ministries such as the Ministry of Energy-Regideso, Ministry of Environment, Ministry of Planning and Ministry of Rural Development. They together adopted an Interministerial Memorandum of understanding for the elimination of cholera, with the objective of writing a new Strategic Plan for the elimination of cholera including all ministries recommendations and therefore carrying out common actions.

The V.E.F. is involved in the fight against cholera in the D.R.C. since 2007, and provides the M.P.H. and other partners (Ministry of Energy - Regideso , Solidarités International, etc.) with financial and technical support through regular collaboration and short term field missions.

With the existing needs for funds to complete this ambitious Cholera project, the V.E.F. created in 2010 a Global Alliance Against Cholera (G.A.A.C.) that is represented by public, private and international organisations.

As a result of the growing actions of the G.A.A.C., the Alliance will actively participate in the next World Water Forum that will be held in March 2012 in Marseille, France.

Comments: Please list any additional Statements, messages or call for action you may wish to gather from the audience.

Beyond the actions taken in the D.R.C., the aim of the *Fight Against Cholera* program is to replicate the integrated methodology in other cholera-affected regions, involving Governments, civil society and international organisations, as it is being developed in the Lake Chad Basin.

Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.

Thierry Vandeveld, Veolia Environnement Foundation for the GAAC Secretariat
Phone: 0033155234292
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Email: sandhya.bonnet@veolia.com

<p><u>Description</u></p> <p>Through the action of a joint subsidiary (Proactiva Medio Ambiente and locally Interagua), Veolia Environnement contributes to the improvement of access to basic services (water and sanitation), impacting the environment, life and health conditions for the whole Guayaquil population. Over the past years, the city has been faced with a tremendous urban growth phenomenon, generating critical challenges in terms of sustainable urbanization. In this fast-changing environment, Interagua operates, rehabilitates and expands potable water and sanitation infrastructures. The company provides water for around 2,500,000 inhabitants in the city and an additional 110,000 new clients every year.</p> <p>Furthermore, Interagua supports the public authorities in their efforts to achieve an accelerated and sustainable economic growth in the long term, in order to meet the social needs of the population and help reduce inequality and poverty.</p>	
<p><u>Initiating Organization</u></p> <p>Company name: Veolia Environnement (through Proactiva Medio Ambiente and Interagua). Web Link: www.interagua.com.ec/</p>	<p><u>Geographic Scope</u></p> <p>Interagua works at a local scale. The city of Guayaquil is the most populous city of Ecuador as well as its economic centre.</p>
<p><u>Key learning</u></p> <p>Key success factors for the action of Interagua at the service of the city and its inhabitants include:</p> <ul style="list-style-type: none"> ⇒ <u>Consider the public-private partnership as a flexible framework</u> made of commitments, trust and shared ability to adapt to unexpected changes. ⇒ <u>Promote the use of a mix of different technologies</u> that would not have produced the same outcome if used independently (e.g. the combined use of macro meters, geographic information system and surveys allowed for reduction in water losses). ⇒ <u>Innovate at the service of local communities</u>, covering both technical but also socioeconomic dimensions which are inherent to access to basic services; 	<p><u>Type of Partners Involved</u></p> <p><u>Municipalidad de Guayaquil</u> Address: Pichincha 605 entre Clemente Ballén y 10 de Agosto Guayaquil – Ecuador The Guayaquil Municipality is the local Authority of the city of Guayaquil and is in charge of meeting the essential needs of the neighbourhood, especially: urban development management, economic growth, welfare of the inhabitants, etc.</p> <p><u>ECAPAG (Empresa Cantonal de Agua Potable y Alcantarillado de Guayaquil)</u> Address: Av. Fco de Orellana y MH Alcivar, Edif. Las Cámaras Mezanine Guayaquil – Ecuador ECAPAG is a public organization, which mission is to regulate and control and regulate the concession of potable water and sanitation services in the City of Guayaquil.</p>

<p>⇒ <u>Promote bottom-up and participatory approaches</u>, leverage social cohesion to reinforce appropriation processes and facilitate responsible behaviours by local communities;</p> <p>⇒ <u>Work with pilot projects to assess feasibility and performance on the ground and then replicate and upscale best practices</u> to make them available for the whole population.</p>	<p><u>Confederación Unitaria de Barrios del Ecuador (C.U.B.E.)</u> Address: 10 de agosto y 9 de octubre Quito – Ecuador CUBE is a community-based organization (CBO) which mission is to strengthen participation, solidarity and responsibility among neighbourhoods and to realize projects which benefit to the neighbourhood residents.</p>
<p><u>Conditions for Future Success</u></p> <p>Future successes in Guayaquil will lean on the adaptation of day-to-day operations to the local context and the integration of field innovations and R&D findings, from Veolia Environnement operations and labs worldwide in three main areas of expertise:</p> <p>⇒ <u>Technical solutions</u> for more efficient potable water production, management of distribution networks and wastewater processes. Technical solutions include a focus on energy efficiency and reduction of GhG emissions;</p> <p>⇒ <u>Environmental performance</u> regarding local natural resources (protection of raw water resources, wastewater reuse & recycling and restitution to the natural environment ;</p> <p>⇒ <u>Social development</u> by the widening access to basic services for the urban outskirts and the poorest.</p>	
<p><u>Comments</u></p> <p>The action of Interagua in Guayaquil can be considered as a successful example of public – private partnership, leading to an improved service provision for local consumers. This pioneering experience is a source of inspiration to face new urban challenges and develop innovative management of water and sanitation services in other major cities of Ecuador and Latin America</p>	
<p><u>Focal point for this engagement</u></p> <p>Dominique Héron VP for partnerships, Veolia Environnement Phone: + 33 (0)1 71 75 02 12 Email: Dominique.heron@veolia.com</p>	

Key alignment(s) with the ten green economy conditions

- Education and skills
- Resource efficiency and decoupling
- Integrated environmental, social and economic policy and decision-making
- Governance and partnerships

<p><u>Description</u></p> <p>Most drinking water systems built in the 1980s in Cameroon no longer work due to lack of maintenance. To address the problem, and inspired by the success of an initial project in 2006 in Bangoua (Bangangté town), the Veolia Environnement Foundation served as a technical expert and co-financed a large-scale international cooperation program in 2011 to improve access to water and wastewater services for the 150,000 residents of Bangangté. The program initiated in 2011 will improve the reliability of water infrastructures, decrease the maintenance costs of systems and structures, implement a tool to monitor water quality and encourage the population to take ownership of the installations.</p>	
<p><u>Initiating Organization</u></p> <p>-the Veolia Environnement Foundation : www.foundation.veolia.com</p> <p>-the International Association of French-speaking Mayors (AIMF) : www.aimf.asso.fr</p> <p>-the Bangangté municipality</p> <p>- The Seine-Normandie Water Agency (AESN) : www.eau-seine-normandie.fr</p> <p>-the Paris wastewater treatment authority (SIAAP) : www.siaap.fr</p>	<p><u>Geographic Scope</u></p> <p>Cameroon, Western Province, Bangangté municipality</p>
<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>Seven water supply lines will be rehabilitated and 15 restroom facilities built under a long-term contracting authority program. The program will also upgrade the skills and expertise of local engineering departments and help design a customized management model. Other initiatives are planned, including hygiene education and training in installations/ public works maintenance. Veoliaforce volunteers have already completed 166 days worth of field assignments as part of related corporate giving through skills-based volunteering initiatives.</p>	<p><u>Type of Partners Involved/Wanted</u></p> <p>-municipality -association -foundation -water and wastewater agencies</p>

Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success

To remedy the lack of governance, the aim is to set up a local contracting authority for water and wastewater services, by creating a framework for joint action between all the management committees, support of the technical services of the commune, and the implementation of a "water and wastewater services" strategy. The political context is favorable, because the growing decentralization process in Cameroon is involving more communes in water management and wastewater services.

Comments: Please list any additional Statements, messages or call for action you may wish to gather from the audience.

This program aims to be exemplary for the whole of Cameroon: it therefore currently benefits seven villages among the three hundred and fifty spread across the country which have similar dilapidated installations.

Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.

-Bangangté municipality
Celestine Ketcha Courtes
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-Veolia Environment foundation
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Veolia

Zero carbon-zero water discharge Veolia project at Renault green plant in Tangier

This project received in 2011 a European Sustainable Energy Award of the European Commission, category “producing”.

Key alignment(s) with the ten green economy conditions

- Awareness
- Education and skills
- Employment
- Resource efficiency and decoupling
- Metrics, accounting, and reporting
- Finance and investment
- Governance and partnerships

<p><u>Description</u></p> <p>Renault Tangier is the first automotive plant in the world with both zero carbon and zero water discharge.</p> <p><u>Zero carbon</u> The zero carbon solution is based on three consecutive actions: 1. The plant energy consumption has been reduced by VEOLIA from its original estimation in the plant dimensioning; this was made possible thanks to Veolia’s expertise in operation and maintenance of energy plants in others automotive plants. 2. VEOLIA and RENAULT together sought, in association with the automotive paint-shop suppliers, technical solutions to recover energy otherwise wasted from this shop and use it in the plant industrial process. 3. At the end, the remaining consumptions for the industrial process were provided by renewable energies: VEOLIA designed, built and operated a biomass-fuelled power plant (18MW). Result: 98% CO2 emissions decrease.</p> <p><u>Zero water discharge</u> VEOLIA designed, built and operated a water recycling process based on a combination of technological solutions. The solution allows transforming effluents produced by the process into de-mineralized water which is re-used for process needs. Result: no discharge of industrial waste water in the environment and 70 % decrease of water resources taken for the industrial process.</p>	
<p><u>Initiating Organization</u></p> <p>VEOLIA ENVIRONNEMENT http://www.industries.veolia.com/en/</p>	<p><u>Geographic Scope</u></p> <p>TANGIER (MOROCCO)</p>
<p><u>Experiences of Best Practice or Potential Goals of the Collaboration</u></p> <p>Success keys of the Best Practice: 1. A VEOLIA - RENAULT collaboration at the very</p>	<p><u>Type of Partners Involved/Wanted</u></p> <p>Moroccan Home Office Local authorities:</p>

<p>beginning, i.e. as soon as Renault decided to build a green automotive plant, was crucial for the project.</p> <p>2. The RENAULT-VEOLIA team worked very closely. The combination of the VEOLIA environmental expertise and the RENAULT automotive process know-how was essential to find the best environmental solutions with no adverse impact on the automotive process performance.</p>	<ul style="list-style-type: none"> - Commune MELLOUSSA - Province FAHS ANJRA - Willaya TANGER-ASILAH - Province LARACHE <p>Waters and forest national office Agriculture laboratory Local forestry companies Moroccan INRA (agro research) Moroccan olives transformation company large and small (AICHA...)</p>
<p><u>Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success</u></p> <p>It was essential for the car manufacturer's top management to consider this type of project as a true strategic choice.</p> <p>The condition for success was the capacity of Renault and Veolia to fully share their respective expertise.</p> <p>For example the fact that the client included Veolia very soon into the partnership allowed him to cancel an unnecessary planned investment in a gas pipe, as a biomass power plant resulted to be fully adapted.</p>	
<p><u>Comments: Please list any additional Statements, messages or call for action you may wish to gather from the audience</u></p> <p>RENAULT and VEOLIA transformed an industrial project in a Green Economy project. This approach allowed the development of new skills in Morocco, the creation of a new rural activity (crops for plant bio-energy) complementary of an also new industrial activity (car production), and the enhancement of the local population environmental awareness.</p>	
<p><u>Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue</u></p> <p>Veronica Capella (Industrial Markets Department) Email: veronica.capella@veolia.com Bernard Lanfranchi (European Affairs Department) Email: bernard.lanfranchi@veolia.com</p>	

Calls for collaboration

Key alignment(s) with the ten green economy conditions

- Awareness
- Life cycle approach
- Integrated environmental, social and economic policy and decision-making

<p><u>Description</u></p> <p>The document is a 30-page informative paper covering the various aspects of sustainability from a product point of view. It aims to provide (small) companies with an indication of the key elements to consider when evaluating the sustainability of their existing and future chemical portfolio. It gives practical suggestions to address life cycle assessment (considering closed loop approach, environmental footprint), economic analysis (including eco-efficiency) and social life cycle assessment. It gives also examples from companies or associations on how to evaluate each pillar of sustainability and lists useful references to look at.</p> <p>Considered choices would have to be made when identifying the most sustainable option as there may be conflicting issues. Some of them (product development and substitution, feedstock) are described with pros and cons for each aspects detailed.</p> <p>A to-do list is added which covers the following points:</p> <ul style="list-style-type: none"> - Encourage life cycle thinking - Understand product or service added value - Know where the environmental hotspots are - Measure, monitor and manage - Turn a waste into a resource - Keep up-to-date with policy developments and requirements <p>These suggestions should help shaping a company future business strategy.</p>	
<p><u>Initiating Organization</u></p> <p>Cefic Product Stewardship Programme http://www.cefic.org/</p>	<p><u>Geographic Scope</u></p> <p>EU & European Countries</p>
<p><u>Potential Goals of the Collaboration</u></p> <p>Anticipated goals include awareness-raising among members at national chemical association level and tools used in practice.</p>	<p><u>Type of Partners Involved/Wanted</u></p> <p>Chemical industry associations and companies, especially SMEs – Downstream industries can be engaged as well.</p>

Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success

Success will be measured by country specific initiatives, workshop debates on hot issues (e.g. substitution), additional tools or examples proposed.

Comments: Please list any additional Statements, messages or call for action you may wish to gather from the audience

When evaluating sustainability of a product, trade-offs will always need to be analysed. Considered choice on chemical substitution or feedstock are two specific elements covered by the thought starter. More problematic societal issues can be addressed and more examples of good practices should be collected. Compliance and certification should be discussed with customers and authorities.

Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue

Véronique Garny – Cefic
Email: vga@cefic.be

Ecole des Mines ParisTech, Centre de Mathématiques appliquées (CMA)

A prospective analysis of green economy potential impacts

Key alignment(s) with the ten green economy conditions

- Metrics, accounting, and reporting
- Integrated environmental, social and economic policy and decision-making

Description

In order to address the critical environmental, social, and economic challenges that humanity is currently facing, defining a new global economic model/an in-depth change in the economic model has become necessary. In this context, the Center for Applied Mathematics (CMA) of the Ecole des Mines ParisTech welcomes the ICC initiative for a Green Economy Roadmap and strongly believes in synergies that would result from a joint collaboration.

As recalled by the ICC Commission on Environment and Energy, “*there is no single agreed definition [or] set of indicators [...] for what exactly the ‘Green Economy’ consists of*”. We therefore agree on the necessity to work further on the development of new (macro-political accounting standards and) macro-economic indicators, which will be essential for an integrated environmental, social and economic approach to decision making. The CMA currently developing research activities on these themes/in this direction, is interested in working jointly with partners, such as the ICC.

This proposal for collaboration would first consist of an in-depth analysis and further development of new macro-political accounting standards and macro-economic indicators at the system level/global scale, beyond the growth domestic product, which would encompass environmental, social, and economic dimensions, and thus integrate the cost of externalities. Such a development is needed not only to improve disclosure and reporting, but also to provide useful tools for decision making.

Through a prospective approach, these indicators will then be used to identify, distinguish and characterize different visions of socio-economic organization leading towards a “green economy”, to elaborate corresponding scenarios, and finally, to analyze and assess the possible repercussions /impacts of various “green economy” pathways on the economy, the society, the environment, and energy related sectors. This work will be carried out with the support of sociologists, economists, science historians, whose methodologies will be involved for the analysis of existing work in this field and for the study of the links between economy and society.

Initiating Organization

Ecole des Mines ParisTech, Centre de Mathématiques appliquées (CMA)
<http://www.cma.ensmp.fr/>

Geographic Scope

Our project aims at developing **global** (macro- and meso) economic indicators that will be used to assess various green economy options at **national scale** and more specifically for **France**.

<p><u>Potential Goals of the Collaboration</u></p> <ul style="list-style-type: none"> -prospective assessment of different scenarios for “green economy”, possible impacts on economy, society, environment, energy sector -benefit from different standpoints, shared analysis with economic actors -(financial support) 	<p><u>Type of Partners Involved/Wanted</u></p> <p>-Partners of the Chair ParisTech (ADEME, EDF, RENAULT, SCHNEIDER electric, TOTAL)</p>
<p><u>Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success</u></p> <p>Discussion with all types of economic and social actors, holistic approach...?</p>	
<p><u>Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.</u></p> <p>Nadia Maizi, Director CMA Email: nadia.maizi@cma.ensmp.fr</p>	

PhD Program in Environmental Design, Department DATA, Sapienza University of Rome, Italy

Best practices / Strategies for starting up economic, social and environmental development in emerging contexts, through the recovery and development of local resources: the Goiabeira case.

Key alignment(s) with the ten green economy conditions

- Awareness
- Education and skills
- Employment
- Resource efficiency and decoupling
- Life cycle approach
- Integrated environmental, social and economic policy and decision-making

Description

The work of the PhD in Environmental Design, University of Rome "Sapienza" on the Polyvalent Centre Project "Sunlight" is born with the main goal of promoting economic, environmental and social development in the community of Goiabeira (the north-east of Brazil), through the elaboration of best practice of intervention in emerging contexts.

The study particularly focuses on setting up sustainable strategies for the identification of: architectural devices (analyzing resources, local materials and building technologies); ecological devices (water cycle and waste cycle); energy-saving devices; active and passive devices for energy production; best practices to promote participation in the construction process. The collaboration with the non-profit association "La Luce" is aimed at achieving the goals of environment, food and hygiene education, as well as supplying of tools and facilities for the education and training of the population.

The context analysis shows the emergency situation of the State of Bahia, consequence of the impoverishment of agricultural resources as a direct result of the drought, and the general economic crises. The community sees a relevant increase of the state of poverty due to a sharp increase in unemployment. Access to basic services (health, education, environment etc.) is also alarming; for local people the land is the only source of income.

To enhance and improve the agricultural production, 50 families in the community of Goabeira I, II and St. Martha, have agreed to join a common project of local development. On-site investigation as well as the numerous contacts with the inhabitants revealed the real need to give the Community facilities and services to enable the launch of a natural development of socio-economic and production activities and the consequent increase in the quality of life for all.

The area is lacking the most important services and infrastructure: no water supply, electricity grid sparsely distributed, scant means of connection with the city. Currently, families live in precarious dwellings built with scrap materials. The sanitary conditions are extremely precarious.

The project aims to build a village around a mill for the production of cassava flour, the staple food for the community. Wells and tanks to collect water and the mill have already been built. A Polyfunctional center with craft workshops, warehouses for storage and preservation of coffee, a school, a dining hall, classrooms for training, hygiene and nutrition education, a space for recreation and cultural activities, a library, a medical center, housing

for guardians and volunteers, accommodation for children and teenagers without family, a community garden and beekeeping are all the activities to be built in the next years.

Overall aim of the project is to improve the socio economic and environmental aspects of the Community and the quality of life of its population, recovering and valorizing local culture as a resource in the process of emancipation from material and social poverty. In particular, the project seeks to provide the community with real development tools, creating infrastructure and facilities and undertaking interventions which lead to the adoption of an "entrepreneurial culture", in order to overcome the logic of subsistence and switch to a market economy.

In detail, the operation has the following specific objectives: to ensure the livelihood of households by starting production and processing activities related to agriculture and handicrafts; ensure the socio-economic development of young people in respect of social and cultural traditions, with special care to environmental protection; to make orientation courses and training programs to assist children, teenagers and adults in situations of personal and social risk; to start courses of sexual orientation, hygiene and health education; to encourage children, teenagers and adults to recognize in education the main tool for improving their living conditions and emancipation from poverty and social exclusion.

Coordinator in charge of activities: prof. Alessandra Battisti

Initiating Organization

PhD Program in Environmental Design (Progettazione Ambientale), Department DATA, Sapienza University of Rome
<http://w3.uniroma1.it/progamb/h/?q=en/node/5559>

Geographic Scope

The project applies in the Community of Goiabeira, 14 km from Vitória da Conquista, State of Bahia, Brazil

Potential Goals of the Collaboration

The purpose of the collaboration with the association "La Luce" and, through it, with the local community, is to go beyond the establishment of a project to fulfill the economic and environmental criteria and to presents an excellent intervention in developing contexts. The goal is to include the needs and interests of inhabitants from the planning stage, through the construction, until the independent management of the village. The ultimate goal is not produce a settlement, but to start a process; to provide the tangible and intangible tools for the full autonomy of the community.

Type of Partners Involved/Wanted

Partners Involved:
 _Sapienza University of Rome, Faculty of Architecture
 _Sapienza University of Rome, Environmental and Technological _Design Section of DATA Department
 No-profit Association (onlus) "La Luce"

Conditions for Success/Success Factors: briefly describe what is needed to grow this project for future success

What is needed to grow this project for future success is the constant interaction with the local community through all the stages of the building process; the enhancement of local resources; the integration of economic supplies; the creation of technological know-how and therefore the professional training and the creation of employment within the community itself; the promotion of social aggregation.

Provide name of focal point for this engagement: This person is in charge of any follow up and future dialogue.

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The International Chamber of Commerce (ICC)

ICC is the world business organization, a representative body that speaks with authority on behalf of enterprises from all sectors in every part of the world.

The fundamental mission of ICC is to promote open international trade and investment and help business meet the challenges and opportunities of globalization. Its conviction that trade is a powerful force for peace and prosperity dates from the organization's origins early in the 20th century. The small group of far-sighted business leaders who founded ICC called themselves "the merchants of peace".

ICC has three main activities: rule setting, dispute resolution, and policy advocacy. Because its member companies and associations are themselves engaged in international business, ICC has unrivalled authority in making rules that govern the conduct of business across borders. Although these rules are voluntary, they are observed in countless thousands of transactions every day and have become part of the fabric of international trade.

ICC also provides essential services, foremost among them the ICC International Court of Arbitration, the world's leading arbitral institution. Another service is the World Chambers Federation, ICC's worldwide network of chambers of commerce, fostering interaction and exchange of chamber best practice. ICC also offers specialized training and seminars and is an industry-leading publisher of practical and educational reference tools for international business, banking and arbitration.

Business leaders and experts drawn from the ICC membership establish the business stance on broad issues of trade and investment policy as well as on vital technical and sectoral subjects. These include anti-corruption, banking, the digital economy, telecommunications, marketing ethics, environment and energy, competition policy and intellectual property, among others.

ICC works closely with the United Nations, the World Trade Organization and other intergovernmental forums, including the G20.

ICC was founded in 1919. Today it groups hundreds of thousands of member companies and associations from over 120 countries. National committees work with ICC members in their countries to address their concerns and convey to their governments the business views formulated by ICC.

Contact:

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International Chamber of Commerce

The world business organization

Policy and Business Practices

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